

CS Field Guide, Chapter 5, Images and Colors Guided Notes

[Link to CS Field Guide, Chapter 5.5](#)

1. What three primary colors do printers mix together to make all colors?
2. What is subtractive mixing?
3. What three primary colors do computer screens mix together to form all colors?
4. What is additive mixing?
5. Using the RGB color mixer, complete the following chart.

Color	Red value	Green Value	Blue Value
Black	0	0	0
White			
Gray			
Yellow			
Orange			
Purple			
Blue			

6. What is a pixel?
7. The CS field guide explains that each color (red, green and blue) have a range of values 0 - 255. The combination of these values gives us different shades of color....16,777,216 color choices to be exact. What is special about the number 255? (Think back to your activities with the binary flippy do and our discussions of bit & byte).
8. Explain what is meant by 24-bit color.
9. Can we drop the leading zeros on the binary representations for RGB?

10. An image can hold millions of pixels. Using 24 bits to save the color for one pixel can require a lot of memory to save an entire image. Read the section on Representing Colors with Fewer Bits. Then click on the Image Bit Comparer. Explore those images and the quality of resolution. Upload an image of your own and play around with the Image Bit Comparer.

In your own words, describe the tradeoffs associated with storage and image quality.