Activity: Color Wheel

What You'll Need:

- ❑ Crayons or markers
- ❑ Color Wheel Cut-out (at the end of this description)
- ❑ String, about 3 feet
- ❑ Scissors

Procedure:

Step 1

Color each wedge of the circle with a different rainbow color. Use heavy paper or a paper plate.

Step 2

Cut out the circle, as well as the center holes (you can use a sharp pencil to poke through, too!).

Step 3

Feed the string through the holes and tie the ends together.

Step 4

Pick up the string, one side of the loop in each hand so the circle is in the middle. Wind the string by rotating it, in a “jump-rope”-like motion. The string should be a little loose with the circle pulling it down in the middle.

Step 5

Move your hands out to pull the string tight to get the wheel spinning. When the string is fully unwound, move your hands closer together so it can wind in the other direction If it’s not spinning fast enough, keep winding!

Step 6

As it spins, what happens to the colors? What do you notice?

The Science Behind It:

What did you notice when you spun the wheel? You may have seen the colors seem to disappear! Where did they go?

Let's think about light and color, starting with the sun. The light that comes from the sun is actually made up of all different colors on the **light spectrum.** When light hits a surface, some of the colors are absorbed and some are reflected. We only see the colors that are reflected back. So when light from the sun shines on a banana, the banana absorbs all light except for yellow.

So when you spin the color wheel, the colors didn't go anywhere, of course – they're recombining! The rapid spinning causes colors to "blend" into each other, since our eyes can't keep up with the rapid rate of each individual color on the wheel. It often creates a white (or close to white) color because all the light is being reflected back to our eyes in lots of small flashes.

But what happens if we combine those same colors into one spot on a piece of paper? Why does that turn brown or black? Since the light is not moving, our eyes aren't seeing lots of individual colors – instead our eyes see the result of all the absorbed light coming together and will reflect only the color of light that is reflected from each color you mixed.