

Visible Light

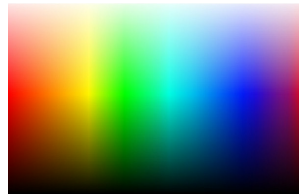
Visible Light

Objectives

Identify relative wavelengths & frequencies in the visible spectrum.

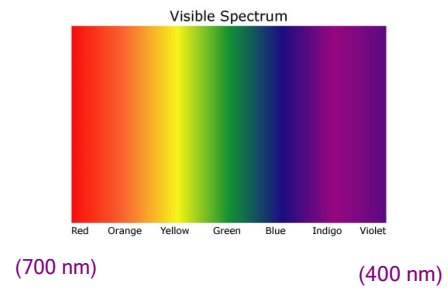
Identify the primary colors of light & the colors formed when these are combined.

Differentiate between color by addition and subtraction.



Color Spectrum

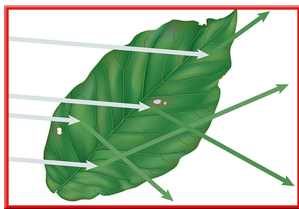
ROYGBIV 700 – 400 nm (1 nm = 10^{-9} m)



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

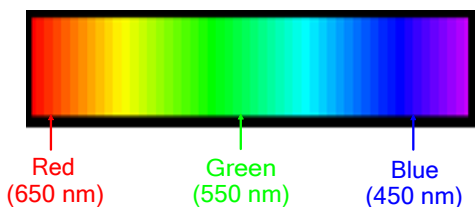
White light is a blend of all colors of visible light.

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

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



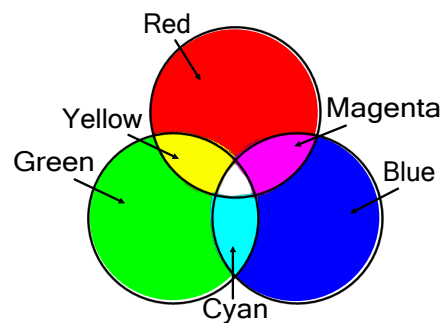
Primary Colors of Light



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

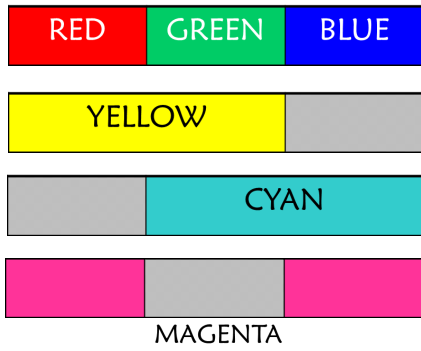
Mixing colored light is an additive process.



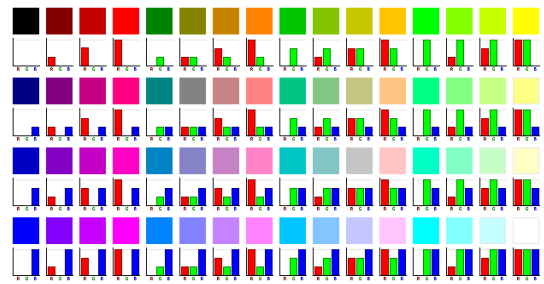
Color Addition
Color Creator

Visible Light

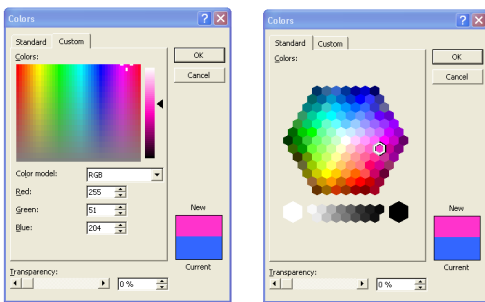
Mixing Color



Color by Addition

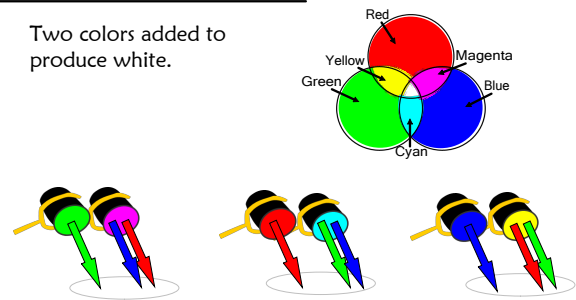


Color by Addition



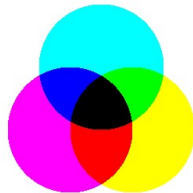
Complementary Colors

Two colors added to produce white.



Primary Paint Pigments

YELLOW
CYAN
MAGENTA



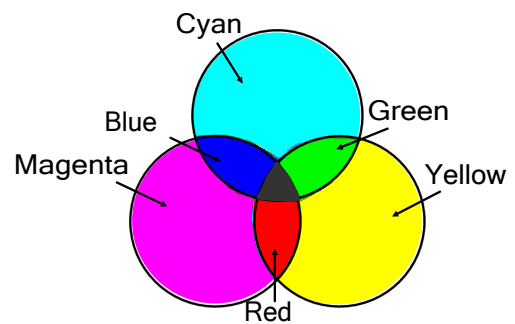
A pigment is a colored material that is used to change the color of other substances.

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.



Visible Light

Color by Subtraction



Print Colors



Assignments . . .



- Chromebook Lab: RGB Color Addition
- Chapter 21 Homework #1 - 6



Attachments



Color Creator



Color Addition



Color Subtraction