WAVELENGTH AND COLOR: SCIENCE SCAVENGER HUNT

Introduction:

There are shades of all colors in the world around us. The clothes we wear, the foods we eat, and the great outdoors are filled with a variety of colors. Fill in the colors of the rainbow in the space below to show some of these colors.

Violet	Blue	Green	Yellow	Orange	Red

There are some animals, like the mantis shrimp and the bumblebee, that can see more colors than humans can. Imagine what one of these colors might be like, and describe it in the space below:

Collect Data:

Go outside or look around your classroom and find at least one object of every color of the rainbow (ROYGBV) and draw them in the box below. Be sure to label the colors you saw, or color your picture so that you can remember:

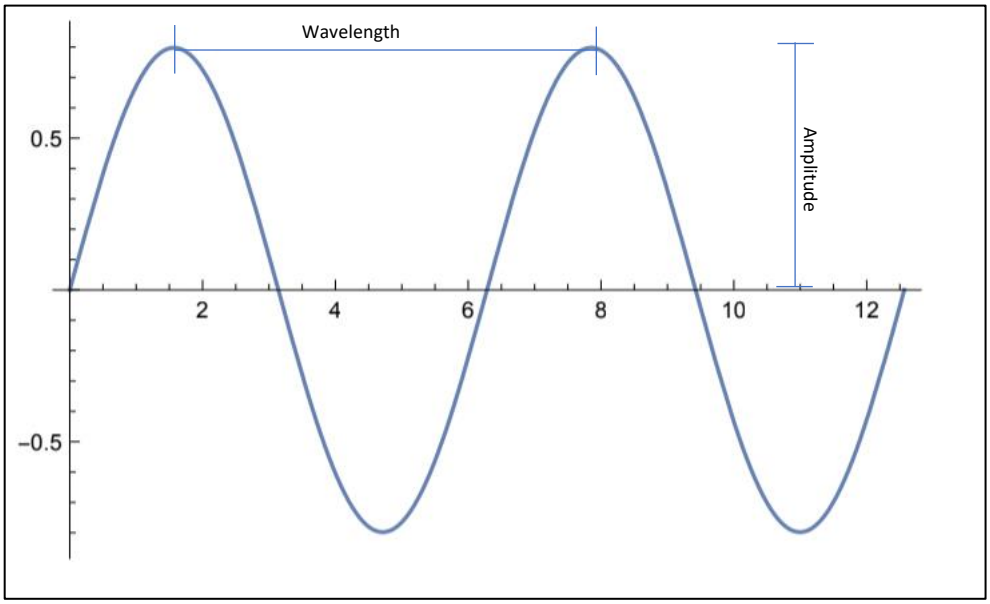
Analyze Data:

1. Look at the drawings that you made of the different objects you found. List the objects and their colors that you drew in order of the colors of the rainbow (ROYGBV)

2. Which item's color was the most *violet*?

3. Which item's color was the most *red*?

Every color that we see is because a different type of light is reflecting off of it. Light is made up of energy that travels in a wave like the one below. Waves have an amplitude and a wavelength. Different wavelengths make different colors, while amplitude determines how bright or dim the light is.



Colors that are more red have a *longer* wavelength, and colors that are more violet have a *shorter* wavelength.

4. Rank the objects and their colors that you found in order from *shortest* wavelength to *longest* wavelength.

5. Which item's color had the shortest wavelength? How do you know?

6. Which item's color had the *longest* wavelength? How do you know?

Explain:

7. What property of a light wave lets us see different colors?

8. If you tried to look at the same objects while the lights were dim or the sun had just barely set, would their colors look different? Why or why not?

9. What was the source of the light that let you see the objects you observed (The sun, or indoor lights)? What color is it?

10. How might that light source be able to produce so many different colors that we can see?

11. Think about the color that you invented in the introduction of this activity. Do you think that it would have a long wavelength, or a short wavelength, or somewhere in between? Why?