

Shwe Oak (Htet Thu Win)

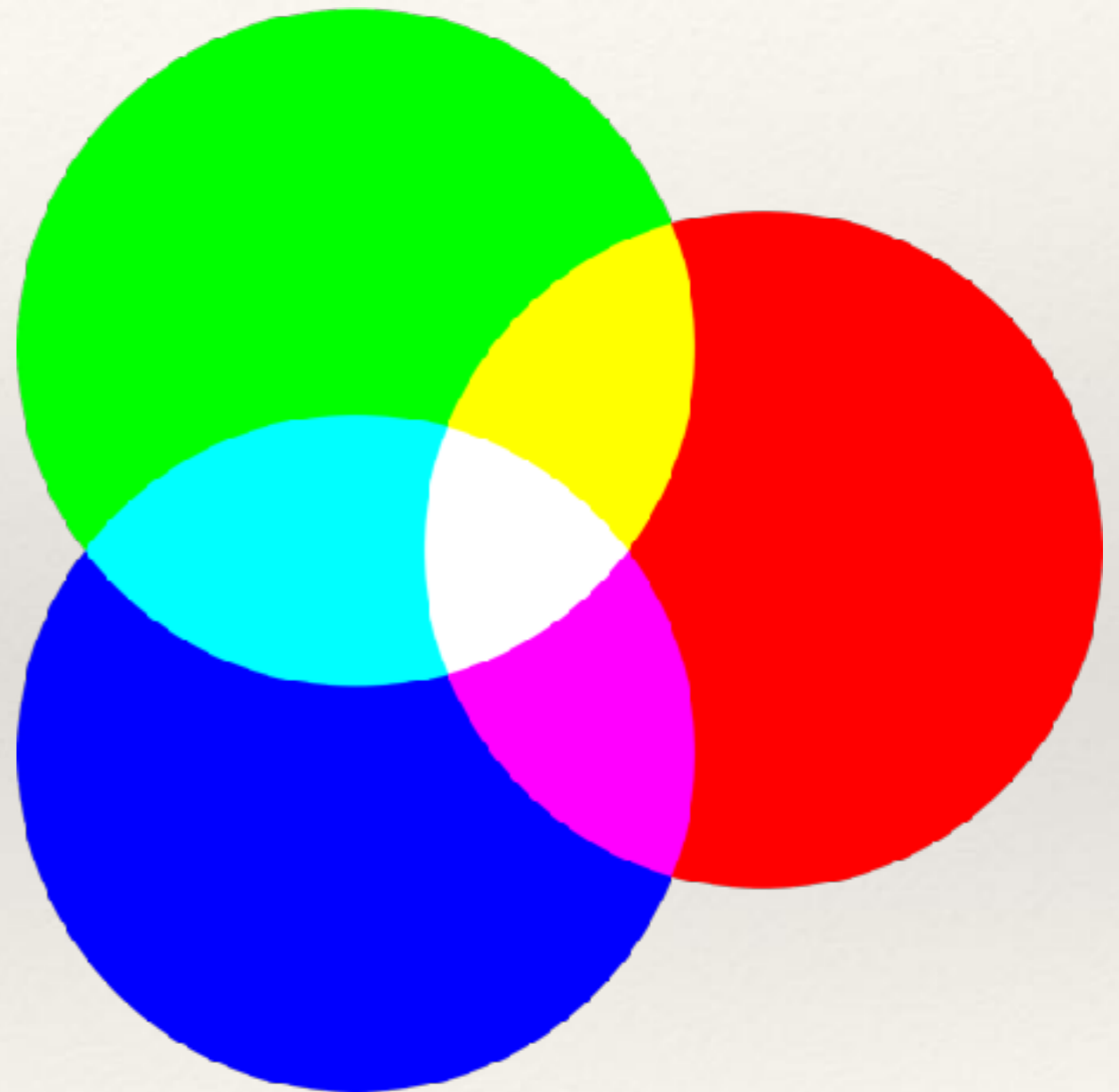
CSS Basics: Color Theory

What is color theory?

- ❖ Practical combination of science & art of using color

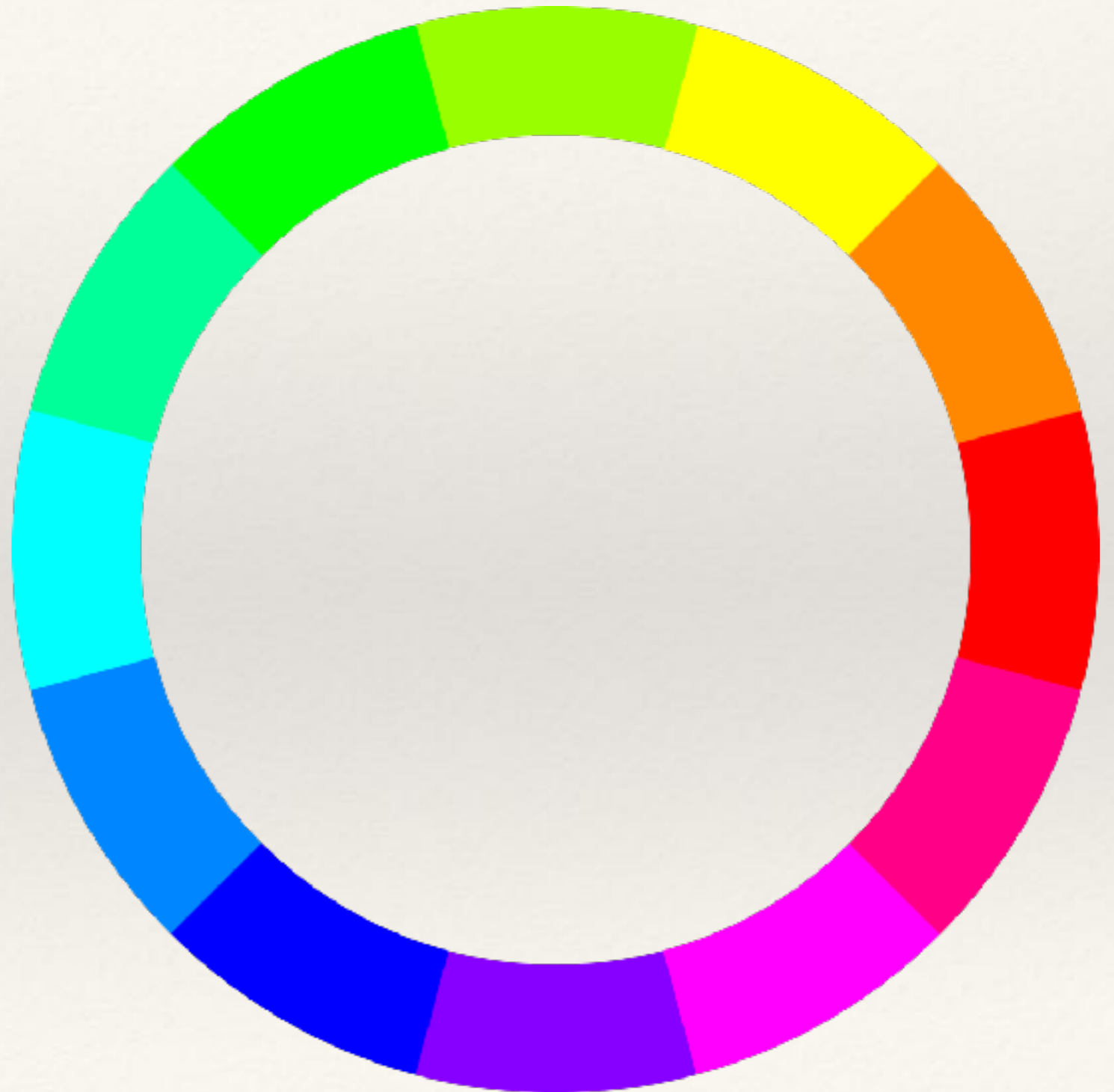
Additive Color

- ❖ Color can be mixed to form other color



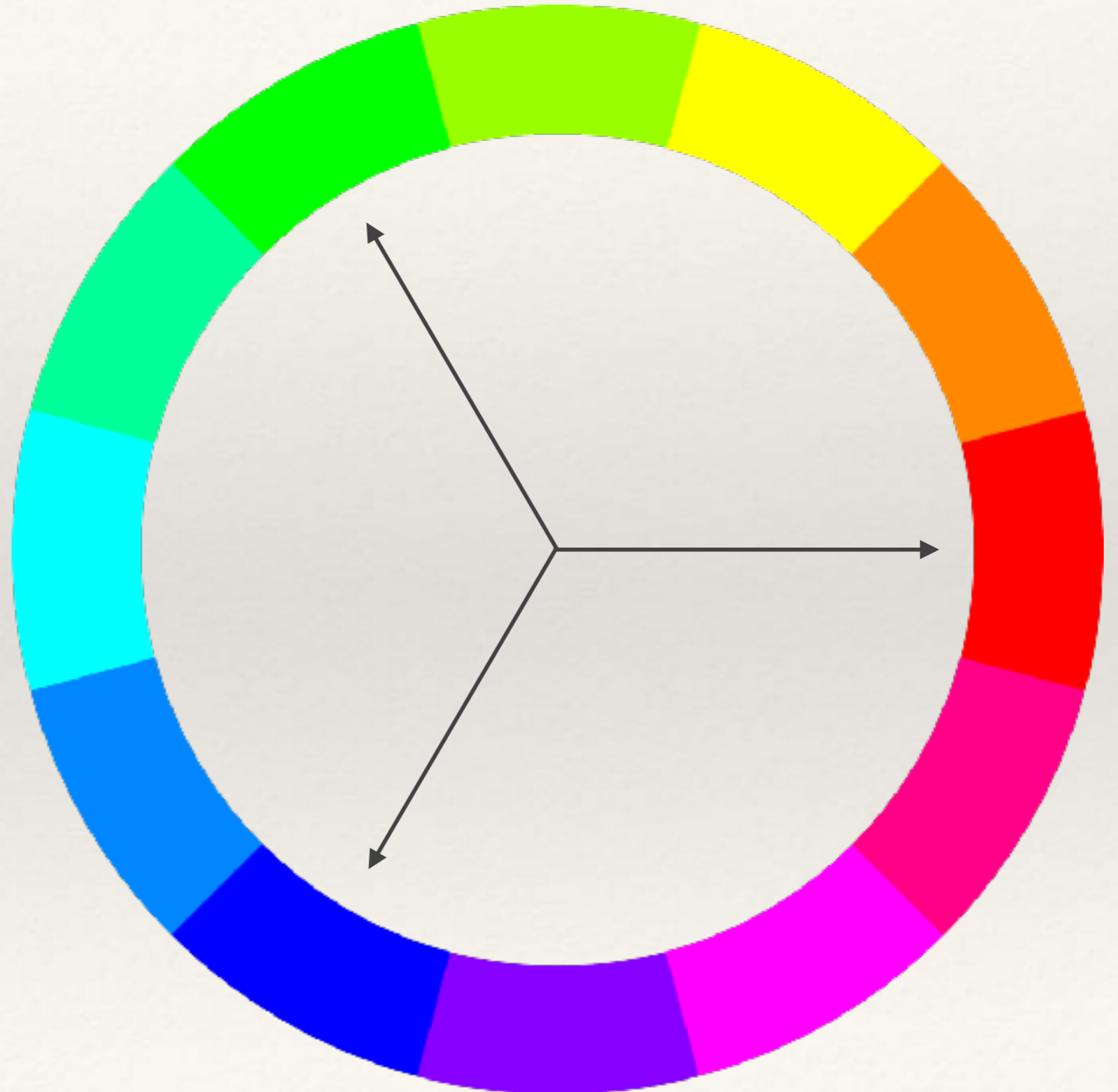
Color Wheel

- ❖ Invented by Issac Newton in 1666 by mapping color spectrum onto a circle
- ❖ Basic tool for combining colors



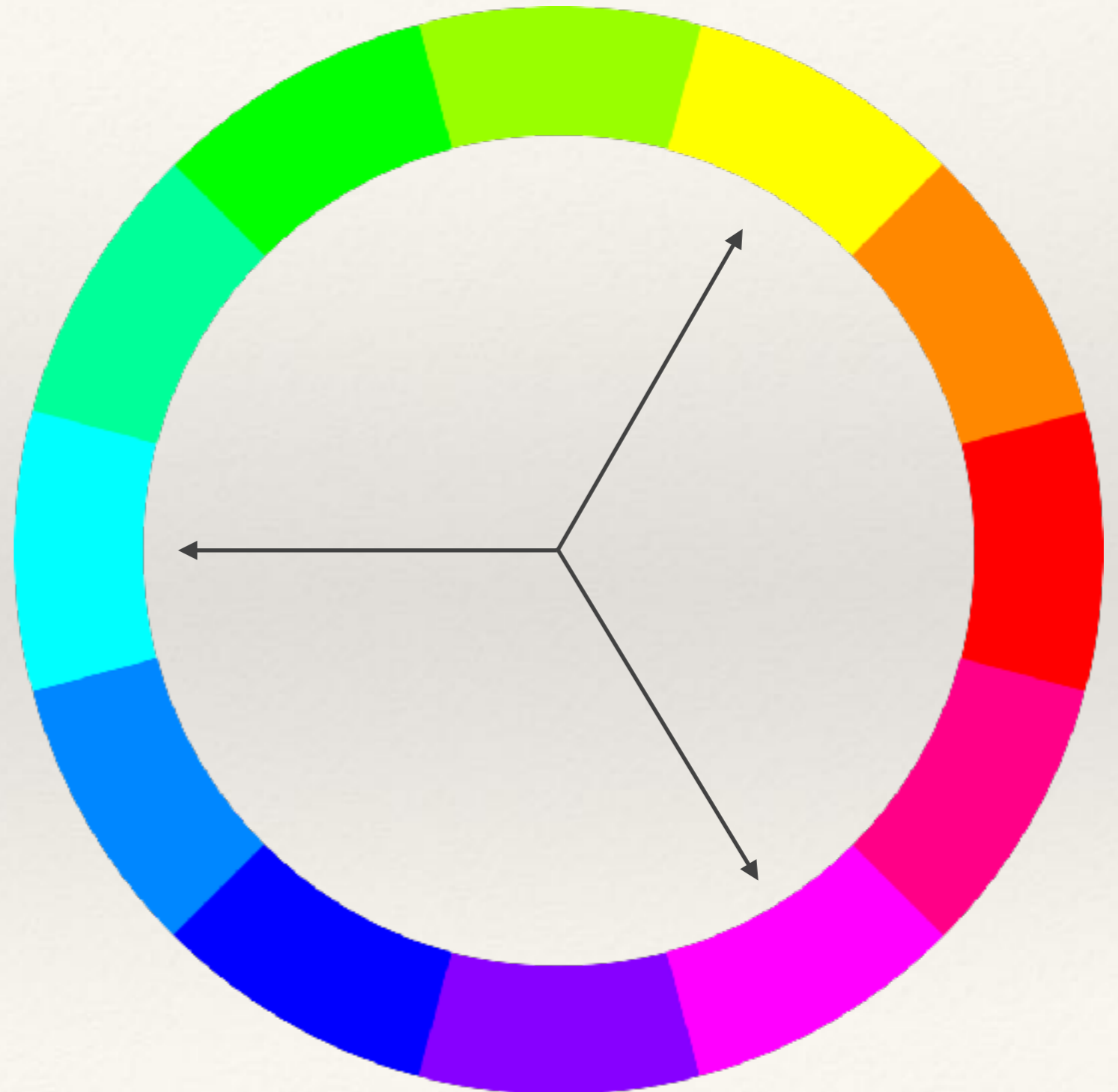
Primary Colors

- ❖ No rule regarding which colors are primary colors
- ❖ Screen: RGB
- ❖ Print: CMY
- ❖ Web Primary Colors
 - ❖ Red
 - ❖ Green
 - ❖ Blue



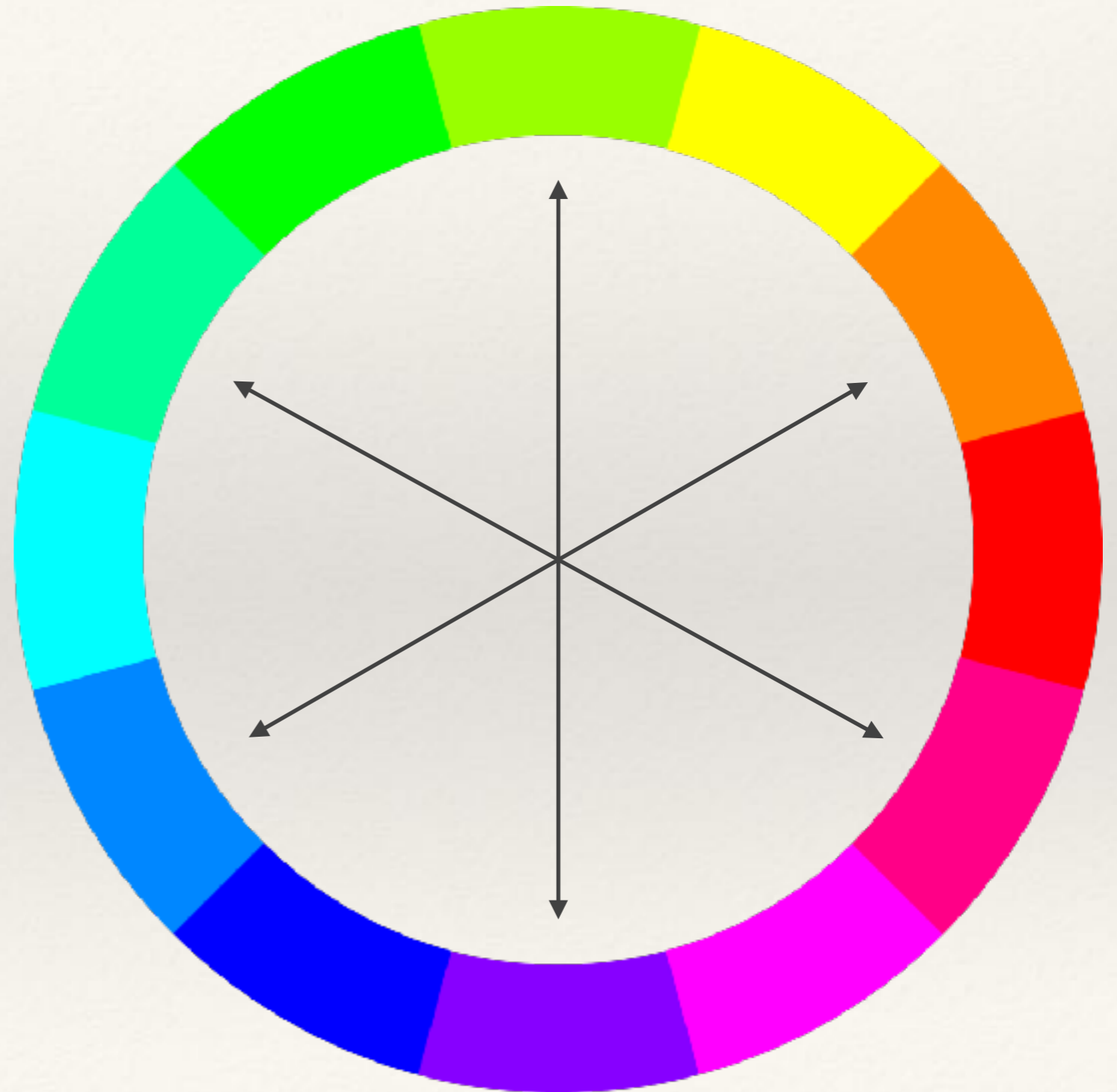
Secondary Colors

- ❖ Combine 2 primary colors
- ❖ Secondary Colors:
 - ❖ Yellow
 - ❖ Cyan
 - ❖ Magenta



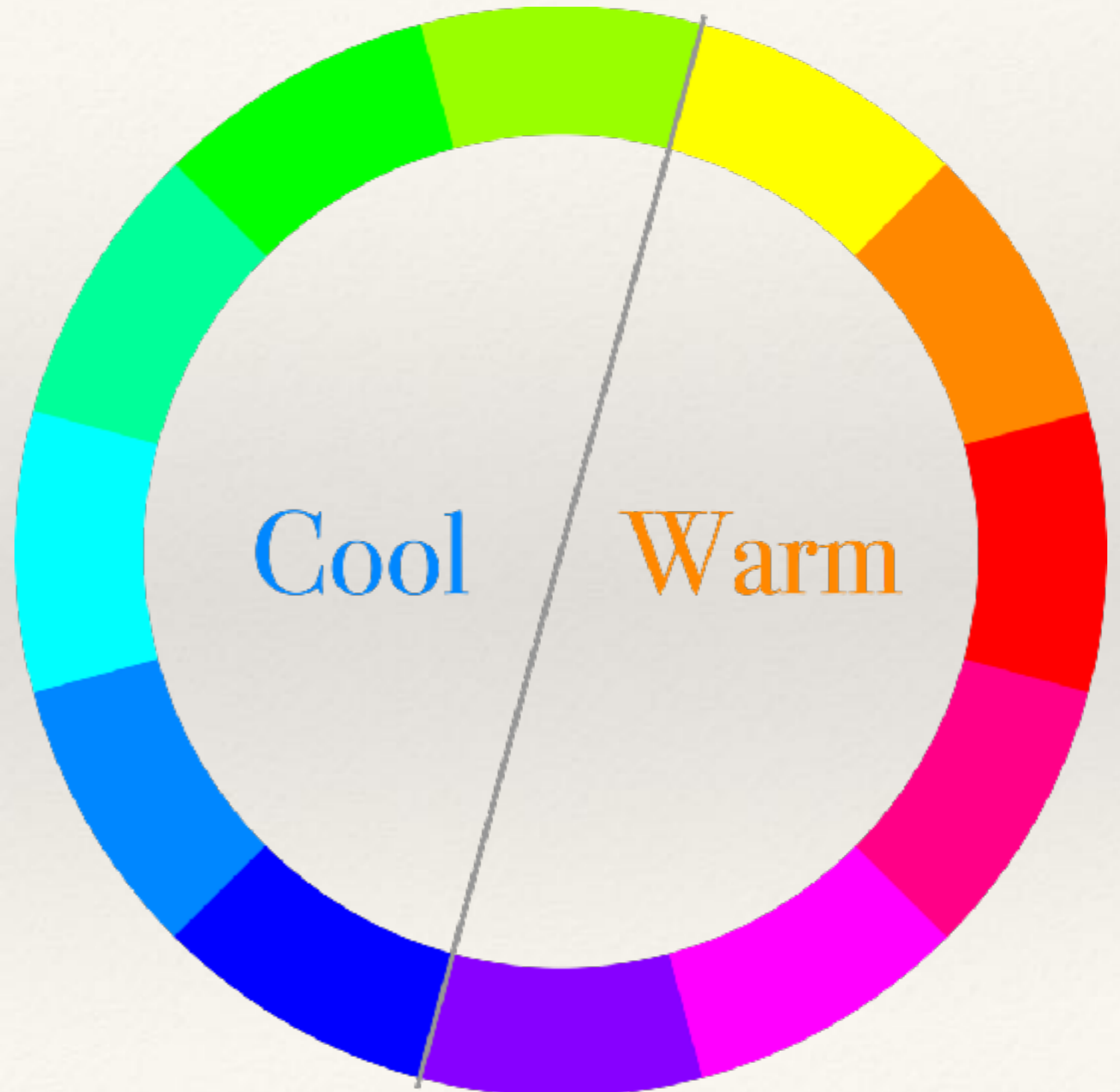
Tertiary Color

- ❖ Combine primary and secondary colors
- ❖ Total: 6



Warm & Cool Colors

- ❖ Warm colors
 - ❖ warmth, vivid, energetic
- ❖ Cool colors
 - ❖ Calm, soothing
- ❖ Neutral colors
 - ❖ White, black, gray

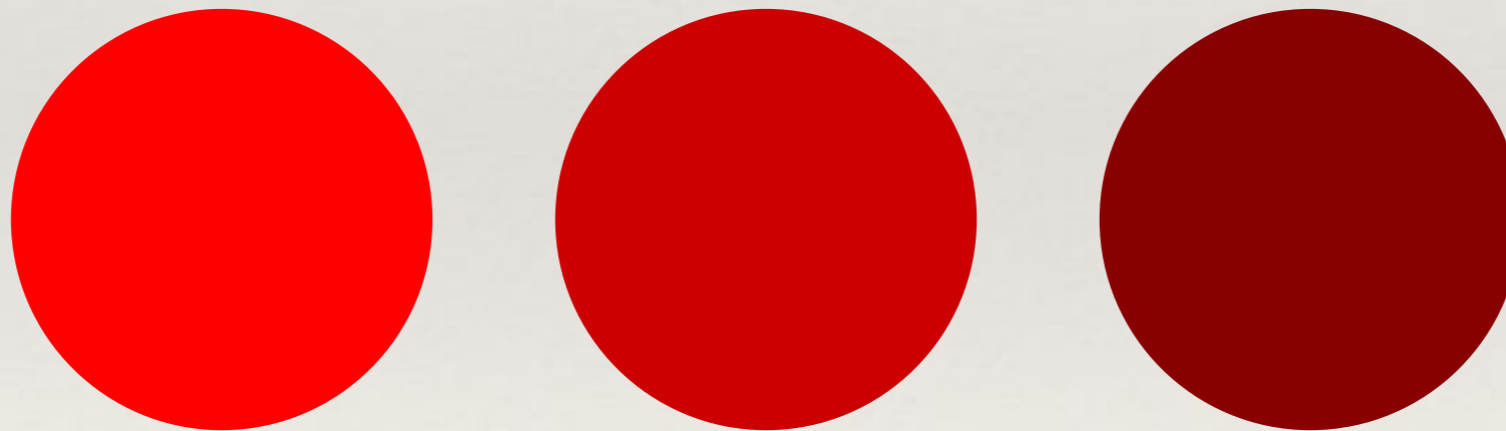


Hue, Saturation, & Luminance

- ❖ Hue: Any color in the color wheel
- ❖ Saturation: Intensity or purity of the color
- ❖ Luminance: Amount of brightness or light in the color

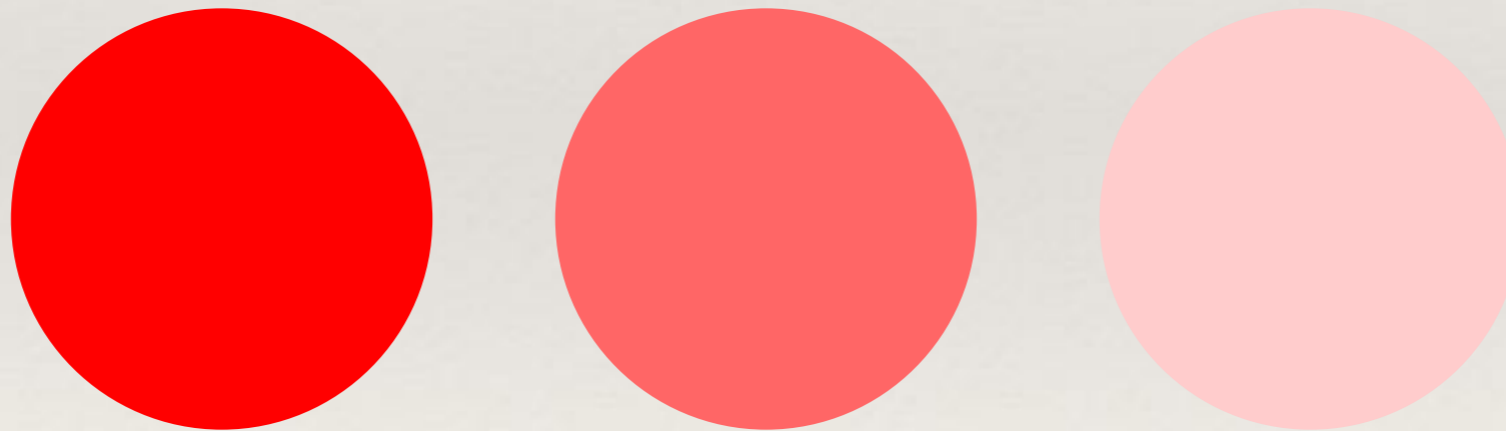
Shade

- ❖ Created by adding **black** to a base hue, darkening the color



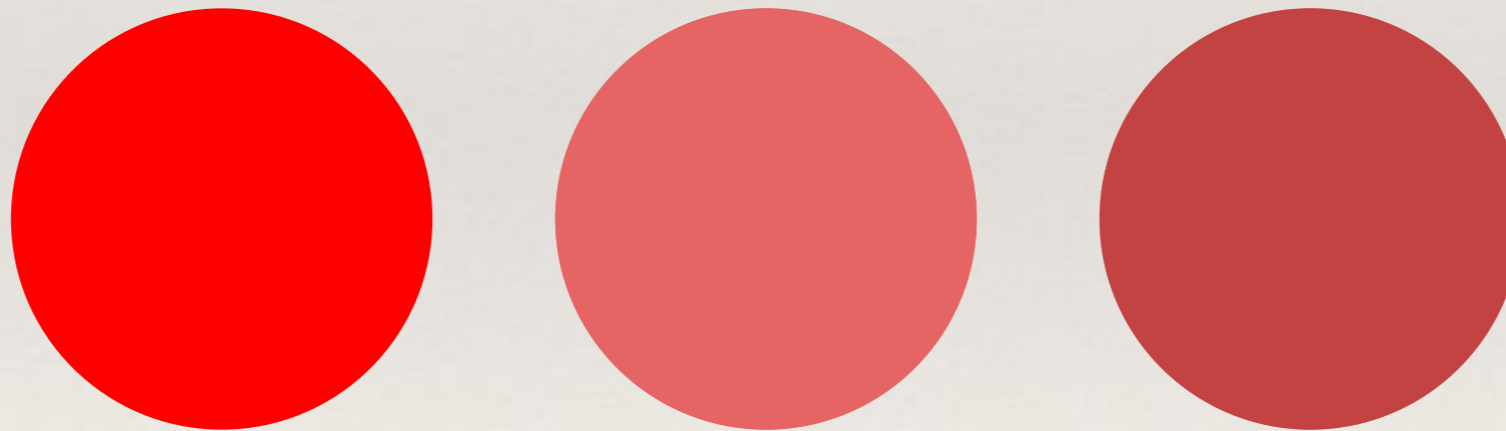
Tint

- ❖ Created by adding **white** to a base hue, lightening the color



Tones

- ❖ Created by adding **gray (combining black & white)** to a base hue



Contrast

- ❖ Difference between 2 colors
- ❖ See <https://medium.muz.li/the-science-of-color-contrast-an-expert-designers-guide-33e84c41d156>

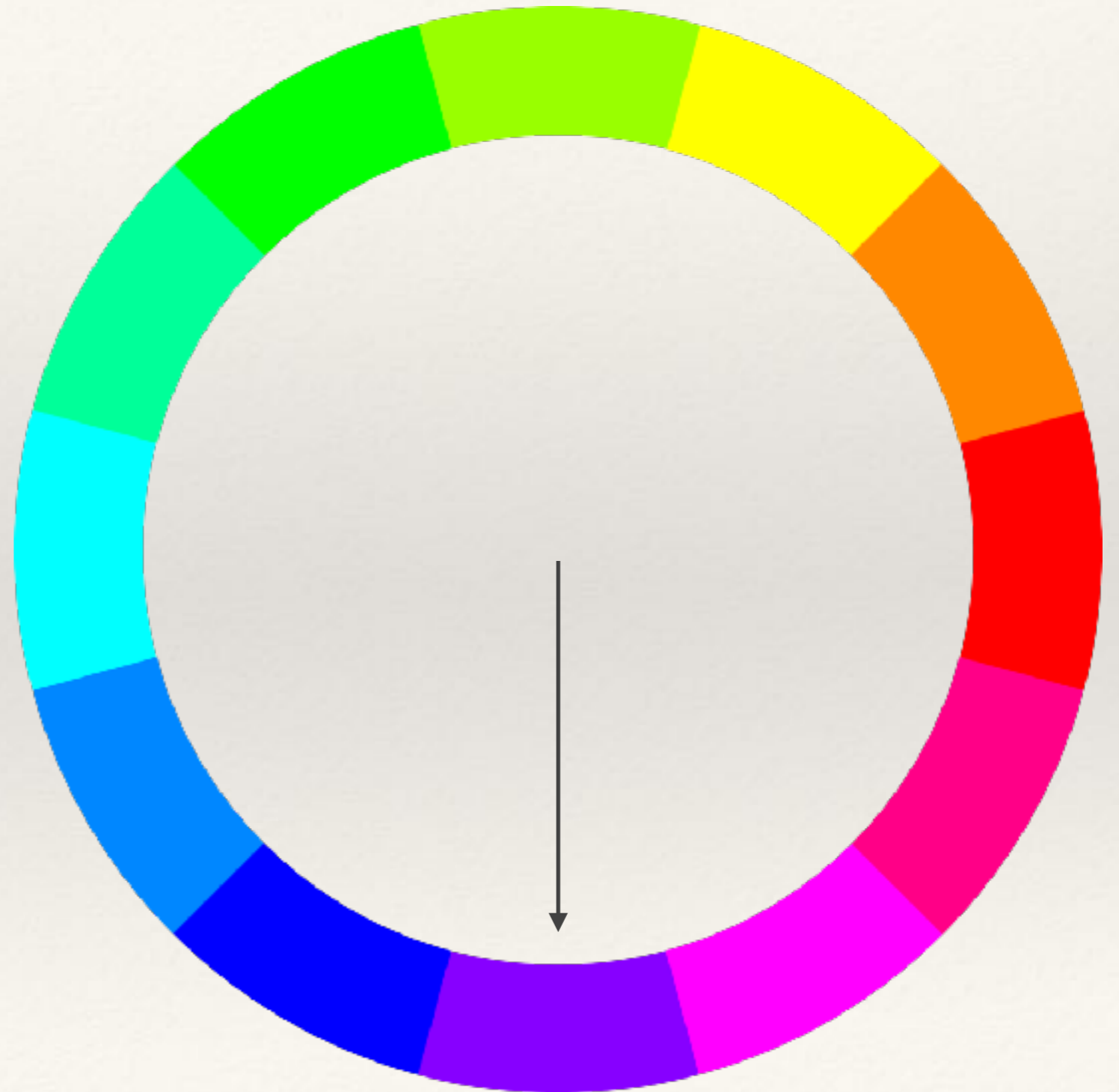
Color Vibration (Avoid)

- ❖ Using brightly colored hues together is hard for users to read and cause visual vibration
- ❖ Vibrating color combinations should be avoided

| | | |
|-----------------|------------------|------------------|
| Red & Green | Red on Green | Green on Red |
| Blue & Orange | Blue on Orange | Orange on Blue |
| Green & Magenta | Green on Magenta | Magenta on Green |
| Yellow & Cyan | Yellow on Cyan | Cyan on Yellow |
| Blue & Magenta | Blue on Magenta | Magenta on Blue |

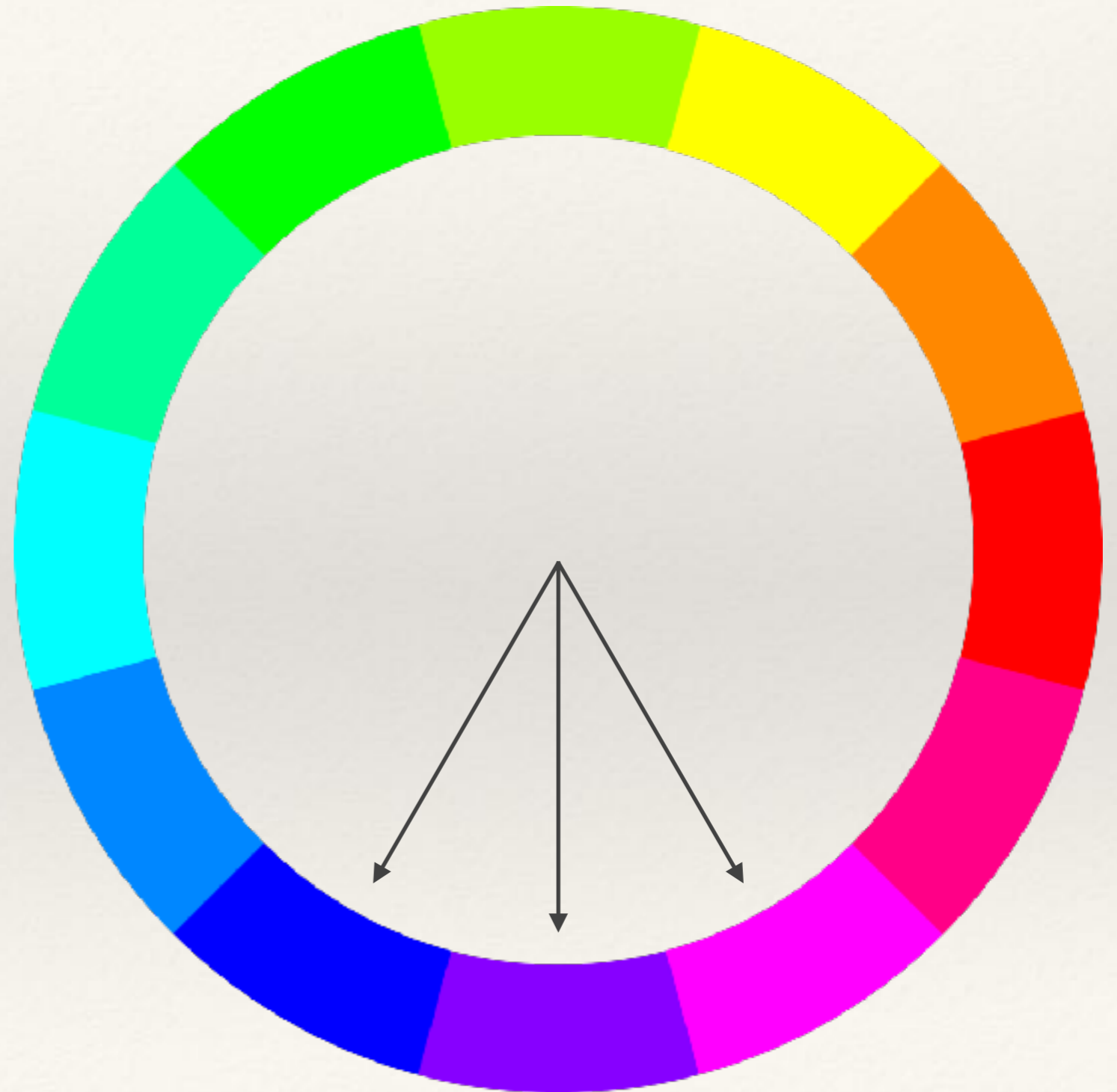
Color Scheme (Monochromatic)

- ❖ Use one color with different tones on the color wheel
- ❖ https://www.w3schools.com/colors/colors_monochromatic.asp



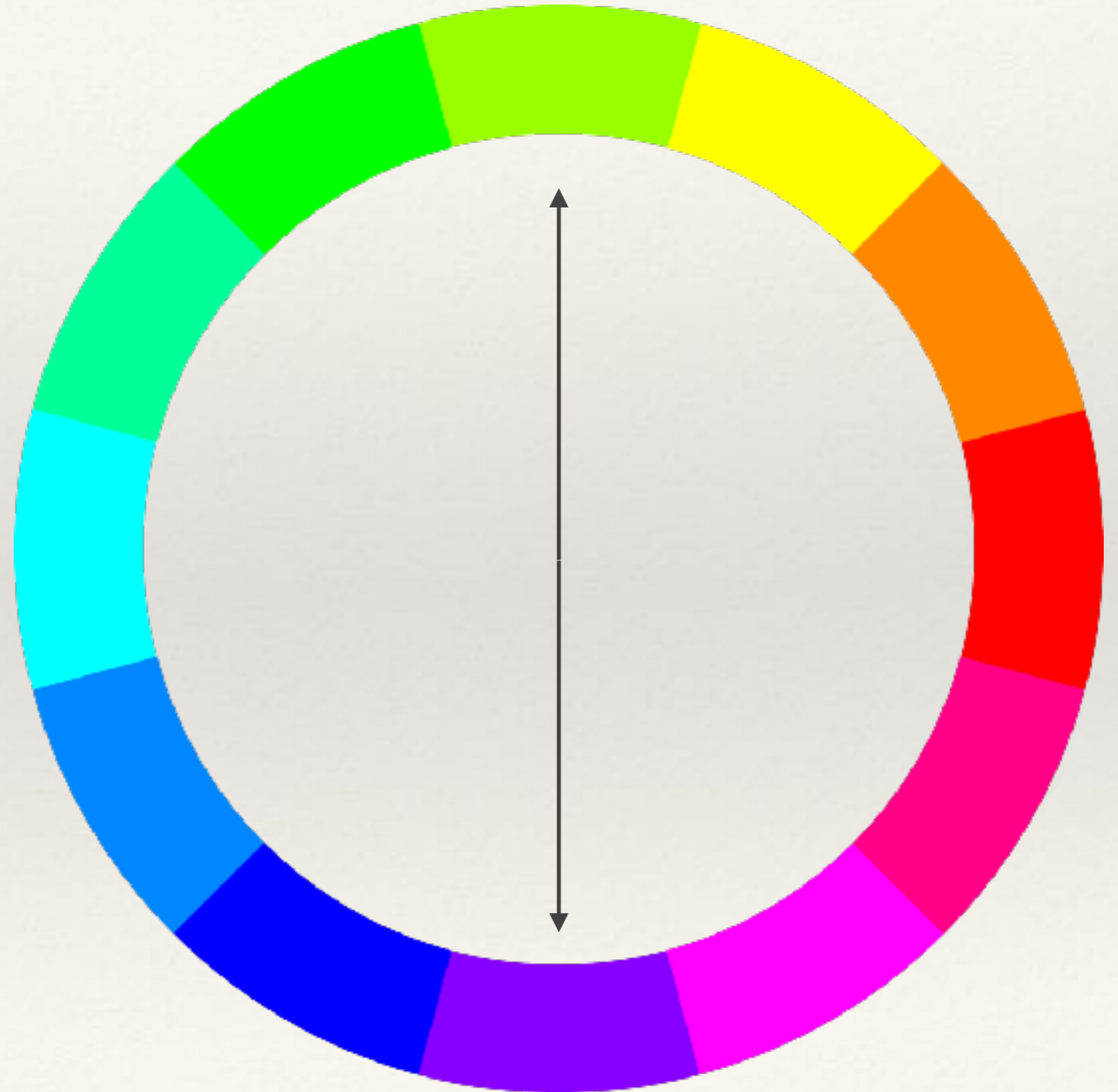
Color Scheme (Analogous)

- ❖ Use colors that are next to each other on the color wheel
- ❖ https://www.w3schools.com/colors/colors_analogous.asp



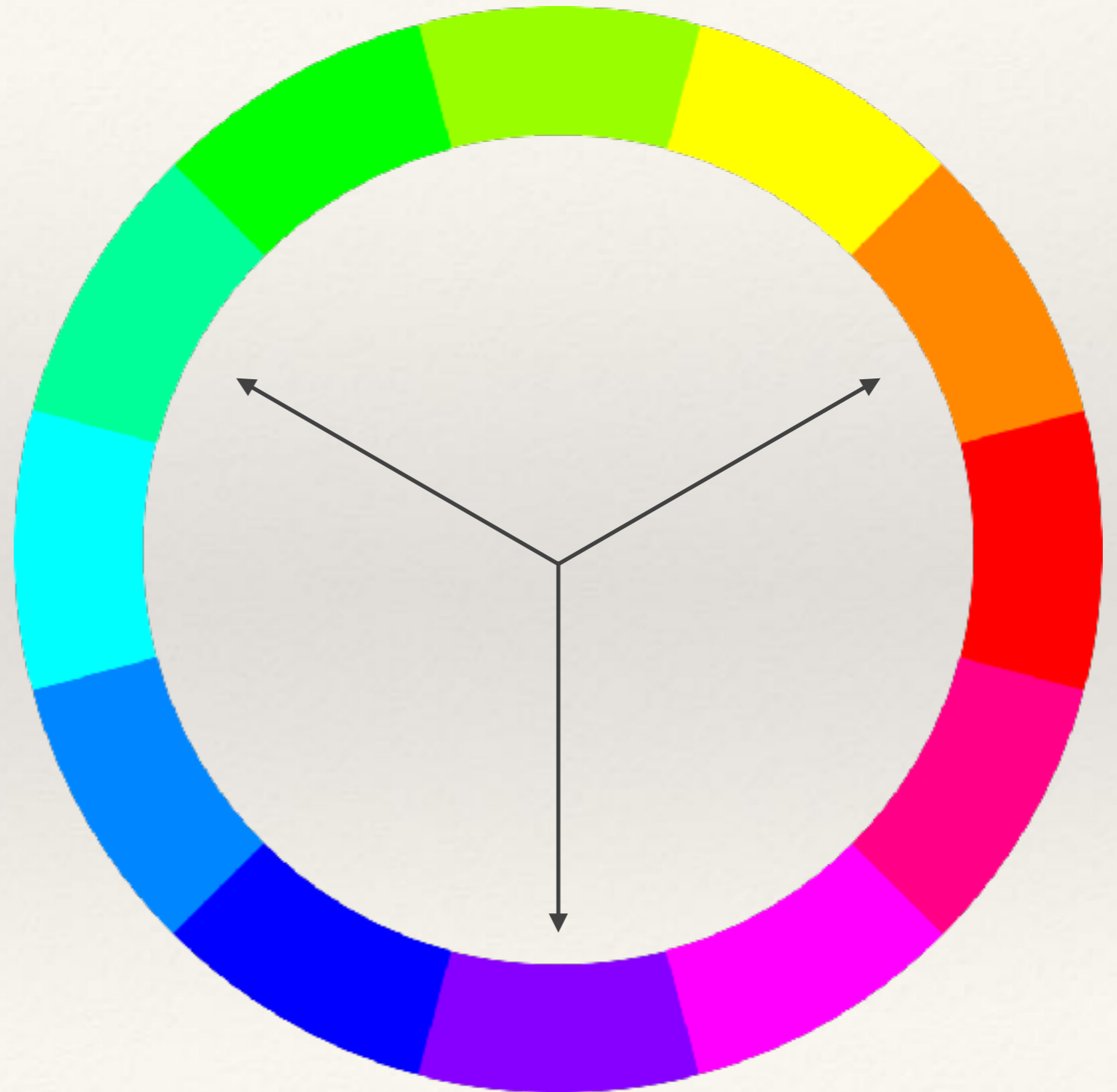
Color Scheme (Complementary)

- ❖ Use colors that are opposite sides of the color wheel
- ❖ https://www.w3schools.com/colors/colors_complementary.asp



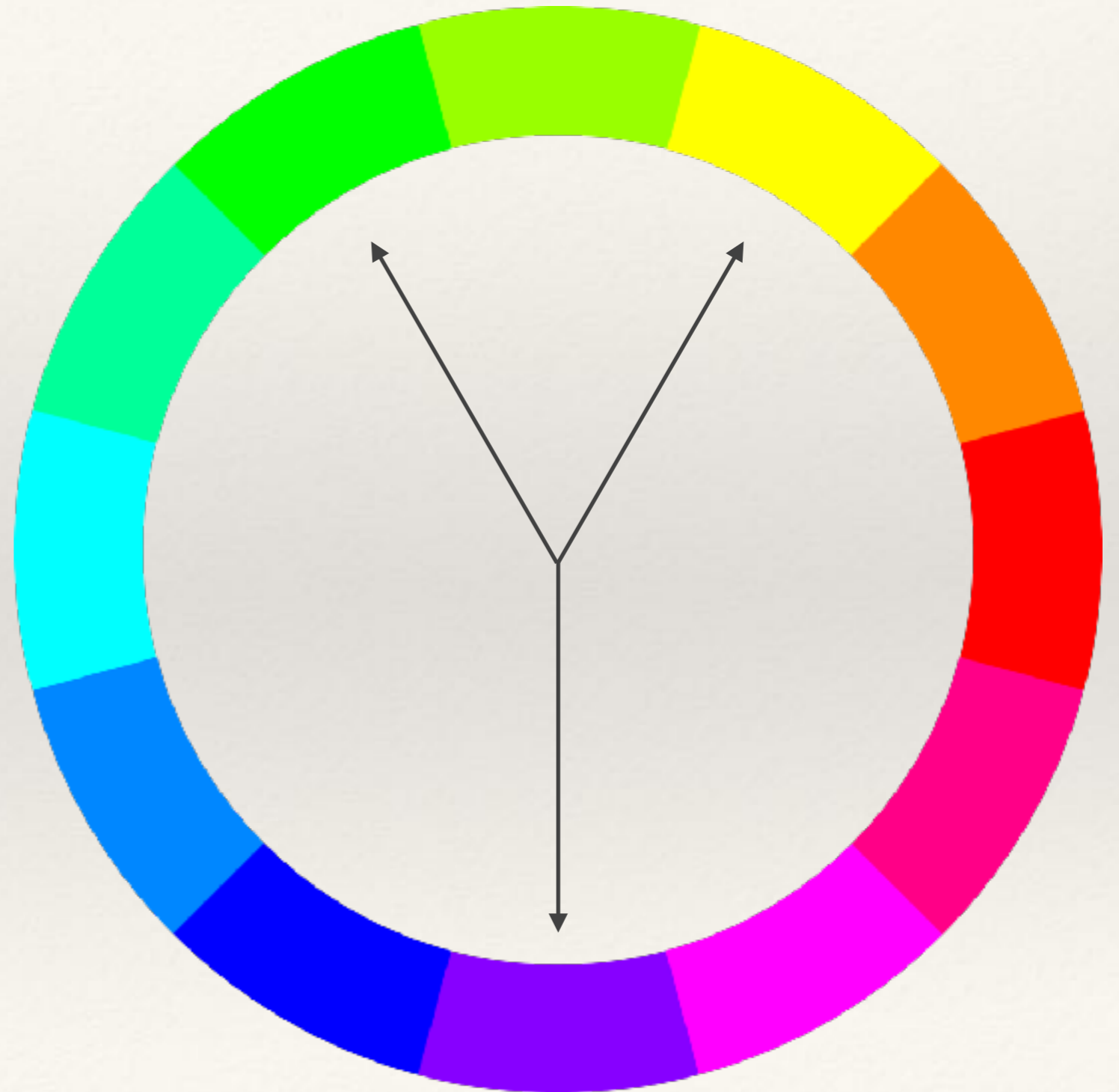
Color Scheme (Triadic)

- ❖ Use colors that are equally spaced around the color wheel
- ❖ https://www.w3schools.com/colors/colors_triadic.asp



Color Scheme (Split Complementary)

- ❖ Use colors that are both side of opposite color in the color wheel
- ❖ https://www.w3schools.com/colors/colors_compound.asp



Color Scheme

- ❖ Adobe Color (<https://color.adobe.com>)
- ❖ Colors (<https://colors.co/>)
- ❖ Paletton (<https://paletton.com>)

Color Psychology

- ❖ Color psychology is the study of hues as a determinant of human behavior (Wikipedia)
- ❖ Example:
 - ❖ Red: war, danger, strength, power, love
 - ❖ Blue: peaceful, spiritual, sincere
 - ❖ Yellow: joy, happiness
 - ❖ Green: growth, harmony, freshness, fertility

Color Psychology

- ❖ Color perception is subjective
- ❖ Meaning of color varies by culture
 - ❖ Example: **white** is purity, innocence, goodness and peace in the west but death, unhappiness and misfortune in most Asian cultures

Color Blindness

- ❖ **Color blindness**, also known as **color vision deficiency**, is the decreased ability to see color or differences in color. (Wikipedia)
- ❖ Three types of color blindness:
 - ❖ Red-green color blindness (most common)
 - ❖ Blue-yellow color blindness
 - ❖ Total color blindness
- ❖ <https://www.toptal.com/designers/colorfilter>

Color Theory Infographic

- ❖ <https://www.designmantic.com/blog/wp-content/uploads/2014/05/Color-Theory-Infographic.jpg>

Thank you