Color

Color is used in design to attract attention, group elements, indicate meaning, and enhance aesthetics.

Color can make designs more visually interesting and aesthetic, and can reinforce the organization and meaning of elements in a design. If applied improperly, colors can seriously harm the form and function of a design. The following guidelines address common issues regarding the use of color.[1]

Number of Colors
Use color conservatively. Limit the palette to what the eye can process at one glance (about five colors depending on the complexity of the design). Do not use color as the only means to impart information since a significant portion of the population has limited color vision.

Color Combinations
Achieve aesthetic color combinations by using adjacent colors on the color wheel (analogous), opposing colors on the color wheel (complementary), colors at the corners of a symmetrical polygon circumscribed in the color wheel (triadic and quadratic), or color combinations found in nature. Use warmer colors for foreground elements, and cooler colors for background elements. Light gray is a safe color to use for grouping elements without competing with other colors.
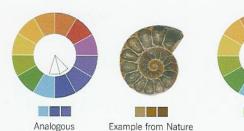
Saturation
Use saturated colors (pure hues) when attracting attention is the priority. Use desaturated colors when performance and efficiency are the priority. Generally, desaturated, bright colors are perceived as friendly and professional; desaturated, dark colors are perceived as serious and professional; and saturated colors are perceived as more exciting and dynamic. Exercise caution when combining saturated colors, as they can visually interfere with one another and increase eye fatigue.
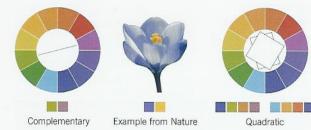
Symbolism
There is no substantive evidence supporting general effects of color on emotion or mood. Similarly, there is no universal symbolism for different colors—different cultures attach different meanings to colors. Therefore, verify the meaning of colors and color combinations for a particular target audience prior to use.[2]

See also Expectation Effect, Highlighting, Interference Effects, Similarity, and Uniform Connectedness.
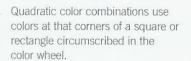
[1] A nice treatment of color theory is *Interaction of Color* by Josef Albers, Yale University Press, 1963. For a more applied treatment, see *The Art of Color: The Subjective Experience and Objective Rationale of Color* by Johannes Itten, John Wiley & Sons, 1997; and *Human-Computer Interaction* by Jenny Preece, et al., Addison Wesley, 1994.

[2] It is reasonable to assume that dark colors will make people sleepy, light colors will make people lively, and irritating colors will make people irritated. Otherwise, the only observable influence of color on behavior is its ability to lead people to repaint walls unnecessarily. For those determined to try to calm drunks and win football games through the application of color, see *The Power of Color* by Morton Walker, Avery Publishing, 1991.

Analogous   **Example from Nature**

Analogous color combinations use colors that are next to each other on the color wheel.

Triadic   **Example from Nature**

Triadic color combinations use colors at the corners of an equilateral triangle circumscribed in the color wheel.

Complementary   **Example from Nature**

Complementary color combinations use two colors that are directly across from each other on the color wheel.

Quadratic   **Example from Nature**

Quadratic color combinations use colors at that corners of a square or rectangle circumscribed in the color wheel.

warm
cool

Hues from yellow to red-violet on the color wheel are warm. Hues from violet to green-yellow are cool.

Saturation refers to the amount of gray in a hue. As saturation increases, the amount of gray decreases. Brightness refers to the amount of white in a hue. As brightness increases, the amount of white increases.

Brightness

Saturation