

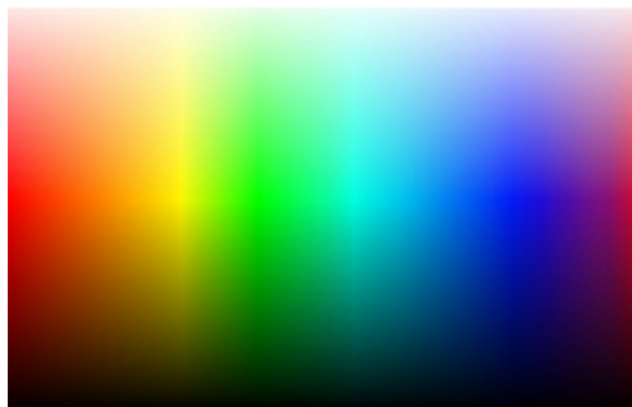
Visible Light

Objectives

Identify relative wavelengths & frequencies in the visible spectrum.

Identify the primary colors of light & the colors formed when these are combined.

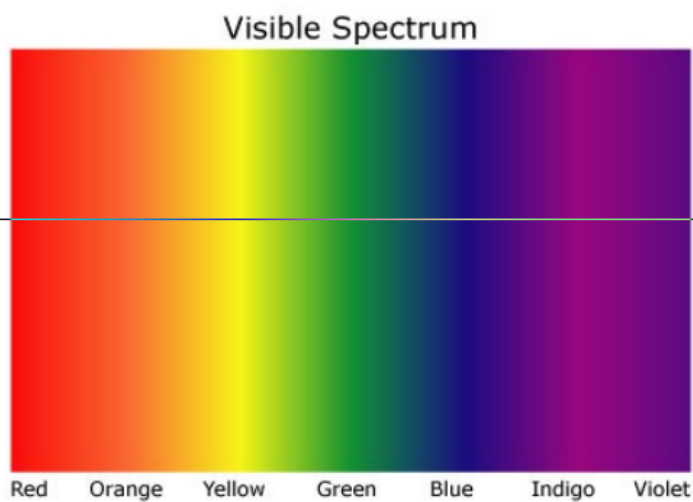
Differentiate between color by addition and subtraction.



Color Spectrum

ROYGBIV

700 – 400 nm (1 nm = 10^{-9} m)



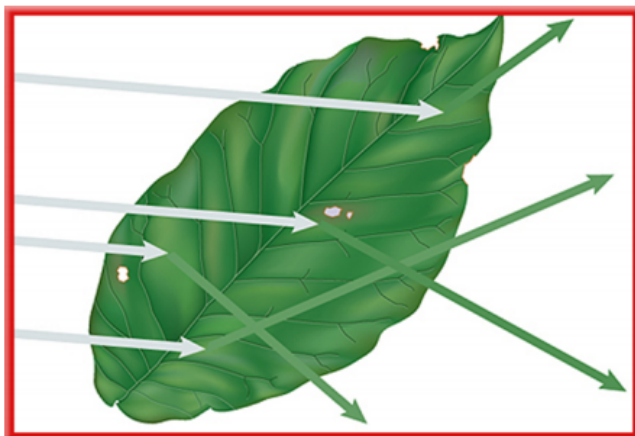
(700 nm)

(400 nm)

Color

The **color** we see is dependent on which frequencies strike, absorb and reflect.

This image below shows white light striking a green leaf. Only the green light is reflected to your eyes.



White - Black

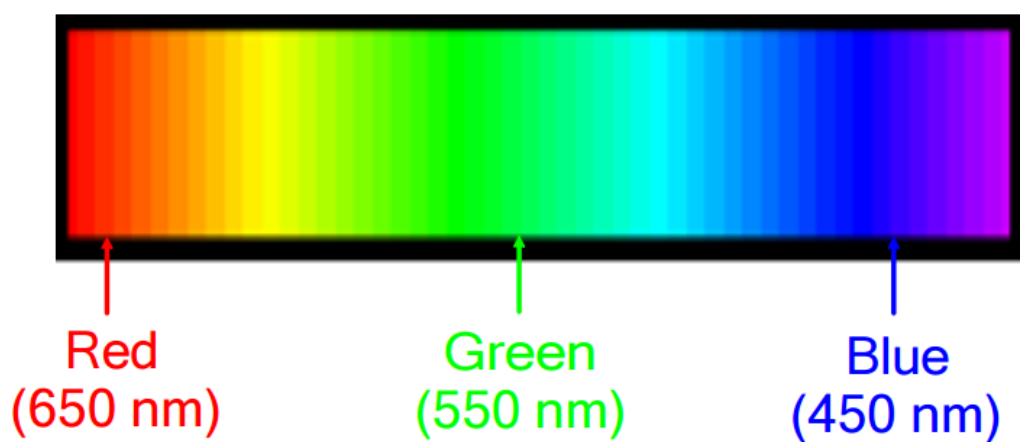
White light is a blend of all colors of visible light.

Appears to be white because they reflect all colors of visible light.

Black is the absence of reflected light – objects absorbs all colors.



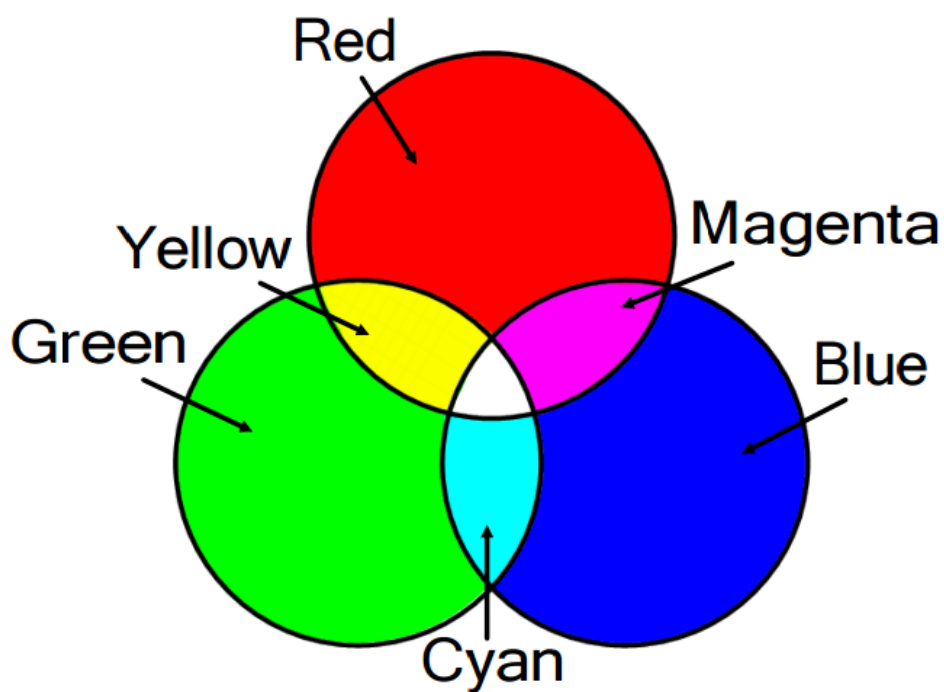
Primary Colors of Light



Mixing the primary colors of light in different proportions can produce the vast array of colors you see on television and computer screens.

Color by Addition

Mixing colored light is an additive process.



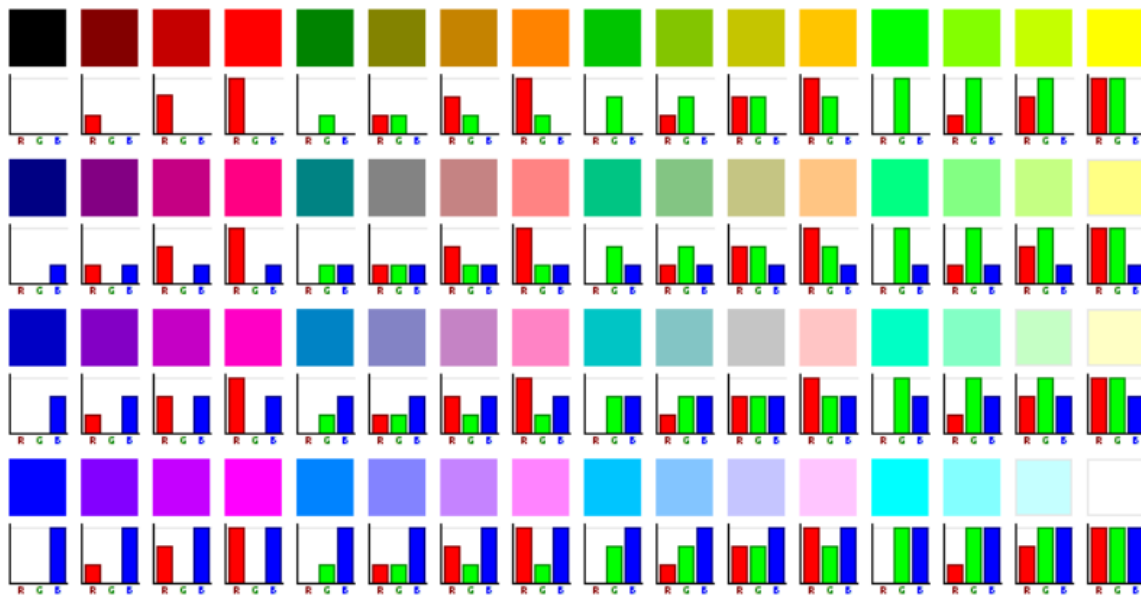
Color Addition
Color Creator

Mixing Color



MAGENTA

Color by Addition

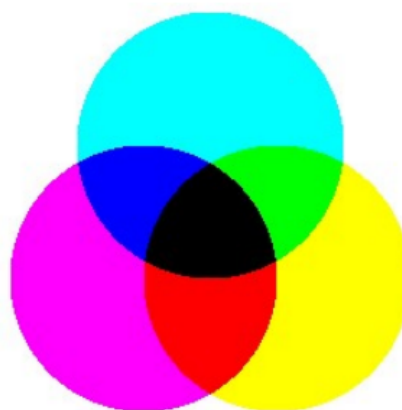


Primary Paint Pigments

YELLOW

CYAN

MAGENTA



A pigment is a colored material that is used to change the color of other substances.

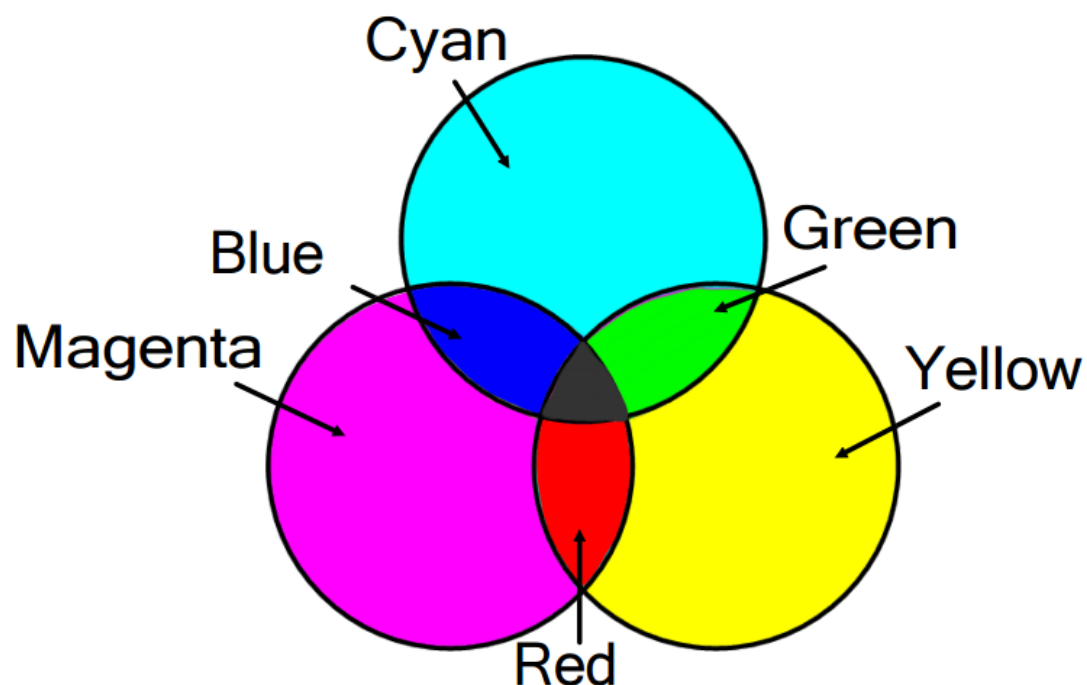
The color of a pigment results from the different frequencies of light that the pigment reflects.

Color Subtraction



Color by Subtraction

Mixing colored pigments is a subtractive process.



Color by Subtraction



Print Colors

