



**Grades K–2**

**3.5.K-2.T Technology and Engineering:** Design in Technology and Engineering Education

**Students who demonstrate understanding can demonstrate that designs have requirements.**

**Clarifying Statement:** Young children recognize that all designs must meet certain expectations. These expectations are related to the purpose, function, and requirements of a solution.

**Assessment Boundary:** N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
<p><b>Constructing Explanations and Designing Solutions</b></p> <p>Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions.</p> <ul style="list-style-type: none"> <li>Generate and/or compare multiple solutions to a problem.</li> </ul>	<p><b>ETS1.A: Defining and Delimiting Engineering Problems</b></p> <ul style="list-style-type: none"> <li>Before beginning to design a solution, it is important to clearly understand the problem.</li> </ul>	<p><b>Critical Thinking</b></p> <ul style="list-style-type: none"> <li>Engages in listening, questioning, and discussing.</li> </ul>

**Pennsylvania Context:** Examples of Pennsylvania context include but are not limited to Pennsylvania Department of Labor & Industry regulations.

**Pennsylvania Career Ready Skills:** Identify one’s own strengths, needs, and preferences.

**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.1.4.K.U: With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers.</p> <p>CC.1.4.1-2.U: With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers.</p> <p>CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest.</p> <p>CC.1.4.1-2.V: Participate in individual or shared research and writing projects.</p> <p>CC.1.4.K-1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question.</p> <p>CC.1.4.2.W: Recall information from experiences or gather information from provided sources to answer a question.</p> <p>CC.1.5.K-2.A: Participate in collaborative conversations with peers and adults in small and larger groups.</p>
<p><b>PA Core Standards and Practices: Math</b></p>	<p>MP.2: Reason abstractly and quantitatively.</p> <p>MP.4: Model with mathematics.</p> <p>MP.5: Use appropriate tools strategically.</p>



**Science, Technology &  
Engineering, and  
Environmental Literacy &  
Sustainability Academic  
Standards**

N/A