



Grades K–2

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

Students who demonstrate understanding can *discuss that all designs have different characteristics that can be described.*

Clarifying Statement: Young children recognize and categorize basic features of design, which represent principles and elements of design. In drawing, they begin to differentiate between lines, colors, and shapes. In thinking about early ideas on design, they might brainstorm with other children, draw sketches, and see how well their ideas worked out.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
<p>Constructing Explanations and Designing Solutions</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"> Generate and/or compare multiple solutions to a problem. 	<p>ETS1.B: Developing Possible Solutions</p> <ul style="list-style-type: none"> Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem’s solutions to other people. 	<p>Communication</p> <ul style="list-style-type: none"> Learns that humans have many ways to communicate.

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

Pennsylvania Career Ready Skills: Select and utilize expressive communication strategies (e.g., tone, body language, facial expressions) with an understanding of its effect on others.

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.1.4.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>PA Core Standards and Practices: Math</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