

Coding Web Safe Colors

Besides artwork or photos, there are other opportunities to create colors directly on a web page. Backgrounds for navigational frames, buttons, and body text, and the colors used for the fonts used in links and body text, are common places to designate color in the code for a web page.

Colors in HTML are referred to by a 6-digit number in a format called “hexidecimal” or “hex.” If you’re designing for the web, you should know how to refer to colors by their hex designations.

Hexidecimal vs. RGB

You might see some code that looks like this: `color="#0000FF"` (which happens to be primary blue). In hex format, which always begins with a # sign when coding for the web, each pair of numbers roughly corresponds to the “R” and “G” and “B” of the RGB (red-green-blue) color model. So RGB 255-255-255, which is white, is expressed in hex as “#FFFFFF” while RGB 0-0-0, which is black, is expressed in hex as “#000000.” (Imagine the hex is hyphenated as FF-FF-FF or 00-00-00 and you’ll get the RGB correlation.)

Base 16 System

Notice the “F.” Why the letters? Hexidecimal format is a “base 16” numbering system. In our culture we use “base 10.” In base 10, after you count 1, 2, 3, 4, 5, 6, 7, 8, 9, you have to expand to 2 digits to express the next number in the sequence, which is 10. But to continue to use only one character, in base 16 you keep going with A, B, C, D, E, F. The use of base 16 dates to earlier computer technology, but it explains why 256 colors is the original web color palette: sixteen squared is 256. Basically, the palette starts with 16 colors, and then raises and lowers the value (lightness or darkness) for each of the original 16 colors, at 16 levels of gradation. The 256 colors aren’t the same 256 on the Mac as the PC, so to deal with variations, experts devised a universal “web-safe” palette.

Web-Safe at a Glance

To check whether a color is web-safe (can be rendered without “dithering”), look at its number designation. If it is expressed in RGB, then the numbers can only be 0, 51, 102, 153, 204, and 255. Notice that they increment by 51. Therefore, a color like 153-51-204 (bright purple) is web safe, but 142-67-208 (another bright purple) is not web safe. The hex equivalents of those two colors are #9933CC and #8E43D0. In web-safe hex, the pairs can only be 00, 33, 66, 99, CC, and FF, so you can see that the first purple is web safe, but the second purple is not. You can also see by looking at the hex version of the second purple that variations of colors are almost infinite. That’s how we get 16 million web colors!