Grades 6–8

3.5.6-8.K Technology and Engineering: Applying, Maintaining, Assessing, and Evaluating Technological Products and Systems

Students who demonstrate understanding can *use devices to control technological systems.*

Clarifying Statement: Students should be familiar with and use sensors to control technological systems such as robotic devices, alternative energy vehicles, and other technologies. Many machines are equipped with other types of safety devices to protect the user.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Using Mathematics and Computational Thinking Mathematical and computational thinking in 6–8 builds on K–5 experiences and progresses to identifying patterns in large data sets and using mathematical concepts to support explanations and arguments. • Use digital tools (e.g., computers) to analyze very large data sets for patterns and trends.	**Automation & Algorithmic Thinking** • Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.	**Making and Doing** • Exhibits safe, effective ways of producing technological products, systems, and processes. **Systems Thinking** • Uses the systems model to show how parts of technological systems work together.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to manufacturing businesses.

Pennsylvania Career Ready Skills: Explain to others one's own strengths, needs, and preferences specific to a context.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards: Reading and Writing in Science and Technical Areas	CC.1.2.3.G: Use information gained from text features to demonstrate understanding of a text. CC.1.2.4.G: Interpret various presentations of information within a text or digital source and explain how the information contributes to an understanding of text in which it appears. CC.1.2.5.G: Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. CC.1.4.3.V: Conduct short research projects that build knowledge about a topic. CC.1.4.4.V: Conduct short research projects that build knowledge through investigation of different aspects of a topic. CC.1.4.5.V: Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. CC.1.4.3.W: Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. CC.1.4.4.W: Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources. CC.1.4.5.W: Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards and Practices: Math	MP.5: Use appropriate tools strategically.
Integrated Standards for Science, Environment & Ecology, and Technology & Engineering Standards Grades K–12	N/A