Sound and Light (Part 2- Light)

Essential Question: How do sound and light travel?

Students will explore the concepts of illumination, how certain materials allow light to pass through them, while others block all light creating a shadow.

Next Generation Science Standards

- 1-PS4-2 Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated.
- 1-PS4-3 Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light.

Materials needed for each student:

- Flashlight (any size or type) for each student **Optional
- Natural vs Manmade Light Worksheet
- Graph
- Choose A or B Below:

- A. Blank sheet of paper (preferably no lines)/An object to trace shadow/pencil
- B. Sidewalk chalk-Students will trace body shadow of their partner

Advanced preparation:

- Print out Worksheets on last 2 pages

Lesson Overview:

This is the second lesson in the 1st Grade Sound and Light Series. Each lesson is designed as a stand-alone lesson, so you can participate in one or all of the lessons! In this lesson students will explore the concepts of illumination, how certain materials allow light to pass through them, while others block all light creating a shadow. Students will log data in a graph, match Natural vs Manmade light sources, and make Shadow Art.

Be watching for more lessons in the **1st Grade Sound and Light Series**!
November: (Part 3) Communication

Program Connection Information

Please use an external microphone (conference style) rather than the integrated one in the computer for the audio for your class and locate it centrally in the room. It can be difficult for the Greenbush teacher to hear the students using the computer microphone and therefore it reduces the interactive nature of the lesson. It is fine to use the computer webcam for your video source.

All classes will take place using Zoom desktop video. If your building is already set up to use a desktop video application with a computer, simply open a browser and enter https://greenbush.zoom.us/j/5337714346 in the URL space. You may need to download Zoom launcher software (free download) if you don't already have it. This needs to be done in advance of the lesson.

If using a Polycom video conferencing unit (or any legacy type video conferencing unit) to connect to a ZOOM conference, make sure the unit is in "encrypted mode" then dial the following IP on the internet:162.255.37.11 or 162.255.36.11 and once connected, they will ask for a MEETING ID: enter 533 771 4346 (for Sheila at Science Center).

It's always a good idea to touch base with your district technology facilitator prior to your program to make sure all systems/equipment are in place and operational and that there aren't any firewalls in place that might prevent you from connecting to Zoom.

Once you connect, you will enter a Zoom waiting room. Your Greenbush teacher will admit you into the final meeting room.

If you have questions, please call Sheila Sandford at Greenbush, 620-724-6281, or email at sheila.sandford@greenbush.org (best method of contact).

Let's investigate to determine the effect of placing objects made with different materials in the path of a beam of light.

How well do you what's on the other side?

Object	Clearly	Blurry	Can't see it
Plastic Wrap			
Wax Paper			
Foil			
Cardboard			

Transparent – I can see it clearly
Translucent- I can see it, but it looks blurry.
Opaque- I can't see it.

Natural Light vs Manmade Light