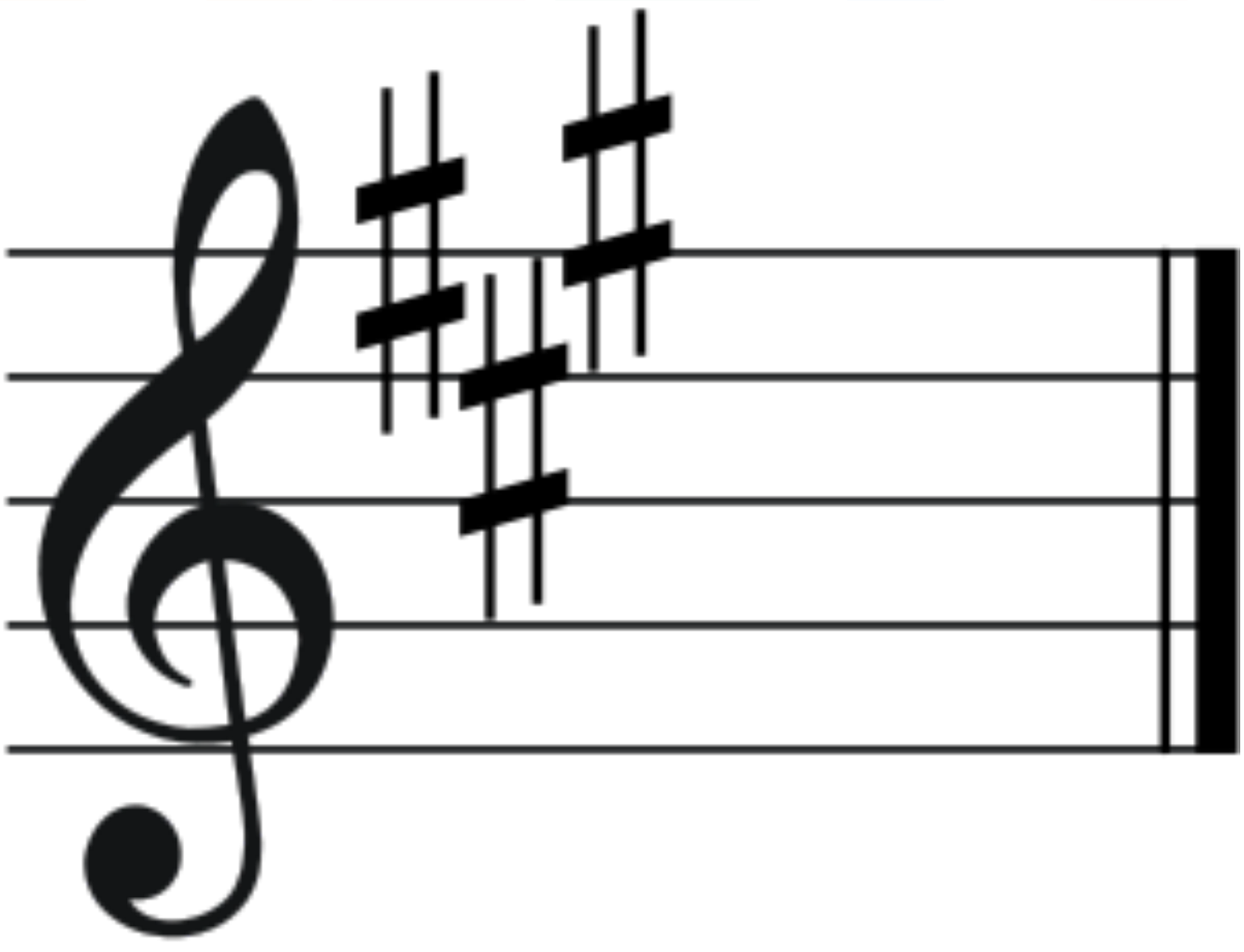
COLOR

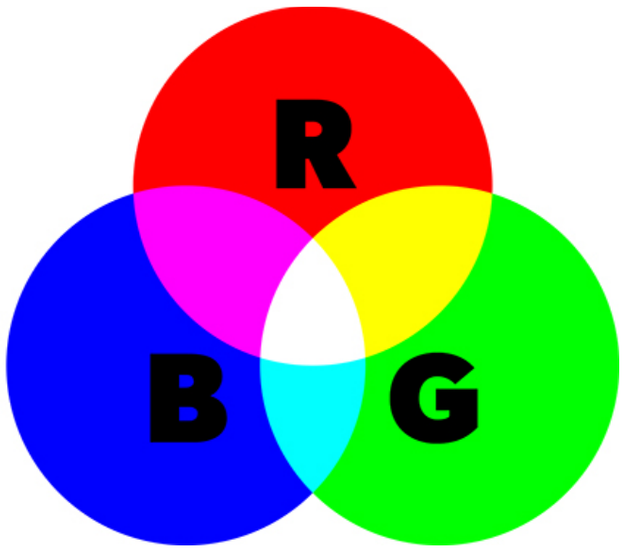
By **CAMILLE G LEE** MAR 3, 2017

define your PALETTE



Color Spaces

screen

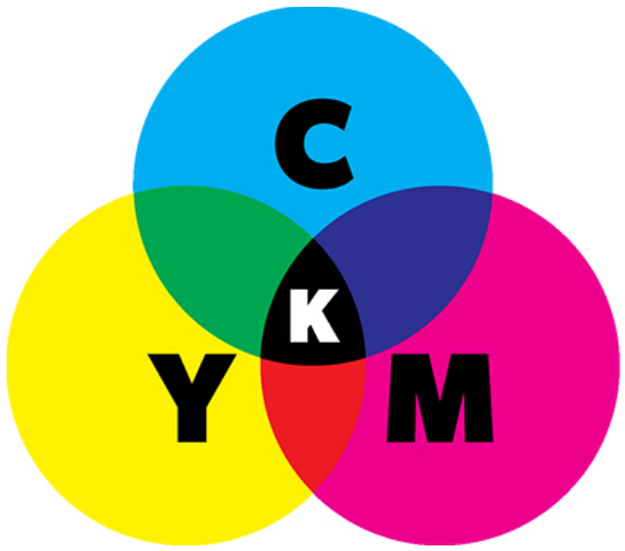


RGB

Red, Green, Blue

- Process by which red, green, and blue light are combined to create colors.
- Used in digital displays.

print



CMYK

Cyan, Magenta, Yellow, Black

- Printing process by which tiny dots of cyan, magenta, yellow and black inks are layered to make colors.
- Used in offset and digital printing.

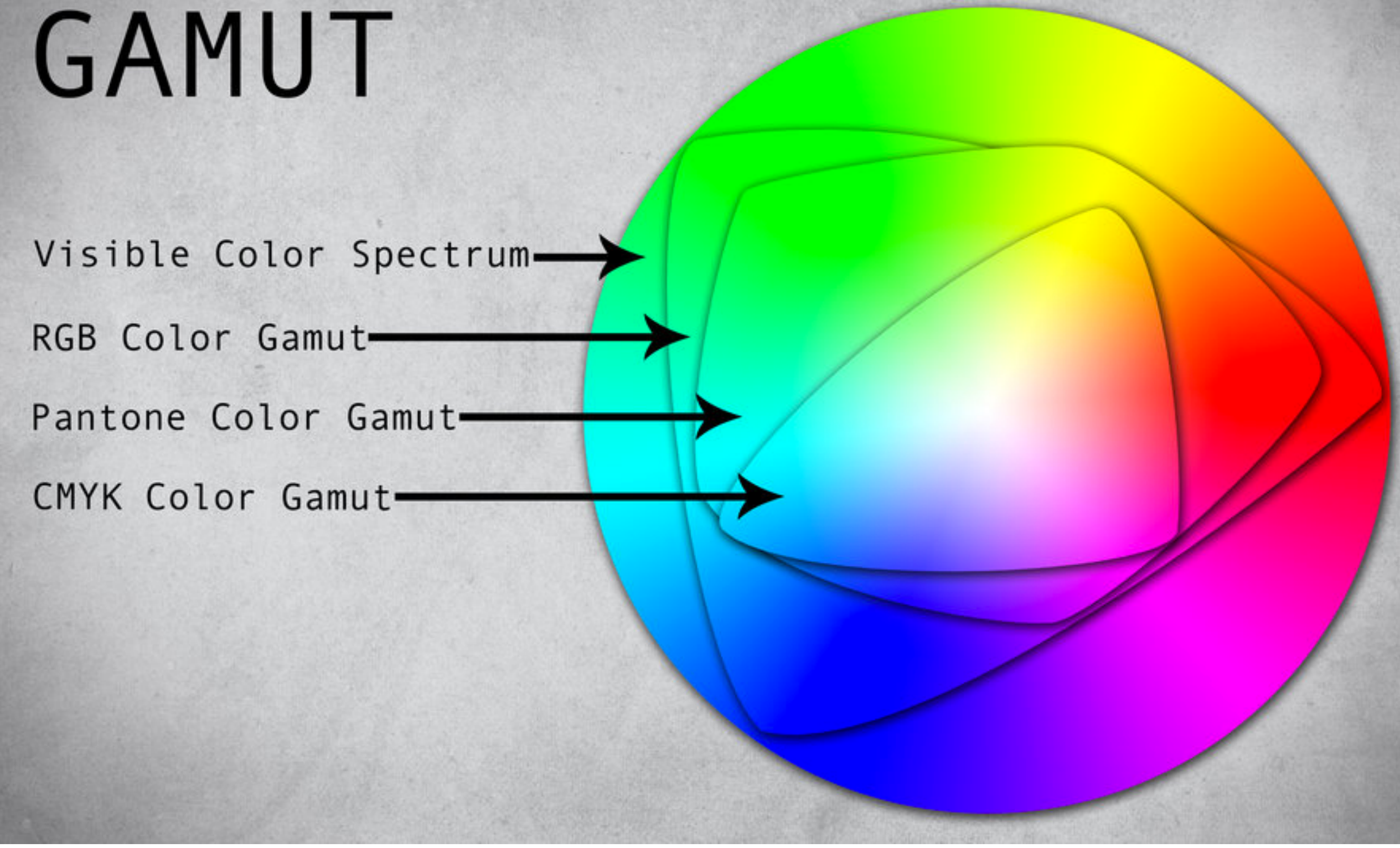
print

PMS

Pantone Matching System

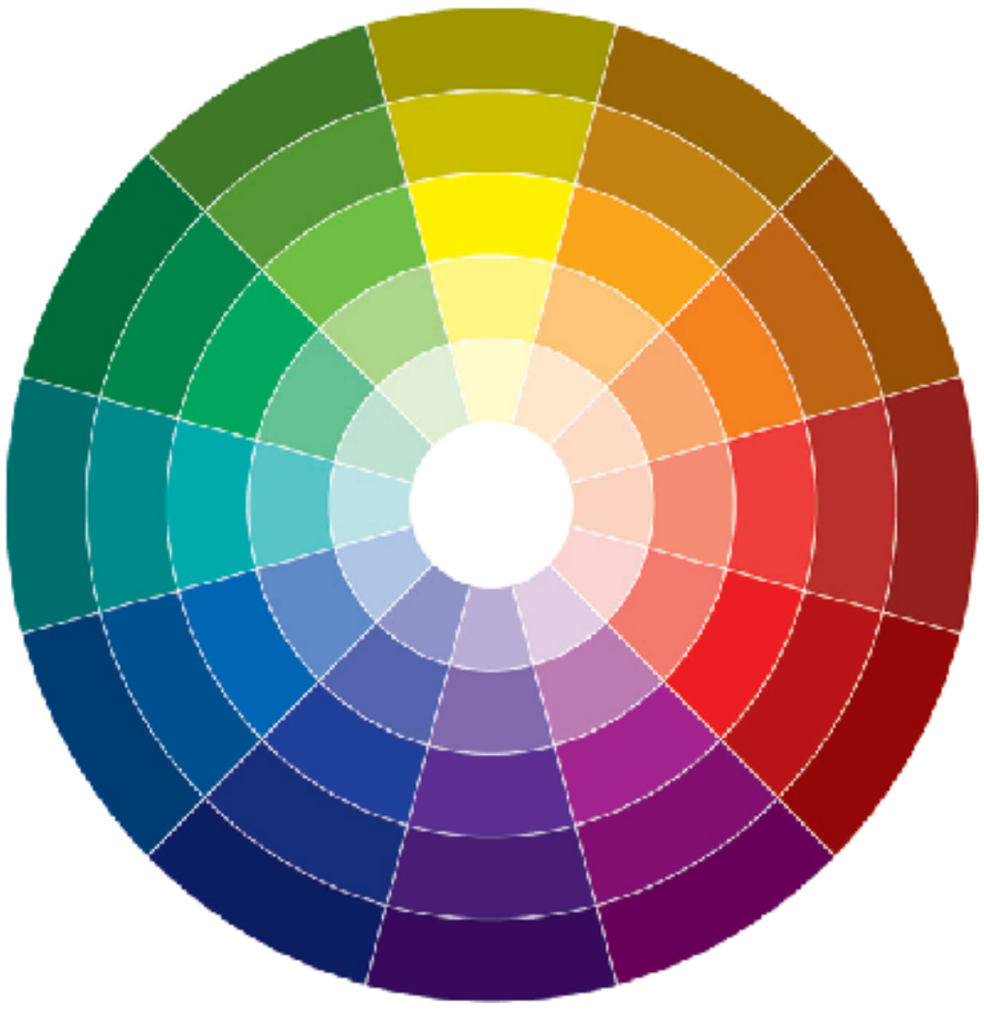
- PMS color are patented, standardized color inks.
- Used in offset printing.

GAMUT



http://fc03.deviantart.net/fs71/i/2011/159/a/3/gamut_handout_by_designstew-d3icqef.jpg

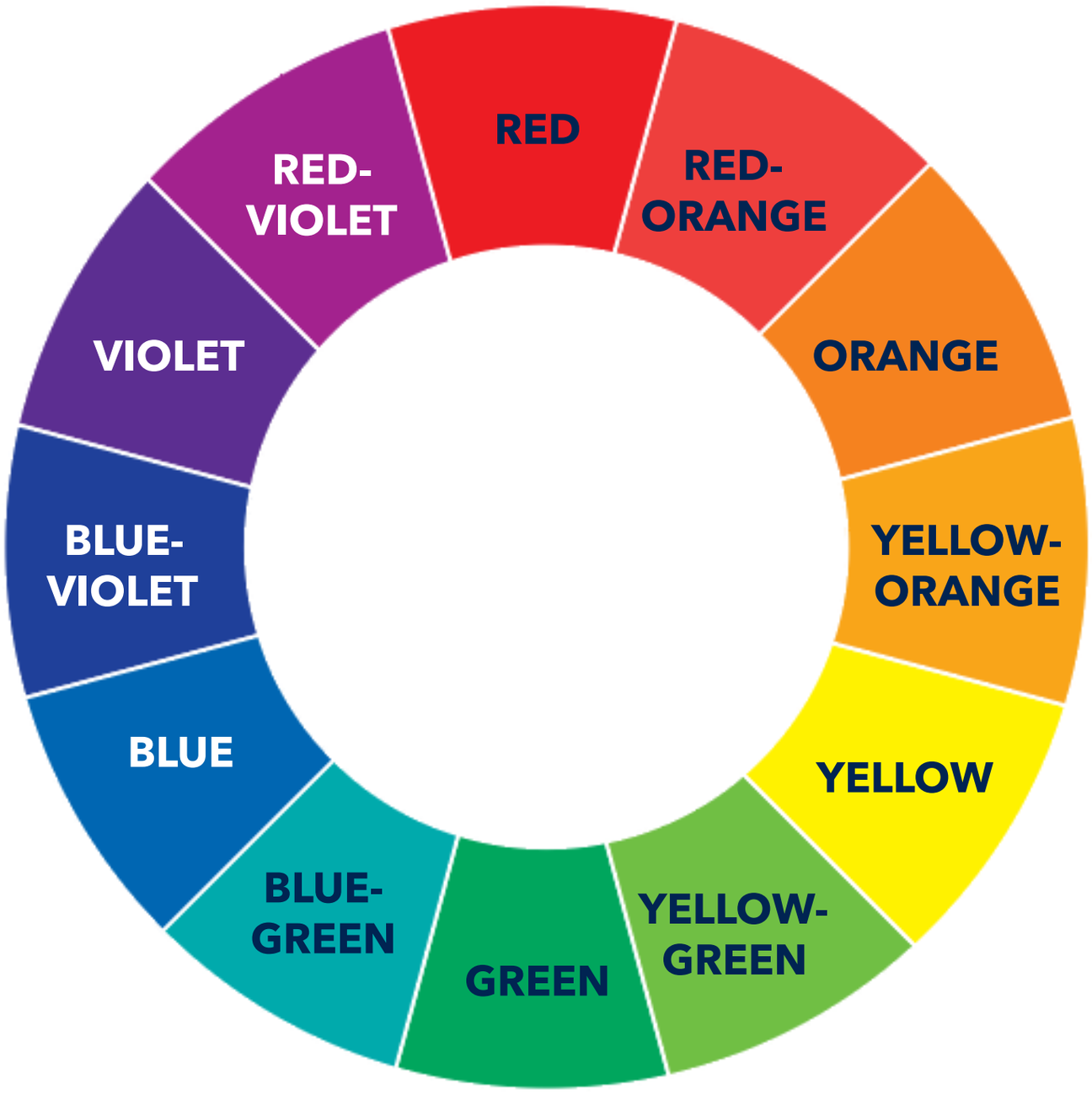
attributes of COLOR



1. HUE
2. SATURATION
3. VALUE
4. TEMPERATURE

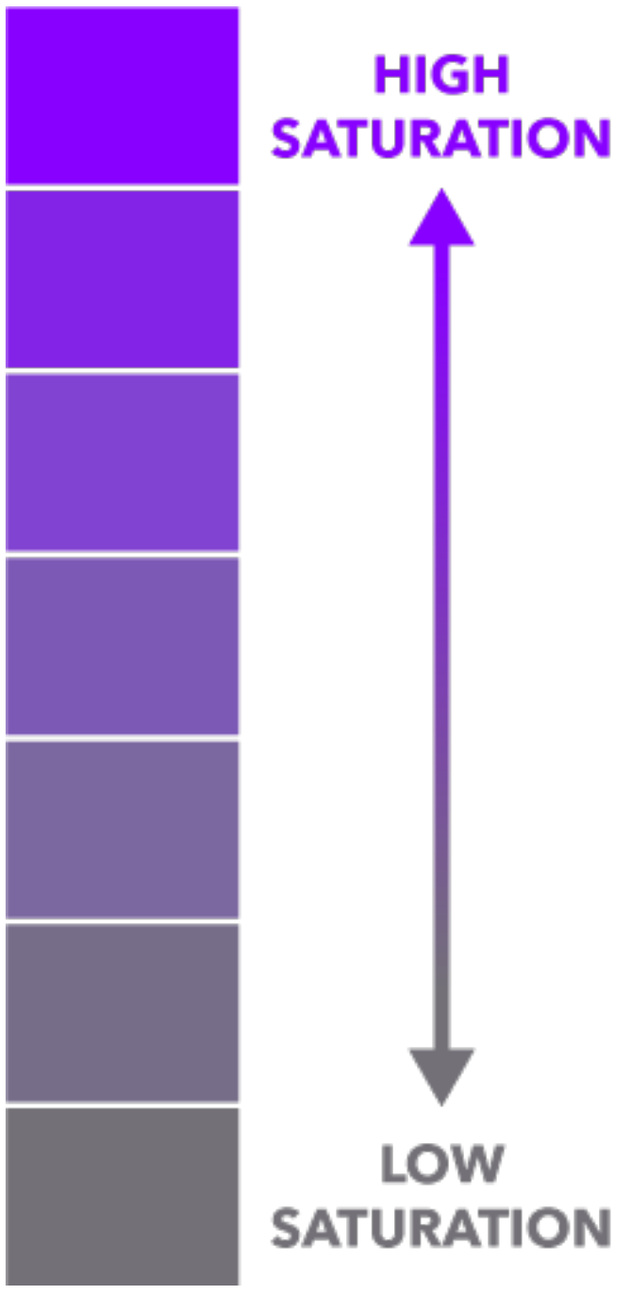
Hue

HUE = BASE COLOR



Saturation

SATURATION = "GRAYNESS"



- Mixing complementary colors will create grey
- To reduce saturation of a color, mix in its complementary color

Low saturation **High saturation**

When color is removed the value scale is the same across each gem



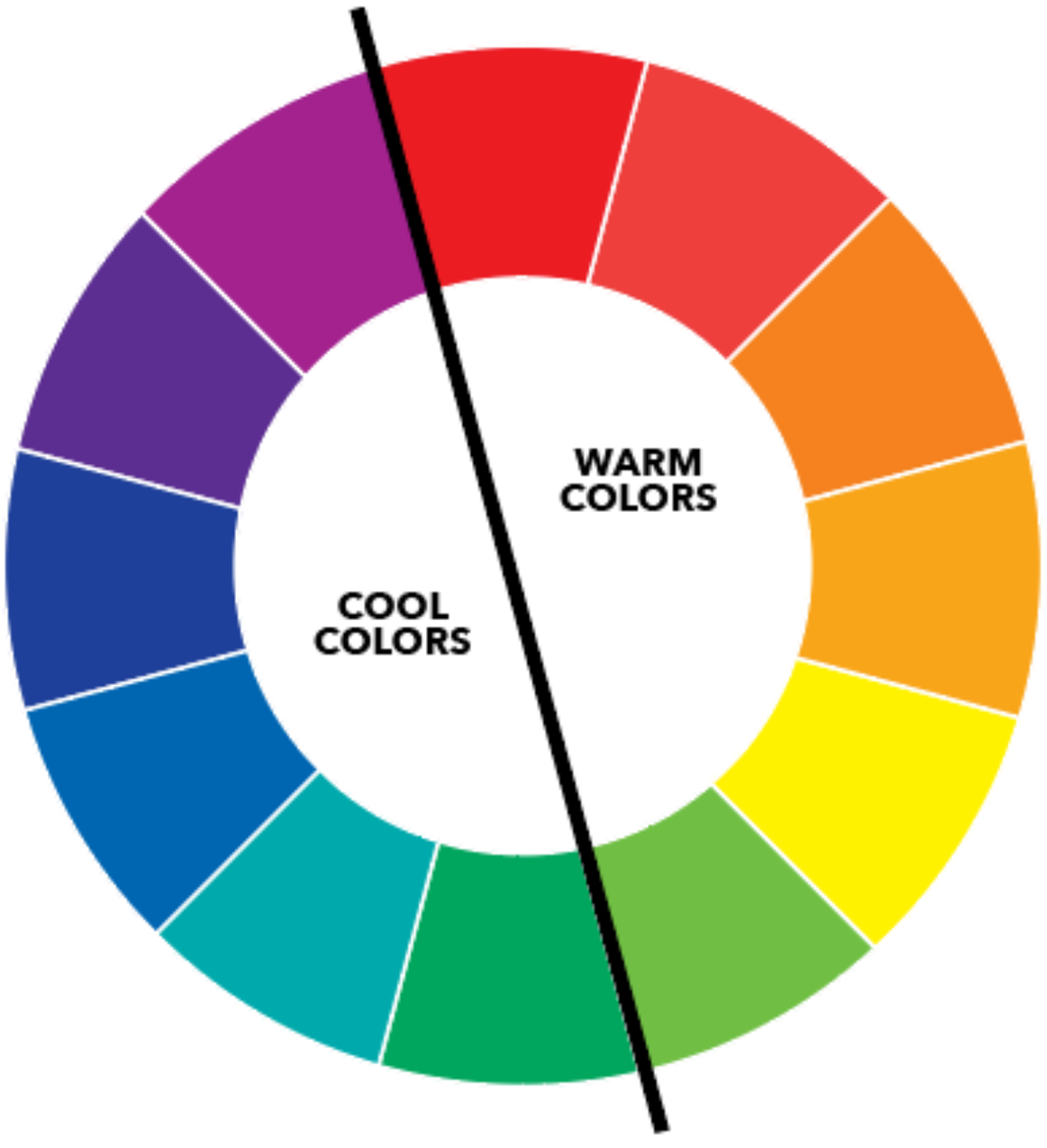
Value

VALUE = DARKNESS/LIGHTNESS

- **tint** = hue + white
- **shade** = hue + black

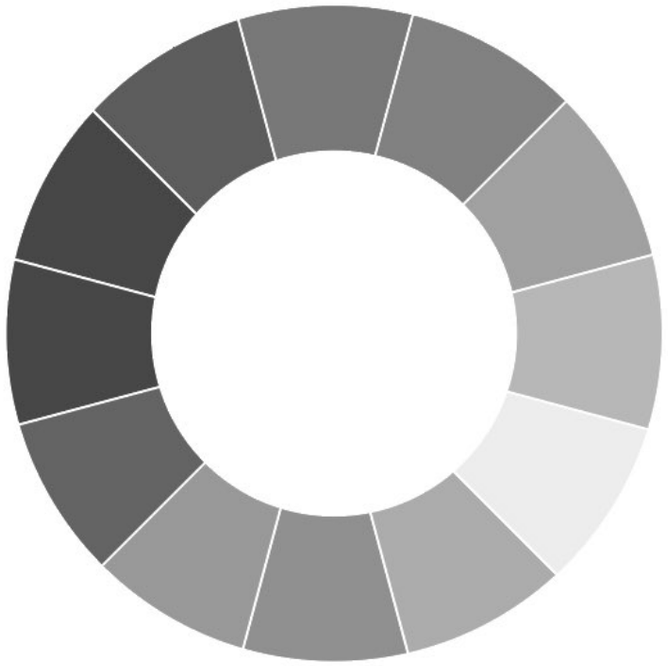
Temperature

TEMPERATURE = WARMTH/COOLNESS



- Color temperature is a relative attribute
- Color temperature can only be compared between two colors

COLOR HARMONIES

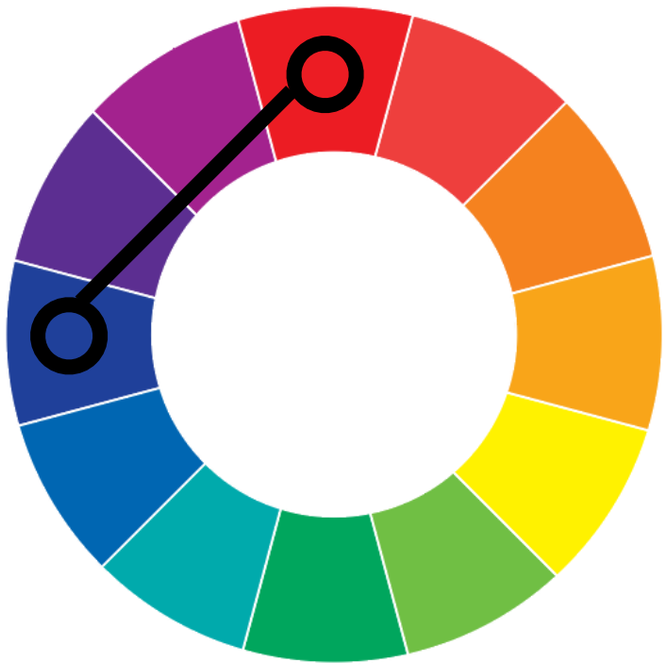


Neutral:
Greys, beiges, creams, browns

Neutral

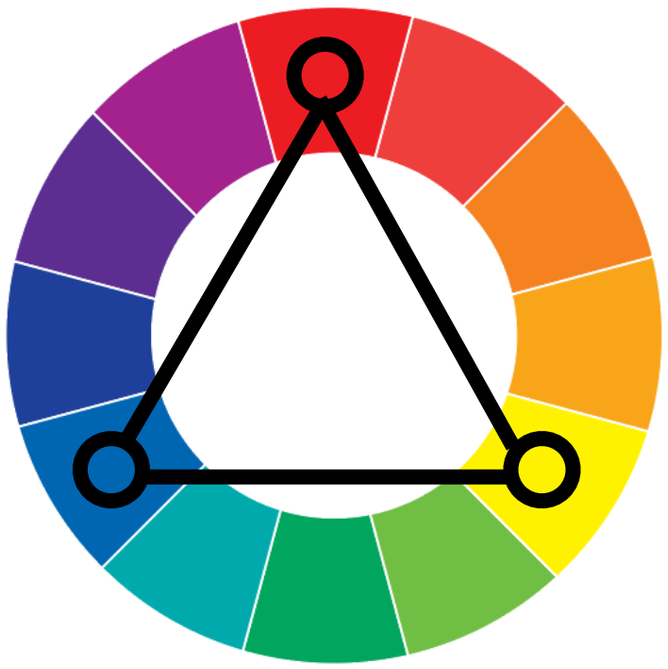
Monochromatic:
One hue with various tints and/or shades

Monochromatic



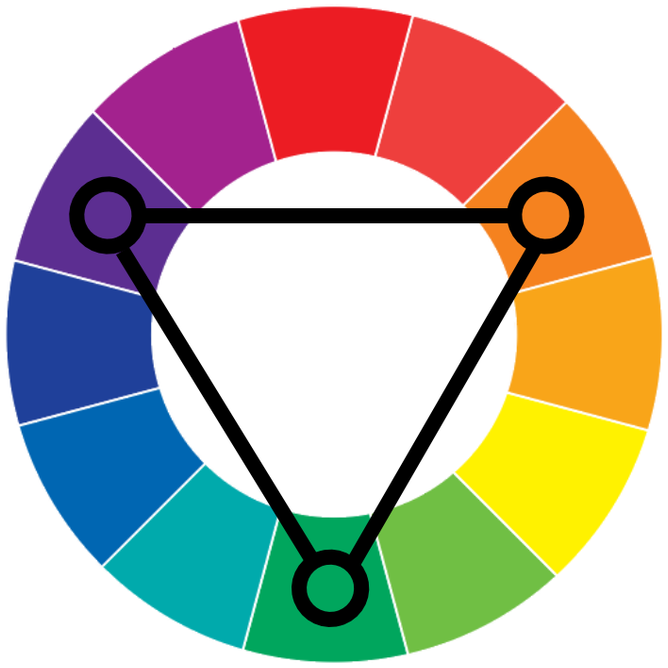
Dyadic:
Two hues separated by two hues on the color wheel.
A warm and cool color.

Dyadic



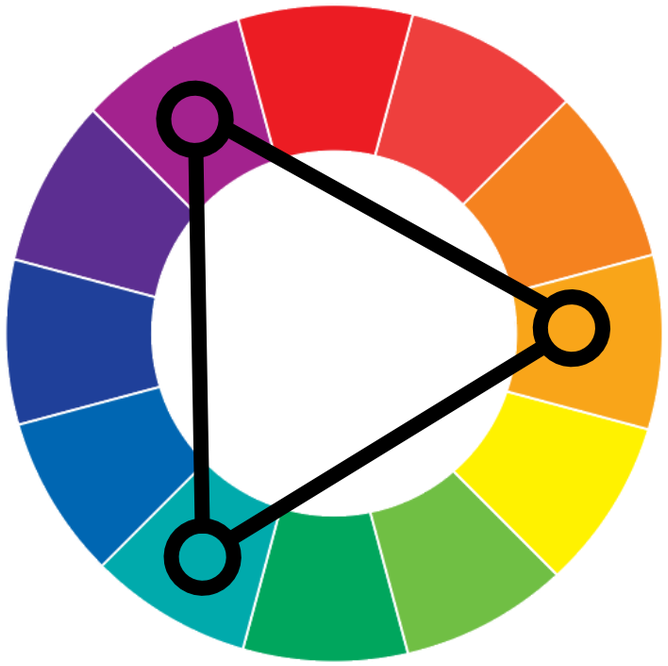
Triadic: Primary Colors
Red, Yellow, Blue

Triadic: Primary Colors



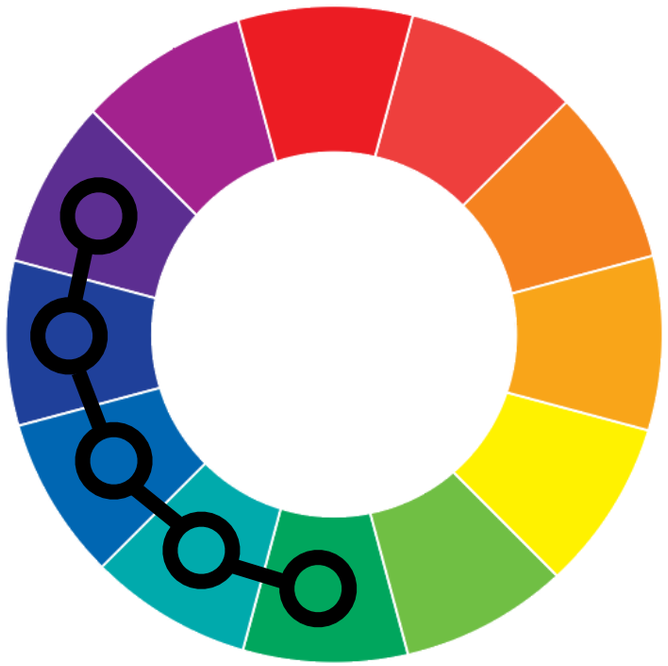
Triadic: Secondary Colors
Green, orange, violet

Triadic: Secondary Colors



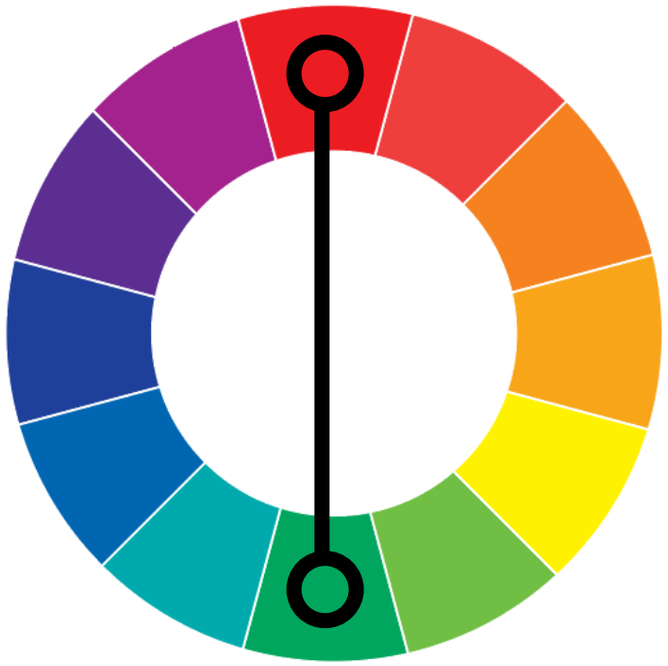
Triadic: Tertiary Colors
Between primary and secondary (e.g., yellow orange, blue-green, red-violet)

Triadic: Tertiary Colors



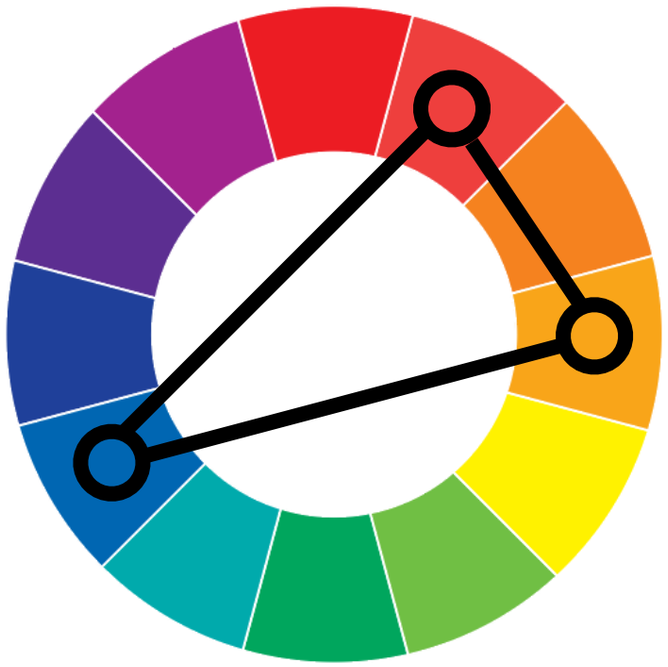
Analogous:
Hues next to each other on the color wheel

Analogous



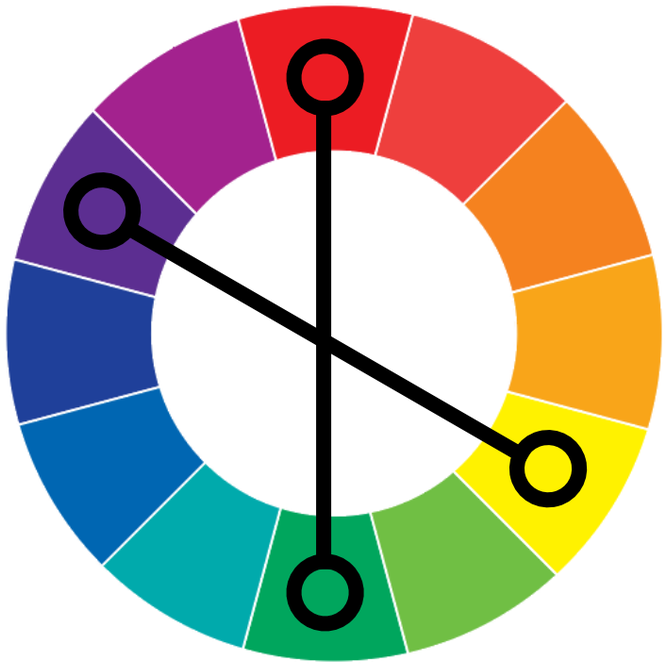
Complementary:
Hues opposite each other on color wheel

Complementary



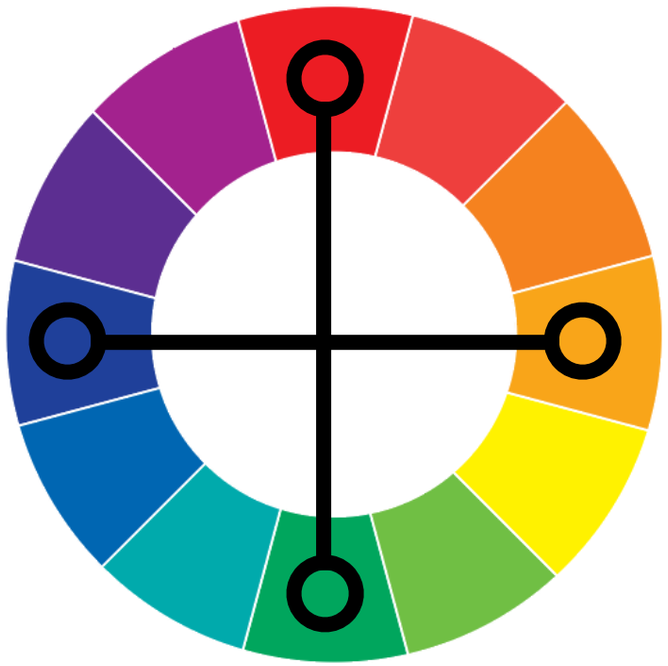
Split complementary:
A hue plus two hues equidistant from the first hue’s complement

Split Complementary



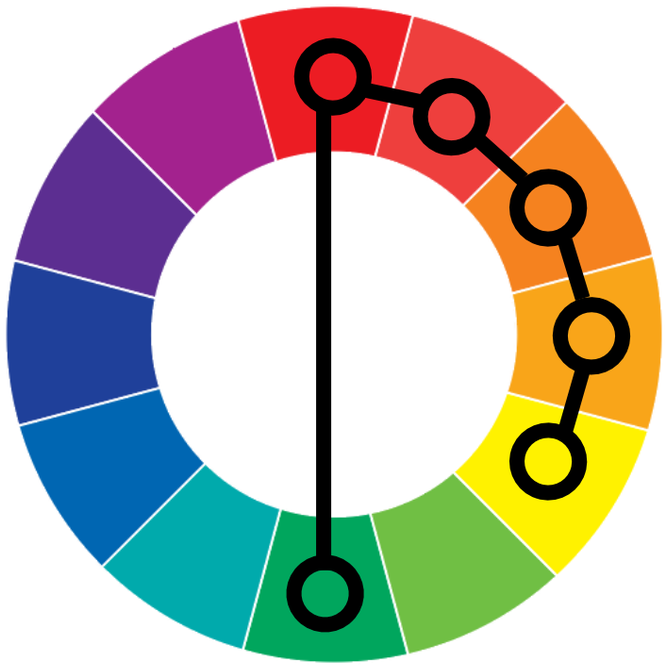
Double Complementary:
Two hues and their complements

Double Complementary



Tetratic:
Two hues and complements equidistant from each other

Tetradic



Accented Analogous:
A hue, its complement and its analogous hues

Accented Analogous

Examples

- **DROUGHT MAPPING** (nice layering of variables)
  - https://adventuresinmapping.com/2016/07/12/five-years-of-drought/

- **RHYTHM OF FOOD** (labelling, color issues)
  - http://rhythm-of-food.net/

- **BROADCAST MAPS** (complementary colors: blue/orange)
  - https://www.behance.net/gallery/27365819/Broadcast-Maps-Package-48S

- **CALENDAR** (bold contrast and use of neutrals)
  - https://www.behance.net/gallery/46229727/Bureau-Oberhaeuser-Calendar-2017

DATA ViSuaLiatiOn

- **THINK OF YOUR DATA AS THE JEWEL**
  - Think of your data as a jewel and all the supporting elements as the band (e.g., labels, datum, key, etc.)

- **CHOOSE A COLOR HARMONY**
  - Always have a color harmony in mind while designing (use it like a key signature in music)
  - Figure out how many variables you need to articulate and the nature of their relationship and pick a color harmony accordingly (e.g., range/trend; extremes/opposites; beginning/end; accent/unicorn element)

DATA ViSuaLiatiOn

- **COLOR IS INFORMATION**
  - Be aware of what you are conveying via color
  - Complementary colors provide the strongest contrast
  - Varying contrast emphasizes or de-emphasizes data
  - Monochromatic harmonies show trend well, because only one attribute of color is changing; the hue/saturation/ temperature is constant and only the VALUE changes; therefore indicating changes in degree
  - Analagous colors indicate similar elements and range, shows greater intensity
  - Neutrals are great for labelling and backgrounds

DATA ViSuaLiatiOn

- **DATA DENSITY**
  - I have noticed that to create interest in a data viz without overwhelming the viewer there is a sweet spot when layering about 3-6 different variables (e.g., time, map, size, color, simultaneous animation)

- **ACCESSIBILITY**
  - Size of text
  - Color contrast
  - Interaction

Resources

- **ADOBE COLOR SCHEMES**
  - https://color.adobe.com/create/color-wheel/

- **BEHANCE**
  - https://www.behance.net

- **COLOR CONTRAST CHECKER**
  - http://webaim.org/resources/contrastchecker/

- **COLOR EXTRACTOR (TINY EYE LABS)**
  - http://labs.tineye.com/color/

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