

Topic: Sound & Light

Learning Goals:

- 1. Compare sound traveling through different solids.
- 2. Create a model illustrating the relationship between wavelength and color of light.

What do you already KNOW about the topic?	What do you WANT to learn about the topic?	What did you LEARN about the topic?

Vocabulary

Lightning	The discharge of static electricity		
Sound	Form of energy produced and transmitted by vibrating matter		
Frequency	Number of wavelengths in a given unit of time		
Wavelength	Distance between two compressions (can be measured from crest to crest OR trough		
	to trough)		
Pitch	Determined by the frequency of a vibrating object (high frequency = high pitch; low		
	frequency = low pitch)		
Amplitude	Amount of energy in a sound wave (referred to as wave height in ocean and light		
	waves); related to volume		
Crest	Top of a wave		
Trough	Bottom of a wave		
Light	Waves of energy		
Visible Spectrum	The colors we see with our eyes: Red, Orange, Yellow, Green, Blue, Violet (ROY G BV)		
Reflection	When light bounces back		
Refraction	When light is bent; you can see the colors of the rainbow		
Transmitted	When light goes through something		



Science Log – 5th

Spoon Sounds

Supplies: 2 feet of yarn, plastic string, and twine, 3 metal spoons, pencil

Directions:

- I. Tie I spoon on the end of each type of string.
- 2. Put a small hole through the bottom of 3 paper cups
- 3. Put the loose end of each string through the hole in the cups and tie a knot so that the string does not slip back though the cup.
- 4. Hold the cup to your ear and hit the spoon with the pencil
- 5. Repeat step 4 for each of the different types of strings. Record the observations you make about the sound each type of string creates.

Material Used	YARN	PLASTIC STRING	TWIN
Observations			

Rainbow Wavelengths

Supplies: six 10 inch pieces of yarn in the colors, red, orange, yellow, green, blue, and violet, glue

Directions:

- I. Draw a wave to represent each color in the color spectrum
- 2. Put glue over each wave
- 3. Glue down the colored string overtop that represents each color in the light spectrum.

Spectroscope

Supplies: empty paper towel roll, craft knife or scissors, blank/old CD, pencil, small piece of card stock/index card, tape, crayons/markers/paint (optional)

Directions:

1. (optional) If you would like to decorate you spectroscope, use you crayons, markers, or paint to draw and color designs on the outside of the empty paper towel tube.



2. Cut out the rectangle guide and tape it around the paper towel tube about 1 inch up from the bottom.





- 3. With the help of an adult, use a craft knife or scissors to follow the arched line on the guide to slice a thin slit at a 45° angle toward the bottom of the cardboard tube.
- 4. Directly across from the slit, make a small peephole or viewing hole by cutting out the black box on the guide using your craft knife/scissors (with the help of an adult).
- 5. Trace one end of your paper towel roll onto your small cardstock paper/index card. Cut the circle out.
- 6. Cut a straight slit right across the center of your cardboard circle.
- 7. Cut a thin rectangle across the center of your cardboard circle.
- 8. Tape the circle to the top of your spectroscope.
- 9. Insert the CD into your 45° angled slit with the shiny side facing up.
- 10. Take your spectroscope outside and point the top slit up at the sky, but NOT directly at the sun. Look through the peephole. You will see a rainbow inside!
- II. Extension: Try this with other light sources like fluorescent light, neon light, and candle light.



