

Contrast Guidelines

A guide to keeping colors accessible



General Rules:

1. Avoid the following combinations: Red and Green, Blue and Yellow, and Purple and Orange. Using any of these pairings (or similar shades) can create accessibility issues for people with color blindness.
2. The contrast ratio needs to be 7:1 to pass all WCAG standards.
 - a. A ratio of 1:1 would be white on white while a ratio of 21:1 would be white on black.

Choosing Colors:

1. Generally, the best contrasts exist between colors on opposite sides of the color wheel (see Figure 1). However, this creates issues with color blindness, so it is best to start at opposites and adjust shades from there.
2. This does not mean colors are chosen based solely on contrast. Aesthetics are important too.
 - a. Below is an example of a passing ratio, but maybe not the most pleasing combination of colors.

The five boxing wizards jump quickly.

3. While aesthetics can add flair and personality, avoid these choices:
 - a. **Using black as a background.** A black background makes it easy to select contrasting text, but it also creates issues when switching from a black background to a lighter one in the same presentation.
 - b. **Using Yellow or Red for text color:**
 - i. Yellow text can contrast well with darker backgrounds, but it is no fun to read and cannot be paired with blue as it causes issues with color blindness.
 - ii. Red text is hard to contrast as red on black has a ratio of only 5.25:1.

Contrast on the Color Wheel

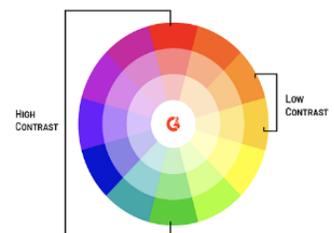


Figure 1

Checking Contrast:

Once the colors have been chosen, there are many ways to check the contrast ratio.

1. There are several extensions that can be added to Google Chrome for working with websites or within the Google Suite. WCAG Luminosity Contrast Ratio Analyzer is the recommended extension.
 - a. This will allow the user to select colors on the screen to find the best contrast.
2. For work done outside of Google Chrome, WebAIM (Web Accessibility in Mind) has a contrast checker on their resource page.
 - a. The user can select colors to see the ratio for each combination. Then the user can adjust the colors to reach the 7:1 ratio.

Questions:

If there are further questions about color contrast, please see the accessibility department in the Center for Teaching, Learning, and Design.



METROPOLITAN STATE UNIVERSITYSM
OF DENVER
Center for Teaching, Learning and Design