WAVE WISDOM

STUDENT WORKBOOK

ACCELERATE

REMINDER:

Check on the water beads: Take out a bead. Is it smooth or bumpy? If it is still bumpy, carefully replace the water with hot water and let the beads sit for longer. Don't lose the beads! If the bead is smooth, go back to Step 4 of the Sneaky Spheres subsection earlier in the activity.

Writing Reversal

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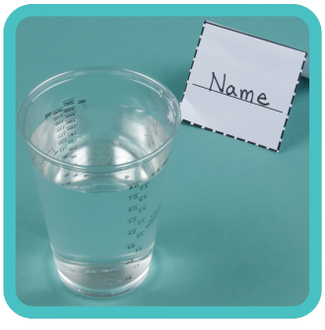
STEP 1 Write your name in the box on the bottom right corner of this page using the black marker.

STEP 2 Cut out the box design along the dotted lines.

STEP 3
Fold the paper with your name along the solid line.

STEP 4 Place the name card on a flat surface, like a table.

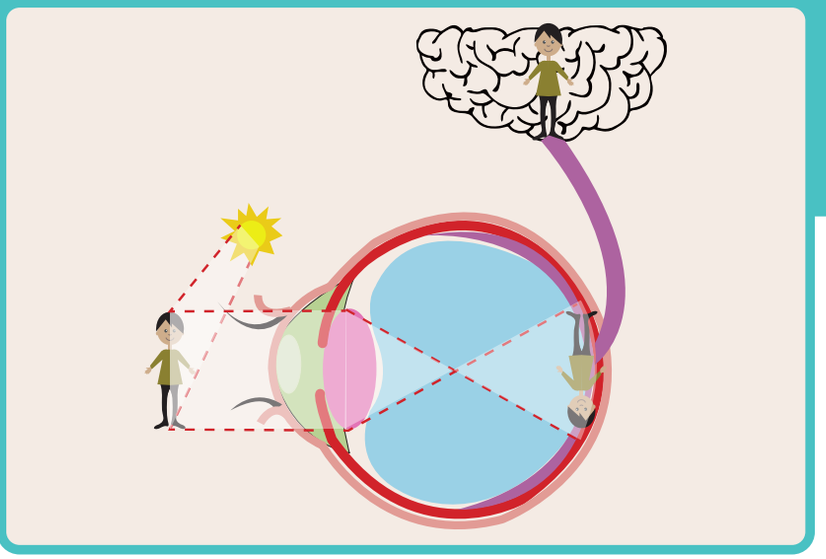


STEP 5
Place a cup filled with water just in front of the name card. Position yourself so that the cup is at your eye level.

STEP 6 Slowly move the cup forward (toward you and away from the card). You should notice something happening when the cup is 4–7 inches in front of the name card.

HOW DO WE SEE?

How can we tell when light is around? Usually, we can see it! Light reflects and scatters off everything in our surroundings, and some of the light bounces to our eyes. The light passes through the eye and hits the optic nerve, which communicates with the brain. The brain turns the signals from light into what we experience as sight or vision.



Another example of how light interacts with objects is a sparkling lake. The bright sparkles on the surface are light reflecting off the water. The water in the lake also absorbs light; we know this because the lake's temperature changes depending on how much sunlight there is. Does light also transmit through the water? Yes, it does! Light passes through the water in the lake, reaching deep below the surface.

Light Transmission

Would it be easier to find something you dropped in the bottom of a lake or the bottom of a pool? Usually, it's easier in the pool. That's because you can see more easily to the bottom of the pool. Light transmits through the two bodies of water in different ways.

THINK ABOUT IT!

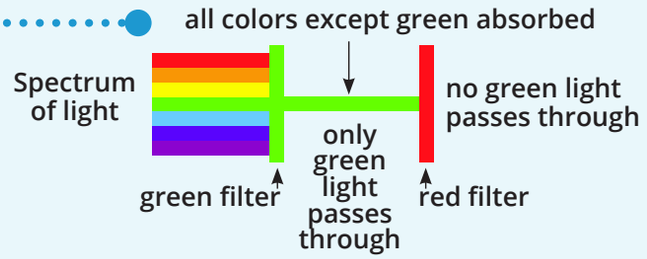
1. Summarize your results. What happened, and how did it compare to your predictions?

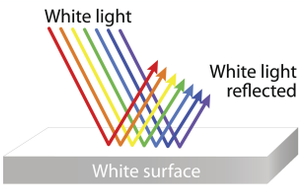
2. Was light being transmitted, reflected, or absorbed when it hit the gummies? Explain.

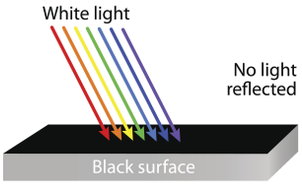
3. How is what happened in this experiment different from what happened with the refraction in Activity 1?

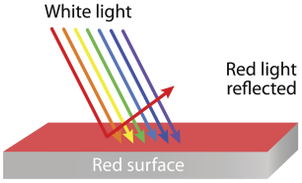
WHAT'S HAPPENING HERE?

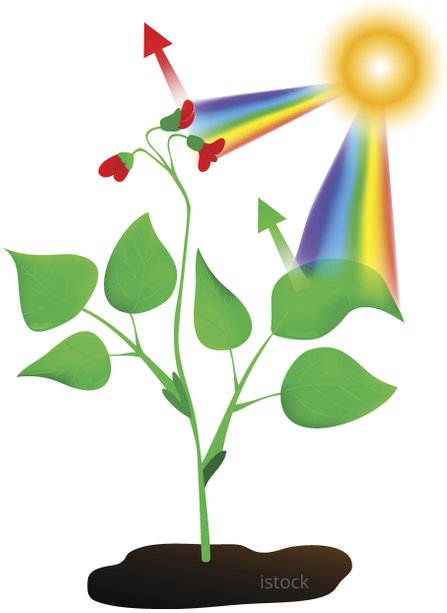
The gummy candies acted like colored filters. They don't change the light, but they change which parts of the light can go through and which are instead absorbed. Think about how we see different colors.











If an object like a gummy candy absorbs all the colors of light except for green, then it reflects and transmits green light and only the green light reaches our eyes. If the gummy candy is red, that means only the red reaches our eyes. If a gummy candy or other object happens to look white, that means a mix of colors is reflecting from the surface or transmitting through the candy.

ACCELERATE

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Kit	SU-WAVWIS
Instructions	IN-WAVWISS
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