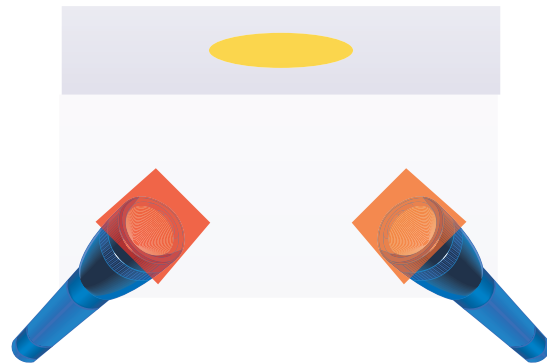
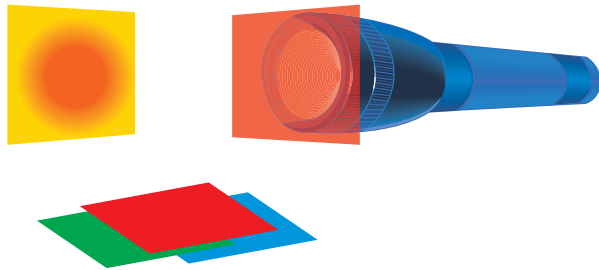


LIGHT and Color



Observing the Transmission, Reflection, and Absorption of Colors

Obtain several sheets of colored cellophane (red, green, blue). Prepare five or six 3-inch squares of colored construction paper. Each square should be a different color. In a very dark room, hold a colored sheet of cellophane in front of a bright light beam. Hold the squares, one at a time, in the bright beam and observe how each looks. Change the color of the cellophane and repeat the observation of the squares. From this experience you will notice that the color you see is a function of the color of the light striking an object as well as the color it reflects.

For another experience, write your name with red and green crayons on a piece of white paper. Make some letters green and some red, then look at your name through the red and green cellophane pieces. What do you see?

Mixing Colors of the Light Spectrum

Prepare three flashlights. Cover each with a colored cellophane (red, green, and blue). Shine the flashlights onto a white ceiling or wall, overlap the colors, and make new colors. When you overlap red and green, what color do you get? What about green and blue? Blue and red? What happens when all three flashlights shine on the same spot?

In the light spectrum there are three primary colors—red, green, and blue. When they combine, they make up the other colors that we see. When blue and red are combined, you get purple (magenta), with red and green you get yellow, and with green and blue you get turquoise (cyan). You might see slight differences, depending on the quality of the colored cellophane that you use.

Overlap the beams of red and green to get yellow, then wave your hand in front of the overlapping beams. Look at the shadows that your hands make. You will see magenta and cyan shadows. Try this with other overlapping colored beams. What color are the shadows? What color are shadows when all three beams overlap? Make a list of the colors that are made when different primary colors are overlapped. Did you discover any patterns?