Nano at Home

Color Analysis

Author: Adapted from this Twitter thread

Description: For some color fun, try this color analysis experiment.

What you will need:

- 4 clear cups of same size
- Phone or tablet
- Colored solution (tea, food coloring in water, soft drink)

Instructions:

1.) Download iOS “Pixel Picker” or Android “Color Picker” on your device.
2.) Create four standard set solutions of your colored liquid with known concentrations.

Each of the four cups contains a different concentration of the food dye- called a "standard"! Image by Gabrial Golden.

3.) Use the app to take an image of your solution. Record the RGB data given.

Make sure to take the photo in the same spot for each cup. Image by Gabrial Golden.

Back Khaki (HTML/CSS) (Khaki)

RGB 195, 187, 162
CMYK 0, 4, 16, 23
HSB 45, 16, 76
HEX #C3BBA2
Similar Pantone colors

Back Bottle green

RGB 0, 102, 73
CMYK 100, 0, 28, 59
HSB 162, 100, 40
HEX #006649
Similar Pantone colors

Back Sacramento State green

RGB 0, 79, 63
CMYK 100, 0, 20, 69
HSB 167, 100, 30
HEX #004F3F
Similar Pantone colors

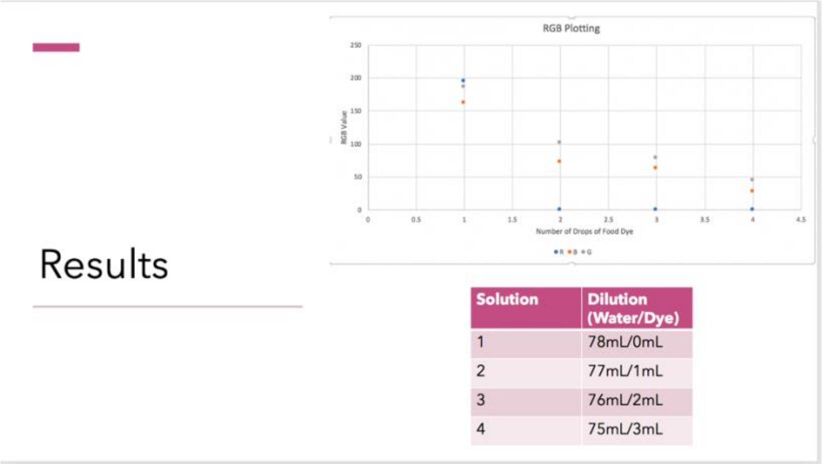
Back Dark green

RGB 0, 45, 28
CMYK 100, 0, 37, 82
HSB 157, 100, 17
HEX #002D1C
Similar Pantone colors

App: Color Picker

Using the app called "Color Picker", record the RGB values of each cup color. Image by Gabrial Golden.

4.) Using this data, create a plot between the known concentrations of solution with RGB values.



Results

Solution	Dilution (Water/Dye)
1	78mL/0mL
2	77mL/1mL
3	76mL/2mL
4	75mL/3mL

Finally, plot your values of each RGB color component versus your solution concentrations! See any trends?

If you want to try more:

5.) Convert RGB values to Absorbance under each color channel.
6.) Create a plot between known concentrations of solution and the absorbance values for each color channel.