



## 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)
<b>Constructing Explanations and Designing Solutions</b> 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"> <li>Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.</li> </ul>	<b>Electromagnetic Radiation</b> <ul style="list-style-type: none"> <li>Objects can be seen if light is available to illuminate them or if they give off their own light.</li> </ul>	<b>Cause and Effect</b> <ul style="list-style-type: none"> <li>Simple tests can be designed to gather evidence to support or refute student ideas about causes.</li> </ul>

**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)
<b>Agriculture (AFNR)</b>	CS.03.03.04.c: Create a plan to mitigate the level of contamination or injury identified as a risk in the workplace.
<b>Science, Environmental Literacy and Sustainability (NAAEE)</b>	K-4 Strand 1.C. Collecting information: Learners locate and collect information about the environment and environmental topics.
<b>PA Core Standards: ELA</b>	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.
<b>PA Core Standards and Practices: Math</b>	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.