

# Color Theory

Overview

# Color Systems

- Available color systems are dependent on the medium with which a designer is working. When painting, an artist has a variety of paints to choose from, and mixed colors are achieved through the subtractive color method. When a designer is utilizing the computer to generate digital media, colors are achieved with the additive color method.



## Subtractive Color.

- When we mix colors using paint, or through the printing process, we are using the subtractive color method. Subtractive color mixing means that one begins with white and ends with black; as one adds color, the result gets darker and tends to black.
- The CMYK color system is the color system used for printing.
- Those colors used in painting—an example of the subtractive color method.

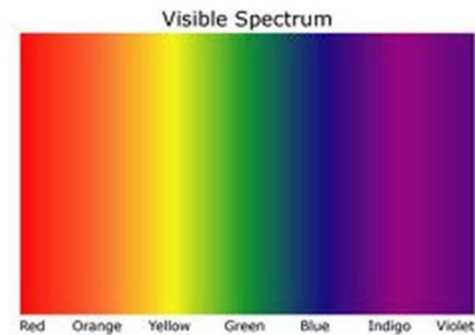
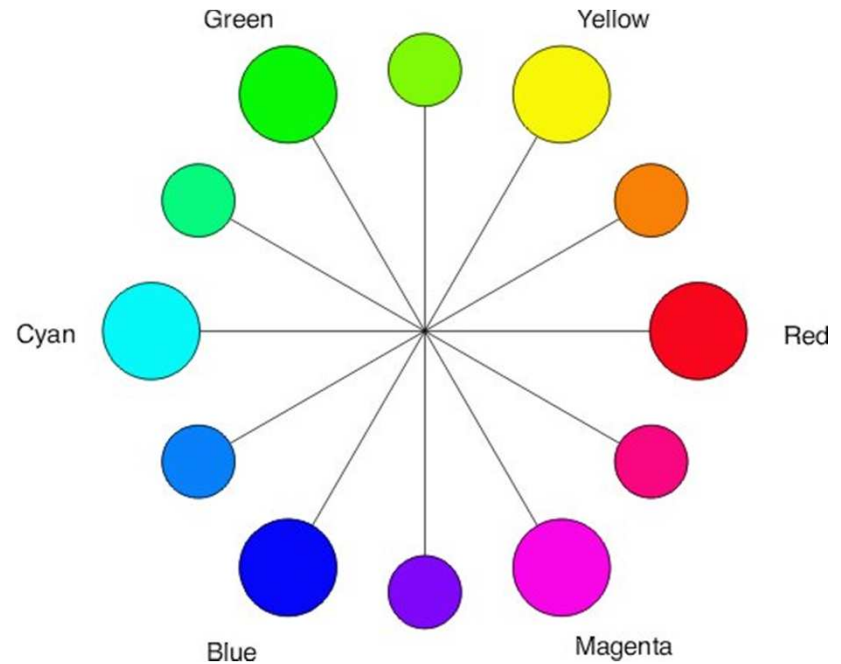


# Additive Color.

- If we are working on a computer, the colors we see on the screen are created with light using the additive color method. Additive color mixing begins with black and ends with white; as more color is added, the result is lighter and tends to white.
- The RGB colors are light primaries and colors are created with light. Percentages of red, green, & blue light are used to generate color on a computer screen.

# Color vs. Hue

- The word **color** is the general term which applies to the whole subject - red, orange, yellow, green, blue, violet, black and white and all possible combinations thereof. **Hue** is the correct word to use to refer to just the pure spectrum colors





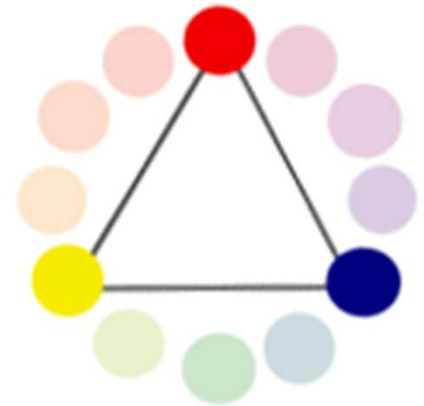
## Color Wheel

- A color wheel (also referred to as a color circle) is a visual representation of colors arranged according to their chromatic relationship. Begin a color wheel by positioning primary hues equidistant from one another, then create a bridge between primaries using secondary and tertiary colors.

# Primary Colors

Red, yellow and blue

- In traditional color theory, these are the 3 pigment colors that can not be mixed or formed by any combination of other colors. All other colors are derived from these 3 hues
- Colors at their basic essence; those colors that cannot be created by mixing others.



# Secondary Colors

Green, orange and purple

- These are the colors formed by mixing the primary colors.



# Intermediate or Tertiary Colors

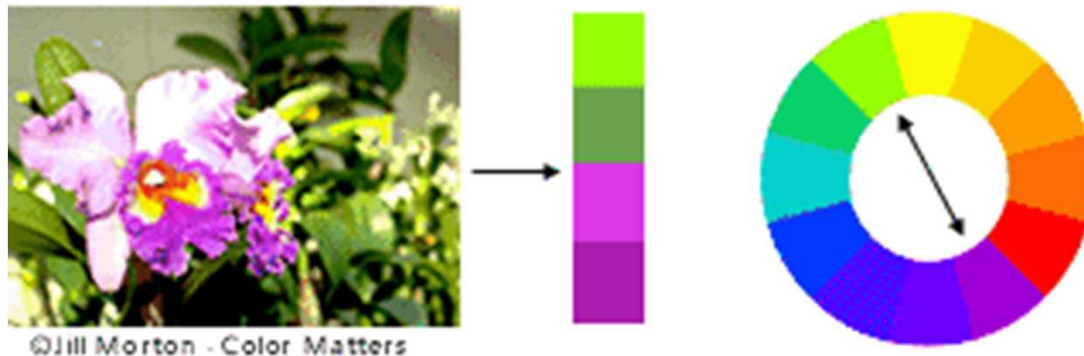
Yellow-orange, red-orange, red-purple,  
blue-purple, blue-green  
and yellow-green.

- These are the colors formed by mixing a primary and a secondary color. That's why the hue is a two word name, such as blue-green, red-violet, and yellow-orange.



# A color scheme based on **Complementary Colors**

- Are any two colors which are directly opposite each other, such as red and green and red-purple and yellow-green. In the illustration below, there are several variations of yellow-green in the leaves and several variations of red-purple in the orchid.



# A color scheme based on **Analogous Colors**

- Are any three colors which are side by side on a 12 part color wheel, such as yellow-green, yellow, and yellow-orange. Usually one of the three colors predominates.

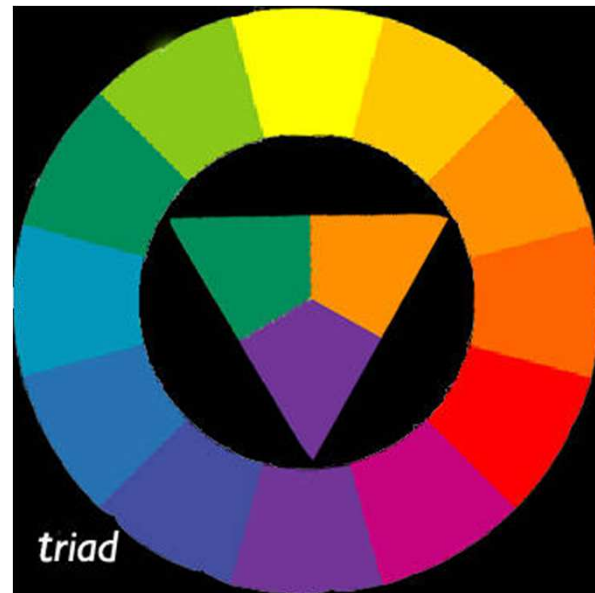


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# A color scheme based on **Triadic Colors**

- Are formed by three equally spaced colors on the wheel. An example is violet, orange and - spaced with two colors between.



# A color scheme based on **Monochromatic Colors**

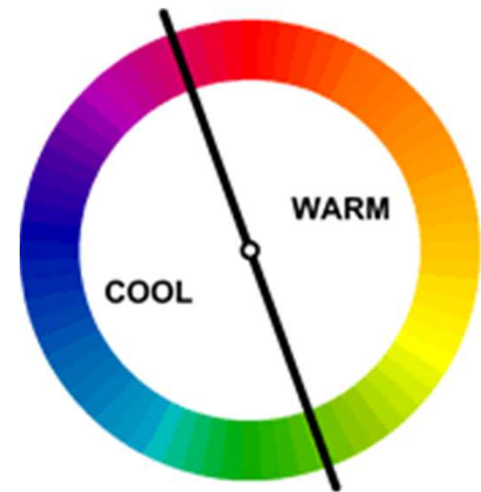
- Uses variations in lightness and saturation of a single color. This scheme looks clean and elegant. Monochromatic colors go well together, producing a soothing effect. The monochromatic scheme is very easy on the eyes, especially with blue or green hues. You can use it to establish an overall mood.



# Warm and Cool Colors

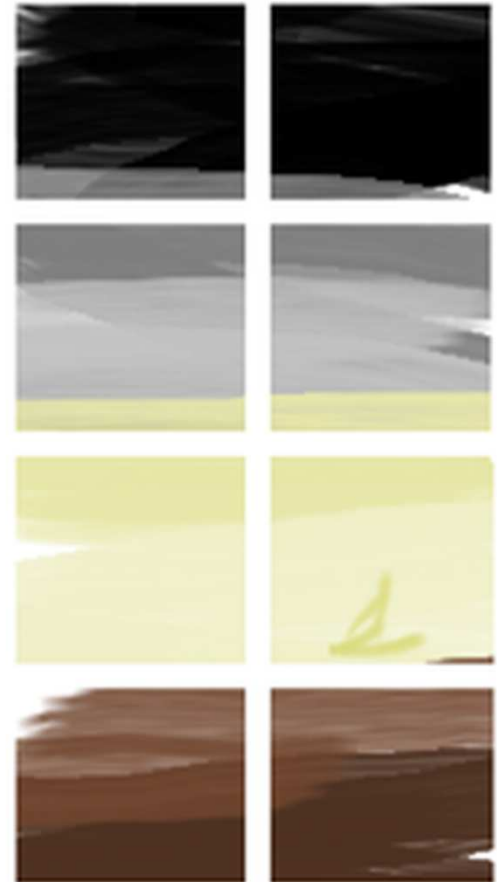
- **Warm colors** are vivid and energetic, and tend to advance in space.
- **Cool colors** give an impression of calm, and create a soothing impression.
- White, black and gray are considered to be neutral.

The color circle can be divided into warm and cool colors.



# Neutral Colors

- Are black, white, silver, gray, and brown. They make good backgrounds, serve to unify diverse color palettes, and also often stand alone as the only or primary focus of a design. Neutral colors can be cool or warm but are more subtle than blues and reds.

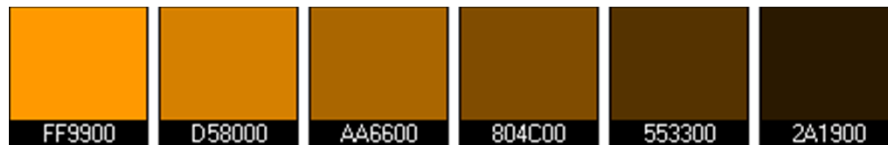


# Tints, Shades, and Tones

These terms are often used incorrectly, although they describe fairly simple color concepts. If a color is made lighter by adding white, the result is called a **tint**. If black is added, the darker version is called a **shade**. And if gray is added, the result is a different **tone**.



**Tints** - adding white to a pure hue:



**Shades** - adding black to a pure hue:



**Tones** - adding gray to a pure hue:

# Value

- Is defined as the relative lightness or darkness of a color. It is an important tool for the designer/artist, in the way that it defines form and creates spatial illusions

Simple Value Scale

