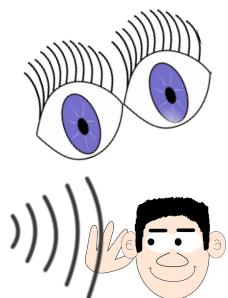


# Light and Sound



You see examples of light and sound every moment of every day. However, over the next few weeks, you are going to explore how light and sound impact our world in ways you probably never even realized!



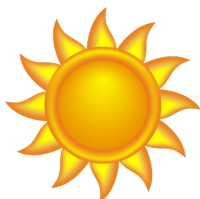
Both light and sound travel in waves. You'll learn how sound waves reach your ears, and how your eyes process light. Without sound waves, we wouldn't be able to hear musical instruments playing our favorite songs or our people talking to us. Without light waves, our eyes wouldn't be able to recognize the different colors in a rainbow or see in the dark!



You will learn how people used sunlight and shadows to tell time before the creation of the clock, and how the invention of the telephone helped people communicate with friends and family far away.



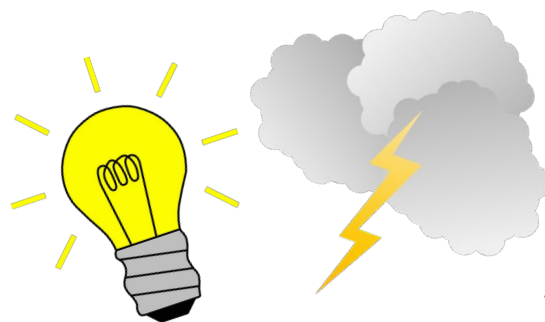
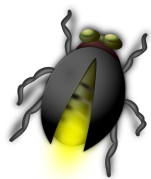
You will explore how light and sound can be used to create energy, and you will create your own solar oven! You'll also see how certain animals create and *emit* light! (Have you ever seen a lightning bug in your backyard?)



Light and sound can also be used to create art, tell stories, and more!



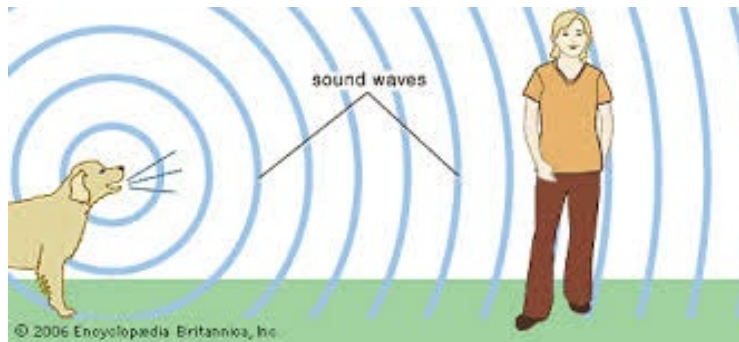
Each activity in this packet will have you thinking, discovering, creating, and having fun! Enjoy!



## Day 1 Sound: Waves

### Science

Soundwaves are vibrations, and the vibrations cause us to hear different sounds!



Try it out! Pour water in varying amounts into different glasses. Gently tap the glasses with a spoon, or another object.



Does the amount of liquid in each glass change its sound? What happens if you change the type of liquid? Or the type of container?

Watch this Zoom video to learn more!: <http://ow.ly/f9A550AGFDB>



## Day 1 Sound: Waves

### Social Studies

Did our experiment remind you of playing drums?

Many cultures have used drums as an effective form of communication. However, one culture in particular used it as an early form of a telephone. The African drum was a marvel to Europeans who were amazed that most villages knew of their arrival days before they entered the settlement. Scientists have stated that the speed of an African message can be transmitted at about 100 miles in an hour.

Among the famous communication drums are the drums of West Africa. From regions known today as Nigeria and Ghana, they spread across West Africa to America and the Caribbean during the 18th and 19th centuries. Unfortunately, the drums were banned because they were being used by the enslaved to communicate with one another over long distances.

## Drums from Around the World



<https://melodyful.com/types-of-drums-around-world>

Extension:

Take a look at how drums are used for communication in Japan!

<http://ow.ly/k7Qn50AGFAz>



# Day 1 Sound: Waves

## Math

Use the code box clues to complete the story below. Once you complete the story, use a tabletop as a drum to play out the story (each = one drum beat).

NAME \_\_\_\_\_

### AFRICAN DRUM COMMUNICATION - MATH

**Directions:** Utilize a tabletop as a drum to use the code box clues to decode the puzzle below. (each ● = one drum beat)

CODE BOX	
●	RUN
● ●	JUMP
● ● ●	HIDE
● ● ● ●	GO HOME
● ● ● ● ●	STOP

Imani and Aliyah are playing a game of Simone says. Imani is Simon. She says to Aliyah, "Simone says ● ● \_\_\_\_\_." Next, Imani says to Aliyah, "Simone says ● \_\_\_\_\_."

After that, Imani says to Aliyah, "Simone says, ● ● ● \_\_\_\_\_." Then, Imani says to Aliyah, "● ● ● ● ● \_\_\_\_\_!" Finally, Imani says to Aliyah, "You're out because I didn't say Simone Says. It's time for you to ● ● ● ● \_\_\_\_\_."

