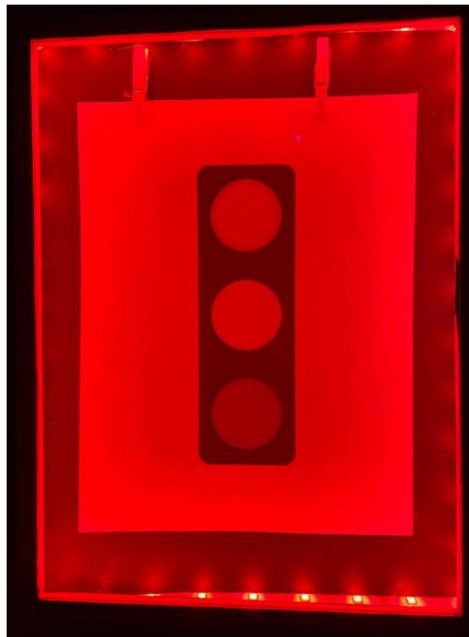


**Examples of useful object/LED color/gel film combinations:**

1. Red LEDs, stoplight image, green gel film:  
Nominal stop light image:



- Red LEDs and stop light image:



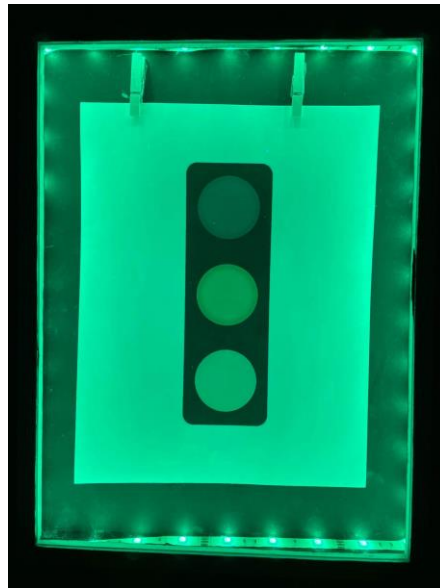
Red LEDs and stop light image with green gel film:



2. Green LEDs, stoplight image, red gel film:  
Nominal stop light image:



Green LEDs and stop light image:



Green LEDs and stop light image with red gel film:



Note, the red gel is so successful in blocking the green LED that the residual light in the room is the only color imaged in this image.

3. Monet artwork, white light LEDs, RG&B gel films (CYMBK maybe?)  
White LEDs and Monet artwork:



White LEDs, Monet artwork, and red film:



Red LEDs, Monet artwork:



White LEDs, Monet artwork, and blue film:



Blue LEDs, Monet artwork:



White LEDs, Monet artwork, and green film:



Green LEDs, Monet artwork:

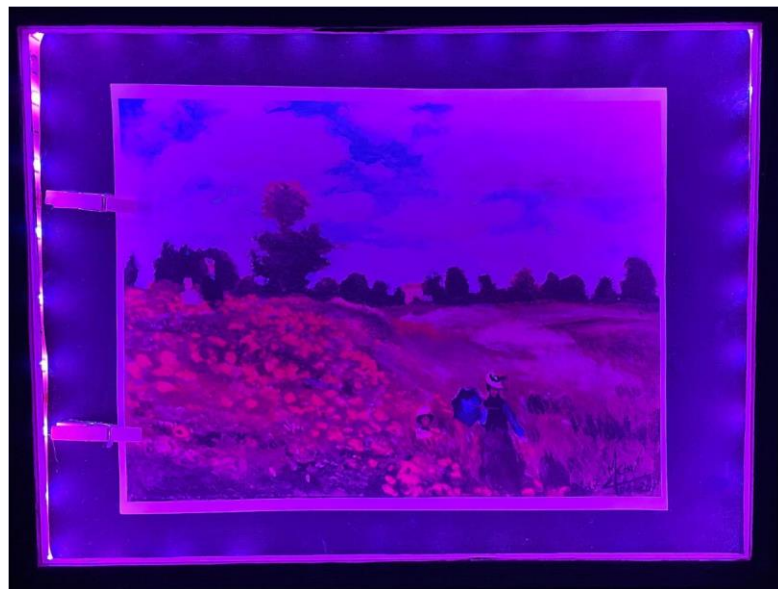


At this point, we can talk about color Blindness and the transition between seeing only one color and seeing two of the three we can see. The color blindness is in quotes as the LEDs we have don't specifically follow the sensitivity wavelengths of our eyes.

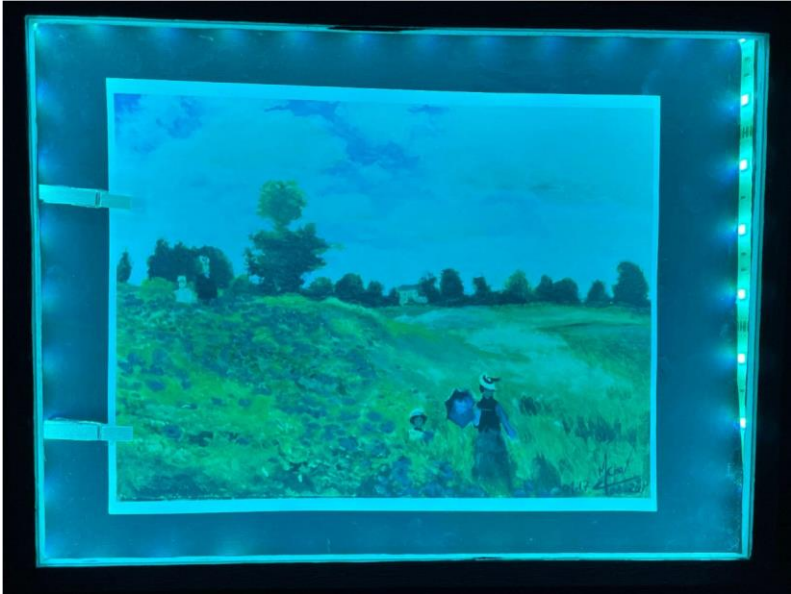
Red and Green LEDs, Monet artwork, Blue colorblind:



Red and Blue LEDs, Monet artwork, "Green colorblind":



Blue and Green LEDs, Monet artwork, "Red colorblind":



## Example Demonstration with Colorblind plate:

Once color filtering and adding are explained, the colorblind plates, that clearly show when a color is missing, is a good way to get a class engaged in the activity. Cycle through the different two combination LED options and have a class guess what kind of color blindness the test plate is meant to test for.

### 1. Ishihara test plate 21

Plate 21, White LED, Nominal:



Plate 21, White LED, Red filter:



Plate 21, White LED, Blue filter:

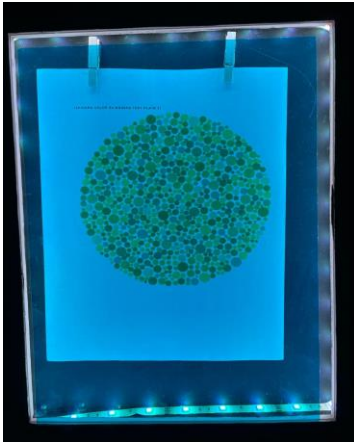


Plate 21, White LED, Green filter:

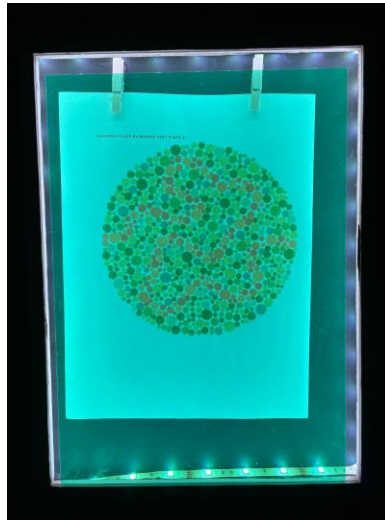


Plate 21, Red and Green LED, "Blue colorblind":

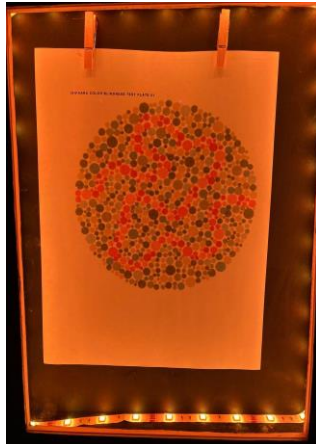


Plate 21, Green and Blue LED, "Red colorblind":

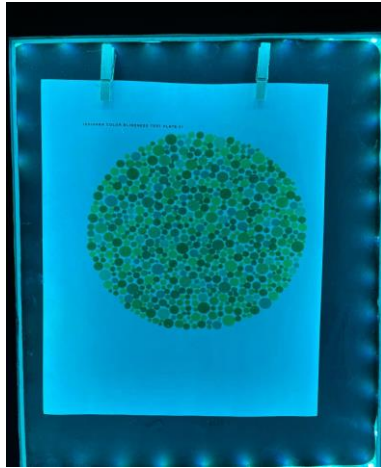
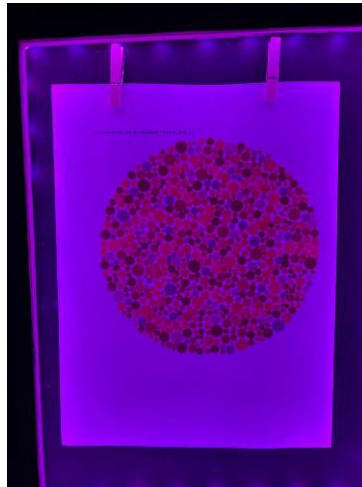


Plate 21, Red and Blue LED, "Green colorblind":

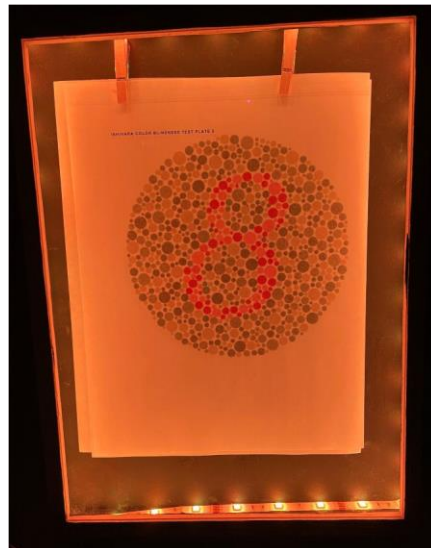


## 2. Ishihara test plate 2

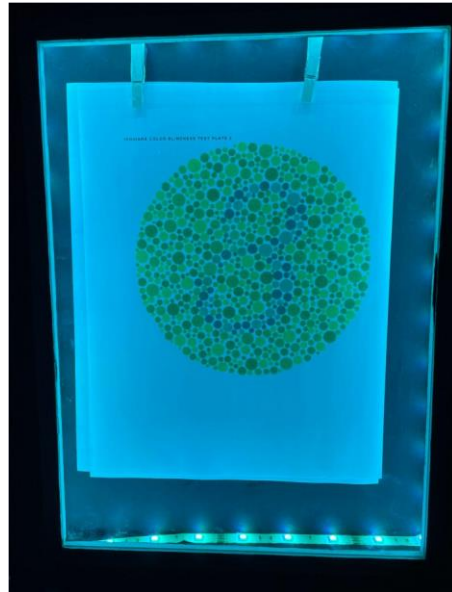
Nominal plate 2:



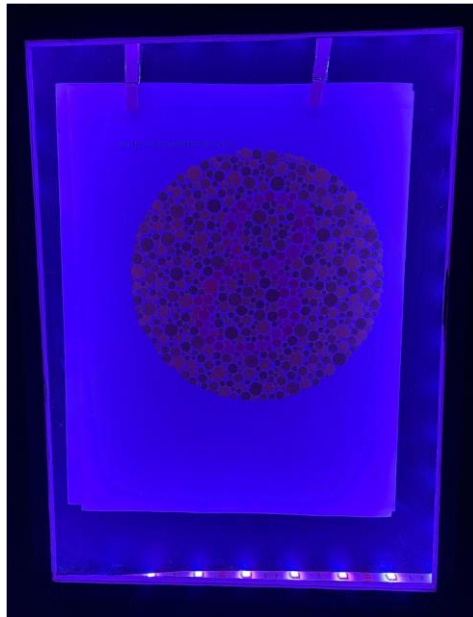
RG LED, plate 2, "Blue colorblind":



Green and Blue LED, plate 2, "Red colorblind":



Red and Blue LED, plate 2, "Green colorblind":

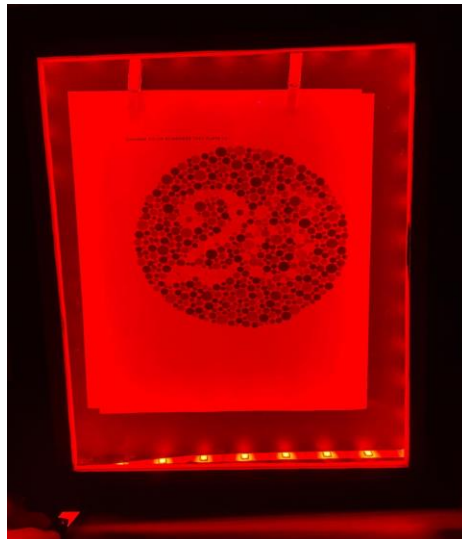


### 3. Ishihara test plate 16

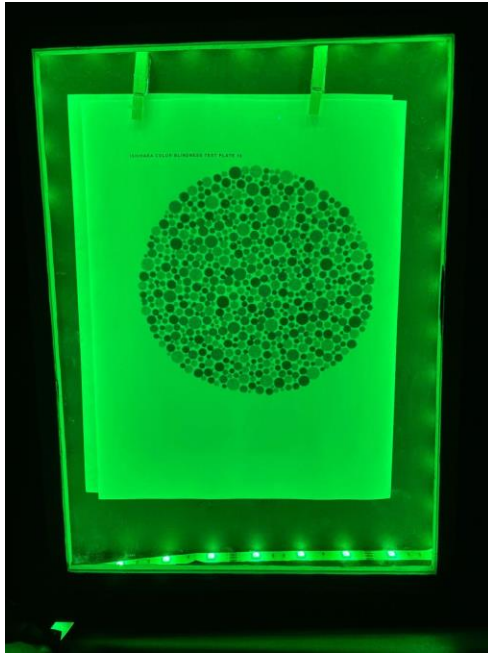
Nominal plate 16:



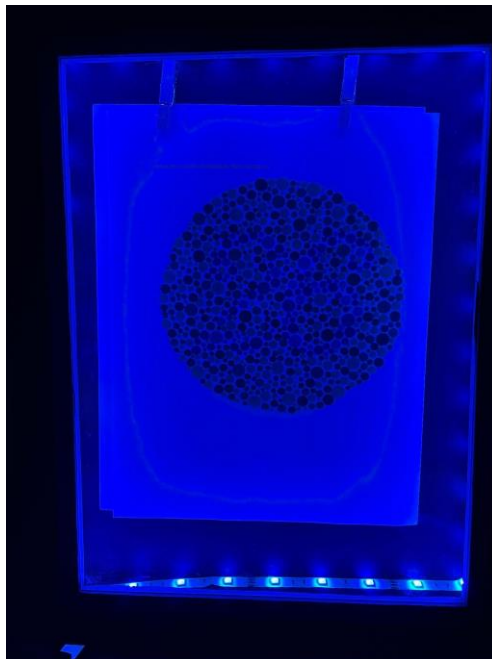
Red LED, plate 16:



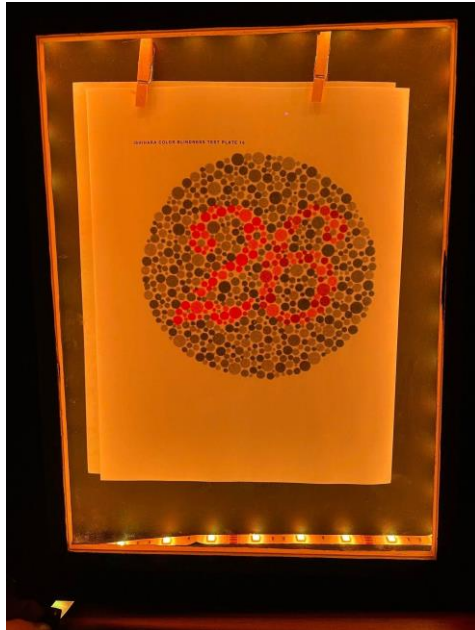
Green LED, plate 16:



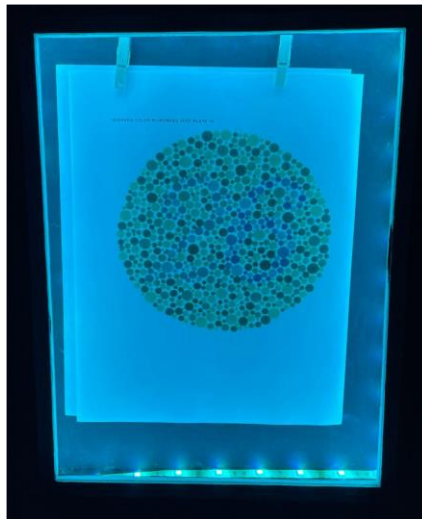
Blue LED, plate 16:



Red and Green LED, plate 16, "Blue colorblind":



Green and Blue LED, plate 16, "Red colorblind":



Red Blue LED, plate 16, "Green colorblind":

