



Grades K–2

3.5.K-2.BB Technology and Engineering: Nature and Characteristics of Technology and Engineering

Students who demonstrate understanding can compare the natural world and human-made world.

Clarifying Statement: The natural world includes trees, plants, animals, rivers, oceans, mountains, and other items that make up the earth’s landscape, biomes, and climate. The human-made world includes pencils, rulers, computers, buildings, airplanes, roads, refrigerators, communication devices, and other items developed for the betterment of humans.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Technology and Engineering Practices (TEP)
<p>Asking Questions and Defining Problems</p> <p>Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions that can be tested.</p> <ul style="list-style-type: none"> Define a simple problem that can be solved through the development of a new or improved object or tool. 	<p>ESS3.A: Natural Resources</p> <ul style="list-style-type: none"> Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. 	<p>Systems Thinking</p> <ul style="list-style-type: none"> Learns that human-designed things are connected. <p>Critical Thinking</p> <p>Engages in listening, questioning, and discussing.</p>

Pennsylvania Context: Examples of Pennsylvania context include but are not limited to robotic industries and agriculture industries.

Pennsylvania Career Ready Skills: Identify consequences of a decision to oneself and others prior to action.

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

3.2.1.C: Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.