

HOW DOES A COMPUTER MAKE COLORS?

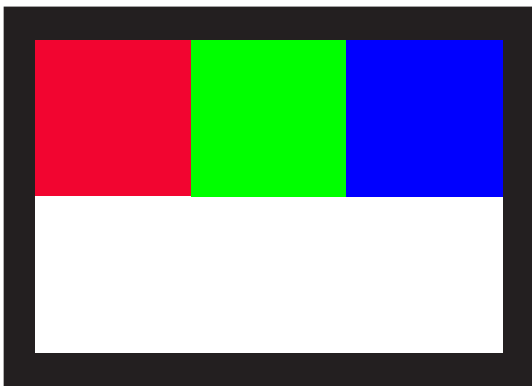
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As children, we learn that the primary colors are Red, Yellow and Blue—in that context, color is considered “subtractive color.” This is great for mixing paints, but it is not how our eyes or the computer interpret color.

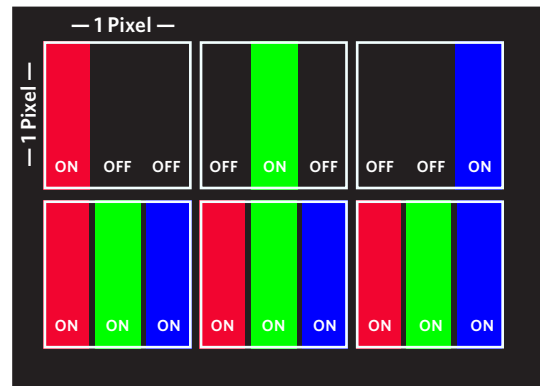
Our eyes and the computer see color additively. The colors that we see in the real world are received by photoreceptor cells in our eyes called cones. Most people have 3 types of cones, each sensitive to either Red, Green or Blue. We also have photoreceptors called “Rod” cells which are sensitive to dim light (note that rod receptors are sensitive to brightness, not color,

which is why we lose our color sensitivity at night). The sum total of Red, Green and Blue light is what creates the visible spectrum of light—this is why we call it “Additive Color” because we are adding RGB values—the computer works in the same way and a computer monitor has tiny diodes for Red, Green and Blue. If you add 100% Red, 100% Green and 100% Blue, the result is White. Try looking at your computer monitor close up to see a grid of RGB diodes—note how different colors turn on/off or dim/brighten different RGB diodes to create all of the colors we can see.

HOW WE SEE COLORS



HOW THE COMPUTER SIMULATES THOSE COLORS



ACTUAL PHOTO OF LCD SCREEN TAKEN WITH A MACRO LENS ADAPTER ON AN IPHONE

