



Grades 6–8

3.5.6-8.KK Technology and Engineering: Nature and Characteristics of Technology and Engineering

Students who demonstrate understanding can *explain how technology and engineering are closely linked to creativity, which can result in both intended and unintended innovations.*

Clarifying Statement: Creativity requires an individual to use knowledge and experience from different subjects to create something new or to use something in a new way. Many inventions are inspired by perceived needs and wants—the toothbrush, for example. At other times, inventions emerge in unexpected ways. For example, Stephanie Kwolek was working to find a replacement for steel cords in tires when she inadvertently invented Kevlar. Creatively exploring new ideas is often key to improvement of technological products and systems.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
<p>Obtaining, Evaluating, and Communicating Information</p> <p>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.</p> <ul style="list-style-type: none"> Communicate scientific and/or technical information (e.g., about a proposed object, tool, process, system) in writing and/or through oral presentations. 	<p>NAEP D.8.2</p> <ul style="list-style-type: none"> Technology advances through the processes of innovation and invention. Sometimes a technology developed for one purpose is adapted to serve other purposes. 	<p>Creativity</p> <ul style="list-style-type: none"> Defends technological decisions based on evidence. <p>Making and Doing</p> <ul style="list-style-type: none"> Exhibits safe, effective ways of producing technological products, systems, and processes.

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to Pennsylvania’s inventors and inventions.

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)
<p>PA Core Standards: Reading and Writing in Science and Technical Areas</p>	<p>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.</p>
<p>PA Core Standards and Practices: Math</p>	<p>MP.2: Reason abstractly and quantitatively. MP.7: Look for and make use of structure.</p>
<p>Integrated Standards for Science, Environment & Ecology, and Technology & Engineering Standards Grades K-12</p>	<p>N/A</p>