



**Grades 6–8**

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

**Students who demonstrate understanding can** *examine the ways that technology can have both positive and negative effects at the same time.*

**Clarifying Statement:** The form and function of technologies are shaped by the criteria considered when the technology is developed. Even beneficial and well-intentioned solutions can have negative impacts. For example, flush toilets led to improved health and hygiene; at the same time, they created a need for water treatment strategies that consume large amounts of energy and fresh water. This type of example provides students an opportunity to consider the importance of design criteria.

**Assessment Boundary:** N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
<p><b>Obtaining, Evaluating, and Communicating Information</b></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"> <li>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).</li> </ul>	<p><b>NAEP T.8.3</b></p> <ul style="list-style-type: none"> <li>Describe and analyze positive and negative impacts on society from the introduction of a new or improved technology, including both expected and unanticipated effects.</li> </ul>	<p><b>Attention to Ethics</b></p> <ul style="list-style-type: none"> <li>Shows an understanding of ways to regulate technologies and the reasons for doing so.</li> </ul>

**Pennsylvania Context:** N/A

**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)
<p><b>PA Core Standards: Reading and Writing in Science and Technical Areas</b></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><b>PA Core Standards and Practices: Math</b></p>	<p>MP.2: Reason abstractly and quantitatively.                      MP.7: Look for and make use of structure.</p>
<p><b>Integrated Standards for Science, Environment &amp; Ecology, and Technology &amp; Engineering Standards Grades K–12</b></p>	<p>3.3.6-8.M: Apply scientific principles to design a method for monitoring and minimizing human impact on the environment.</p>