



Seeing in the Dark



Light that reflects off of objects around us is imaged onto the retina by the lens. The retina is responsible for detecting the light from these images and then sending signals to the brain along the optic nerve. The brain decodes these images into the information that we know as vision.

Two different cells in the retina respond to light: the **rod** cells and the **cone** cells. These cells were named because of their shape when viewed under a microscope. The **cones** in our retina are sensitive to color. Although, the **rods** cannot detect color they are very sensitive to light at low levels. The **rod** cells are responsible for our night vision.

Materials:

- 10 pieces of paper (such as construction) with different colors
- 10 different colored markers
- You will do this activity with a partner, so, be sure to have 10 more pieces of paper to try the activity again.
- Low light setting (such as a dimmer switch or candle). **Safety:** If using a candle, be sure to keep the candle away from the paper.
- Sheet to write observations of colors

	Color of Paper in Dark	Color of Number in Dark	Color of Paper in Light	Color of Number in Light
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Set-Up:

- Work in groups of two so that each person has a chance to try the activity.
- If you are the person who is testing their ability to see in the dark, do not watch the person preparing.
- The person who is setting up will follow these instructions:
 - Lay out the 10 pieces of paper on a table.
 - Randomly write a number from 1-10 on each piece of paper using different colored markers.



Activity:

When you have set up the activity, bring the person back into the room and adjust the lights to a low setting (or use the candle).

Show the person observing, 1 sheet of paper at a time, have them write the color of the paper and number on the observation sheet.

When all ten sheet of paper have been observed in low light, go through each piece of paper using regular light. How well did you do?
Repeat the activity switching roles.

Discussion:

How many colors were you able to identify in the dark?
How did you compare to each other doing this activity?