2017 Science Unit 4: Light and Sound ; Grade 1

Content Area: **Science**
Course(s): **Science 1**
Time Period: **Marking Period 3**
Length: **March - April**
Status: **Published**

Established Goals/Standards

SCI.1-PS4-2	Make observations to construct an evidence-based account that objects can be seen only when illuminated.
SCI.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.
SCI.1-PS4-1	Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
SCI.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.

Essential Questions

- How can you prove that you can only see something when someone shines a light on it or if the object gives off its own light?
- How do instruments (band) make sound?
- How would you design an experiment to prove your thinking?
- What happens to a beam of light when you put different kinds of things in front of it?

Enduring Understanding

How can we design tests so that we can investigate how sound behaves and how light behaves?

Content

Wave Properties

• Sound can make matter vibrate, and vibrating matter can make sound. (1-PS4-1)

Electromagnetic Radiation

• Objects can be seen if light is available to illuminate them or if they give off their own light. (1-PS4-2)

• Some materials allow light to pass through them, others allow only some light through and others block all the light and create a dark shadow on any surface beyond them, where the light cannot reach.

- Mirrors can be used to redirect a light beam. (Boundary: The idea that light travels from place to place is developed through experiences with light sources, mirrors, and shadows, but no attempt is made to

discuss the speed of light.) (1-PS4-3)

Assessment

Students who understand the concepts can:

- Design simple tests to gather evidence to support or refute ideas about cause and effect relationships.
- Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.
- Make observations (e.g., in a completely dark room, using a pinhole box, using video of a cave explorer with a flashlight) to construct an evidence- based account that objects can be seen only when illuminated (from an external light source or by an object giving off its own light).
- Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. Materials can be:
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    - − Transparent (clear plastic, glass)
      − Translucent (wax paper, thin cloth)
      − Opaque (cardboard, construction paper)

Resources

Teacher generated ActivBoard Flipcharts

United Streaming

You Tube

Mystery Science

NGSS @ nsta.org National Science Teachers Association website

Science Spin

NJ Model Curriculum

https://www.symbaloo.com/mix/ngss7 NGSS symbaloo

Experiments/Observations/Journals

Non-Fiction Science leveled readers

Non-Fiction Books from school library

Scholastic News First Grade Level

Mailbox Magazine activities (core curriculum aligned)

Teacher's Helper activities (core curriculum aligned)

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