

I. Color Basics

Color is our perception of the wavelength of reflected light—the ROY G BIV you probably remember from elementary school. Hue is a more specific way of describing a given color and takes into account the subtle variations among all the different “reds” out there. Hue is a result of:

Chroma—purity of a hue in relation to grey

Luminance—the amount of light reflected by a hue; its brightness

Saturation—the relative amount of pure color in a hue

Intensity—the brightness or dullness of a color. Adding white creates a tint, adding black creates a shade.

There are two primary color systems—that used by **light** (called **additive**) and that used by **pigments** (called **subtractive**). In additive color systems, such as natural light and computer monitors, white represents the union of all colors in their purest form. In subtractive color systems, such as those used by painters and printers, white represents the absence of pigment, while black is the result of adding all colors together.

II. Color Relationships

Color relationships are often described according to a color wheel. Google color wheel examples of each of the color terms below.

Primary Colors are red, yellow, and blue. These are colors that cannot be made in combination with other colors in a subtractive color system.

Secondary Colors are colors that result from mixing together two primary colors, such as combining yellow and red to make orange.

Tertiary Colors result from mixing a primary and a secondary color.

Hues that are visually related are referred to as **analogous colors**.

They are next to each other on the color wheel.

Such colors create a sense of harmony, but they can also make an image or design rather dull.

Hues that are opposite each other on the color wheel are known as **complementary colors**.

These colors are strongly contrasting and create a sense of tension and excitement.

When they are placed immediately next to each other, they create a visual effect of vibration and can cause the eye to perceive an afterimage.

This means they can also be very unpleasant if overused.

Colors just off from being directly opposite on the color wheel are called **split complements**.

These colors create a lower-key contrast, which is often easier to control in a design.

III. Color Temperature

Colors in the red-yellow range are known as **warm** colors. They tend to be visually assertive and to “advance,” or seem brighter and larger than they actually are. Psychologically, these hues are associated with confidence, excitement, and power.

Colors in the green to purple range are **cool** colors, which tend to recede visually. These colors tend to be seen as calm, soothing, and passive.

IV. Color Palettes

In order to create pleasing color palettes in a design, it is necessary to control and balance the relationships among different colors.

Some possible palettes are:

Monochromatic—using only shades or tints of one hue.

Complementary—using shades and tints of complementary hues.

Split complementary—using a hue and the two hues equidistant from its direct complement.

Double complementary—using two hues and their direct complements.

Analogous—using only closely related hues.

Triadic—using colors equally spaced on the color wheel.

V. Color Dominance

Color palettes usually involve a **dominant color**, one or more **sub-dominant hues**, and an **accent color**.

The **dominant color** is the color of the largest proportional area—often the background color.

Sub-dominant colors are the colors with proportionately less area in the composition.

They are often analogous colors or variants in tint, shade, or tone of the dominant hue.

Accent colors are hues that contrast in color or intensity with the dominant color that are used sparingly in the composition.

VI. Color Value

The overall **value (or lightness or darkness)** and **level of contrast** in a color palette are very important.

Value-dominant palettes are ones in which the lightness or darkness of constitutive colors is most striking. A light value palette is comprised of mostly tints, a medium value one is a balance of pure hue, shades, and tints, while a dark value palette exhibits mostly shades.

Contrast-dominant palettes are ones that rely on the relative contrast between hues for their effect. Low contrast palettes rely on a limited range of brightness values and is one way to control the sense of clashing or vibration from complementary color schemes. On the other hand, too little contrast between figure and ground in an image or between background and text in a document results in a design that is difficult to read, particularly for people with vision impairments.

High contrast palettes include both very bright (high-luminosity) and very dark (low-luminosity) colors.

Special care should be taken to ensure enough contrast with red/green color combinations because of the frequency of color blindness.

It is often helpful to preview your work in grayscale to get a sense of the overall value and the level of contrast between figure and ground.

VII. Psychosocial and Sociocultural Aspects of Color

Swiss psychologist Dr. Max Luescher researched color's psychological effects for years and even developed a personality test based on responses to color. He found the following associations and held them to be cross-cultural:

- Blue—dignified
- Red—assertive
- Black—surrender
- Gray—barrier
- Green—persistent
- Yellow—optimistic
- Brown—passive
- Violet—meditative

Despite Dr. Luescher's work, most experts people believe that the perception of a color's meaning varies considerably among cultures. For example, black symbolizes death or mourning in most Western cultures, while white serves the same purpose in many Asian traditions. It is important to consider the culturally specific associations that different colors might have, especially when designing for the Web—an inherently international medium.

Country	Red	Blue	Green	Yellow	White
United States	Danger	Masculinity	Safety	Cowardice	Purity
France	Aristocracy	Freedom/Peace	Criminality	Temporary	Neutrality
Egypt	Death	Virtue/Faith	Fertility/Strength	Prosperity	Joy
India	Life/Creativity	Divinity	Fertility	Success	Death/Purity
Japan	Anger/Danger	Villainy	Future/Youth	Grace/ Nobility	Death

Color Analysis Assignment

OUTLINE: Paste two screen grabs of two different website homepages with very different color palettes into an InDesign Document. Give a detailed analysis of how each site addresses the seven aspects of color outlines above (7 sections for each image, 14 sections total).

WRITE-UP: Write a paragraph identifying each palette in terms of color theory and analyzing how it functions to set the mood, to attract attention, to create contrast, and to mobilize certain cultural associations with color. Is it a value-dominant or contrast-dominant palette? Utilize the vocabulary used in this handout.