



Kindergarten

3.2.K.D Physical Science: Energy

Students who demonstrate understanding can *use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.*

Clarifying Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.

Assessment Boundary: N/A

Science and Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Constructing Explanations and Designing Solutions 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. <ul style="list-style-type: none"> Use tools and materials provided to design and build a device that solves a specific problem or a solution to a specific problem. 	Conservation of Energy and Energy Transfer <ul style="list-style-type: none"> Sunlight warms Earth's surface. 	Cause and Effect <ul style="list-style-type: none"> Events have causes that generate observable patterns.

Pennsylvania Context: Examples of Pennsylvania context include materials found naturally in Pennsylvania, such as wood from the state's forests.

PA Career Ready Skills: Interact in pro-social ways (e.g., reciprocal conversation, turn taking, sharing) with peers and adults.

Connections to Other Standards Content and Practices

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
Agriculture (AFNR)	CS.01.02.01.c: Solve problems in AFNR work-places or scenarios using technology.
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 3.1.C. Identifying and critiquing alternative solutions and courses of action: Learners develop plans, including possible design solutions, for addressing selected local environmental issues.
PA Core Standards: ELA	CC.1.4.K.V: Participate in individual or shared research projects on a topic of interest. CC.1.5.K.A: Participate in collaborative conversations with peers and adults in small and larger groups.



Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Core Standards and Practices: Math	MP.5: Use appropriate tools strategically. CC.2.3.K.A.1: Identify and describe two- and three-dimensional shapes. CC.2.3.K.A.2: Analyze, compare, create, and compose two- and three-dimensional shapes.
PA Standards: Social Studies	5.1.K.E: Demonstrate responsibilities in the classroom.
Educational Technology (ISTE)	1.4. Innovative Designer: Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.
Technology and Engineering (ITEEA)	STEL-1C: Demonstrate that creating can be done by anyone.