Grades 6–8

3.5.6-8.Y Technology and Engineering: Integration of Knowledge, Technologies, and Practices

Students who demonstrate understanding can *compare, contrast, and identify overlap between the contributions of science, technology, engineering, and mathematics in the development of technological systems.*

Clarifying Statement: Students at this level can discern the contributions the fields of science, engineering, mathematics, and technology (as well as other disciplines) contribute to the advancement of technological tools and systems. One way this can be accomplished is by evaluating a completed engineering design task and identifying the elements from other academic disciplines that contributed to the completion of the task.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
Obtaining, Evaluating, and Communicating Information Obtaining, evaluating, and communicating information in 6–8 builds on K–5 experiences and progresses to evaluating the merit and validity of ideas and methods. • Critically read scientific texts adapted for classroom use to determine the central ideas and/or obtain scientific and/or technical information to describe patterns in and/or evidence about the natural and designed world(s).	**NAEP D.8.1** • Science is the systematic investigation of the natural world. Technology is any modification of the environment to satisfy people's needs and wants. Engineering is the process of creating or modifying technologies and is constrained by physical laws and cultural norms, and economic resources.	**Collaboration** • Exhibits effective technical writing, graphic, and oral communication abilities.

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

Pennsylvania Career Ready Skills: Analyze various perspectives on a situation.

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.
PA Core Standards: Reading and Writing in Science and Technical Areas (continued)	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.
PA Core Standards and Practices: Math	MP.3: Construct viable arguments and critique the reasoning of others.
Integrated Standards for Science, Environment & Ecology, and Technology & Engineering Standards Grades K–12	N/A