Grade 1

3.2.1.B Physical Science: Waves and Their Applications in Technologies for Information Transfer

Students who demonstrate understanding can *make observations to construct an evidence-based account that objects can be seen only when illuminated.*

Clarifying Statement: Examples of observations could include those made in a completely dark room, a pinhole box, and a video of a cave explorer with a flashlight. Illumination could be from an external light source or by an object giving off its own light.

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. • Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.	**PS4.B: Electromagnetic Radiation** • Objects can be seen if light is available to illuminate them or if they give off their own light.	**Cause and Effect** • Simple tests can be designed to gather evidence to support or refute student ideas about causes.

Pennsylvania Context: Examples of Pennsylvania context include Pennsylvania's cave systems and mines.

PA 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)
Agriculture (AFNR)	CS.03.03.04.c: Create a plan to mitigate the level of contamination or injury identified as a risk in the workplace.
Science, Environmental Literacy and Sustainability (NAAEE)	K-4 Strand 1.C. Collecting information: Learners locate and collect information about the environment and environmental topics.
PA Core Standards: ELA	CC.1.4.1.W: With guidance and support, recall information from experiences or gather information from provided sources to answer a question. CC.1.5.1.A: Participate in collaborative conversations with peers and adults in small and larger groups.
PA Core Standards and Practices: Math	MP.5: Use appropriate tools strategically. CC.2.4.1.A.1: Order lengths and measure them both indirectly and by repeating length units.

Standard Source	Possible Connections to Other Standard(s) or Practice(s)
PA Standards: Social Studies	5.4.1.B: Describe how classrooms can work together.
Educational Technology (ISTE)	1.3. Knowledge Constructor: Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.
Technology and Engineering (ITEEA)	STEL-2B: Safely use tools to complete tasks.