

Grade 1 – Physical Science



Waves and their Applications in Technologies for Information Transfer

| Standard | Learning Objective | Clarification Statement |
|---|---|---|
| <p>1.PS4.1 Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.*</p> <p><i>Assessment Boundary: None.</i></p> | <p>1.1 Observe sound.</p> <p>1.2 Observe vibrations.</p> | <p>Examples of vibrating materials that make sound could include tuning forks and plucking a stretched string. Examples of how sound can make matter vibrate could include holding a piece of paper near a speaker making sound and holding an object near a vibrating tuning fork.</p> |
| <p>1.PS4.2 Make observations to construct an evidence-based account that objects can be seen only when illuminated.</p> <p><i>Assessment Boundary: None.</i></p> | <p>2.0 Observe objects in the presence of light.</p> | <p>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.</p> |
| <p>1.PS4.3 Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.</p> <p><i>Assessment Boundary: Assessment does not include the speed of light.</i></p> | <p>3.0 Determine how objects affect the path of light.</p> | <p>Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror).</p> |
| <p>1.PS4.4 Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.</p> <p><i>Assessment Boundary: Assessment does not include technological details for how communication devices work.</i></p> | <p>4.1 Use light to communicate.</p> <p>4.2 Use sound to communicate.</p> | <p>Examples of devices could include a light source to send signals, paper cup and string “telephones,” and a pattern of drum beats.</p> |

**The Next Generation Science Standards were created by the NGSS Lead States (2013)*