



Grades K–2

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

Students who demonstrate understanding can apply design concepts, principles, and processes through play and exploration.

Clarifying Statement: Design experiences build on young children's natural curiosity, desire to explore, and persistence. Familiar materials, tools, and environments will enhance these experiences.

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"> Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem. 	<p>ETS1.C: Optimizing the Design Solution</p> <ul style="list-style-type: none"> Because there is always more than one possible solution to a problem, it is useful to compare and test designs. 	<p>Making and Doing</p> <ul style="list-style-type: none"> Learns to use tools and materials to accomplish a task. <p>Creativity</p> <ul style="list-style-type: none"> Learns that humans create products and ways of doing things.

Pennsylvania Context: N/A

Pennsylvania Career Ready Skills: Identify possible behaviors and anticipate reactions in response to a specific social context.

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	<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>
PA Core Standards and Practices: Math	<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