Color

Nic Aguirre j363 Fall 2018

Today

- **Inspiration**: ColorTheory.ca
- **Lecture**: Color Theory
  - Hue, saturation, lightness, value
  - **Discussion**: Meaning of Colors
  - Color Schemes
  - CSS Color Values
- **Practice**: Building Color Schemes

Inspiration

http://www.colortheory.ca/

COLOR THEORY

What is color?

Color is a profound — possibly the most profound — means of communicating visually.
We have instant, physiological reactions to colors based on a lifetime of observations.

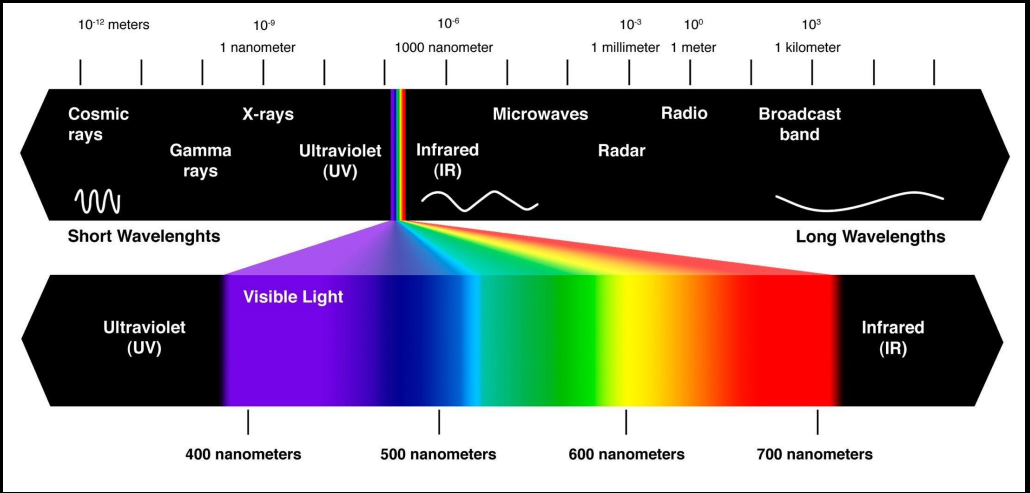
What is color?

An infinite number of colors can be created by altering the three variables of color:

1. hue
2. saturation
3. lightness

Hue

Hue is the identity of colors. It is the distinction of colors based on their wavelengths — in other words, how we perceive light being reflected from objects at particular frequencies.



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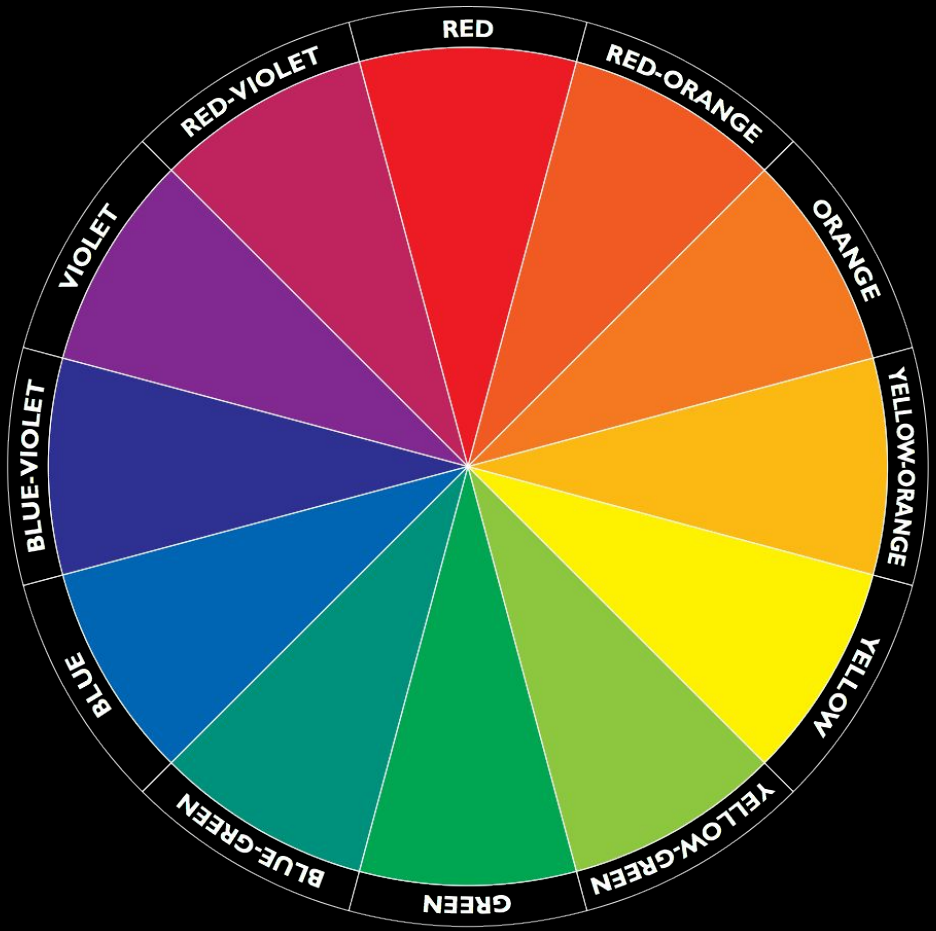
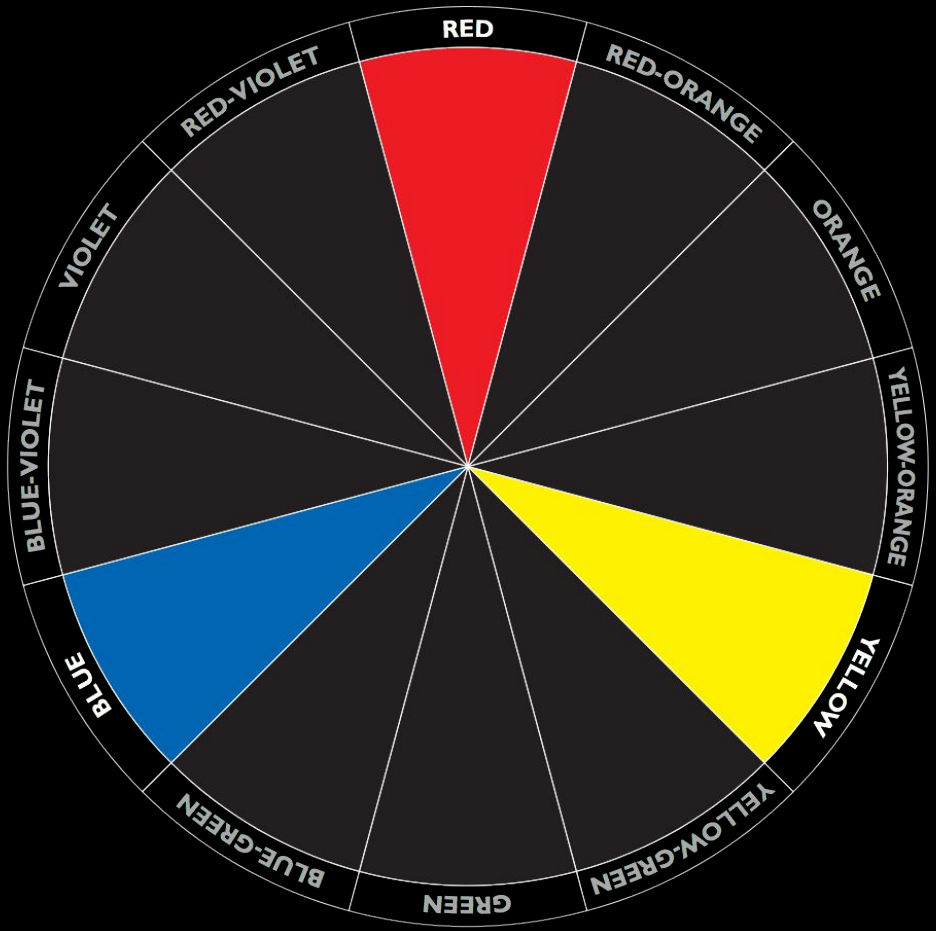


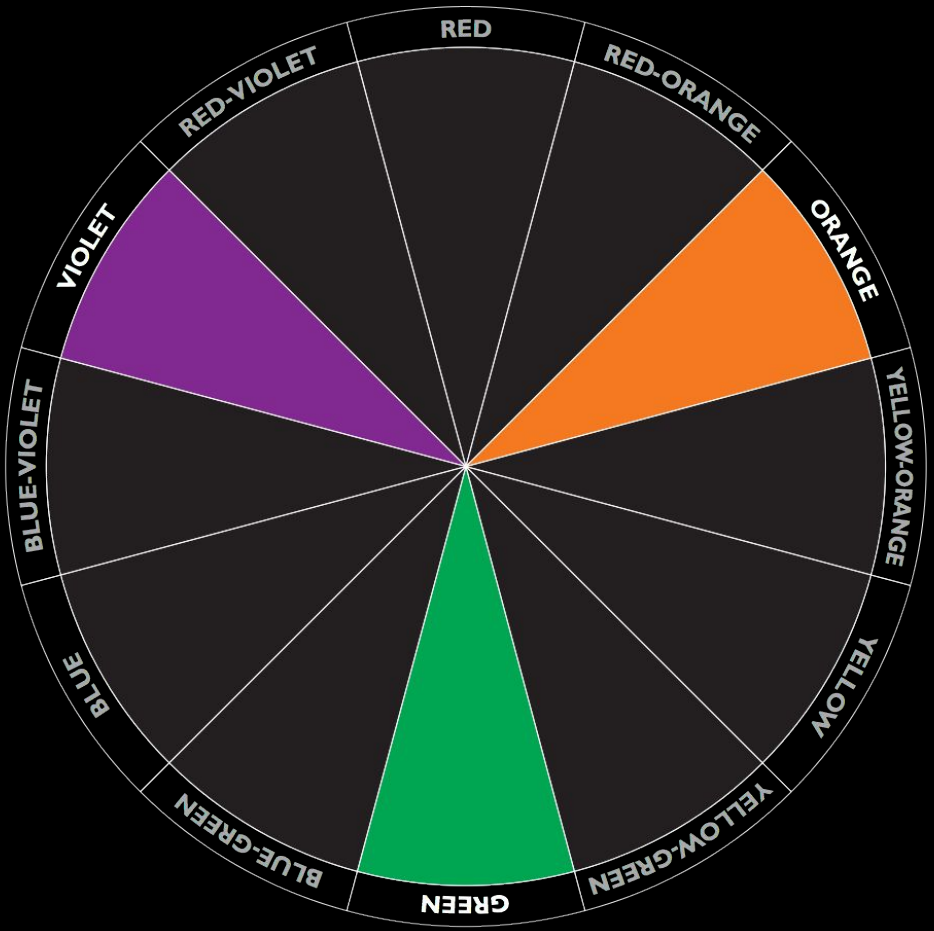
Hue

Primary colors — red, blue and yellow — are the pure absolutes of the color wheel. All other hues are created by a combination of two or three primary colors.



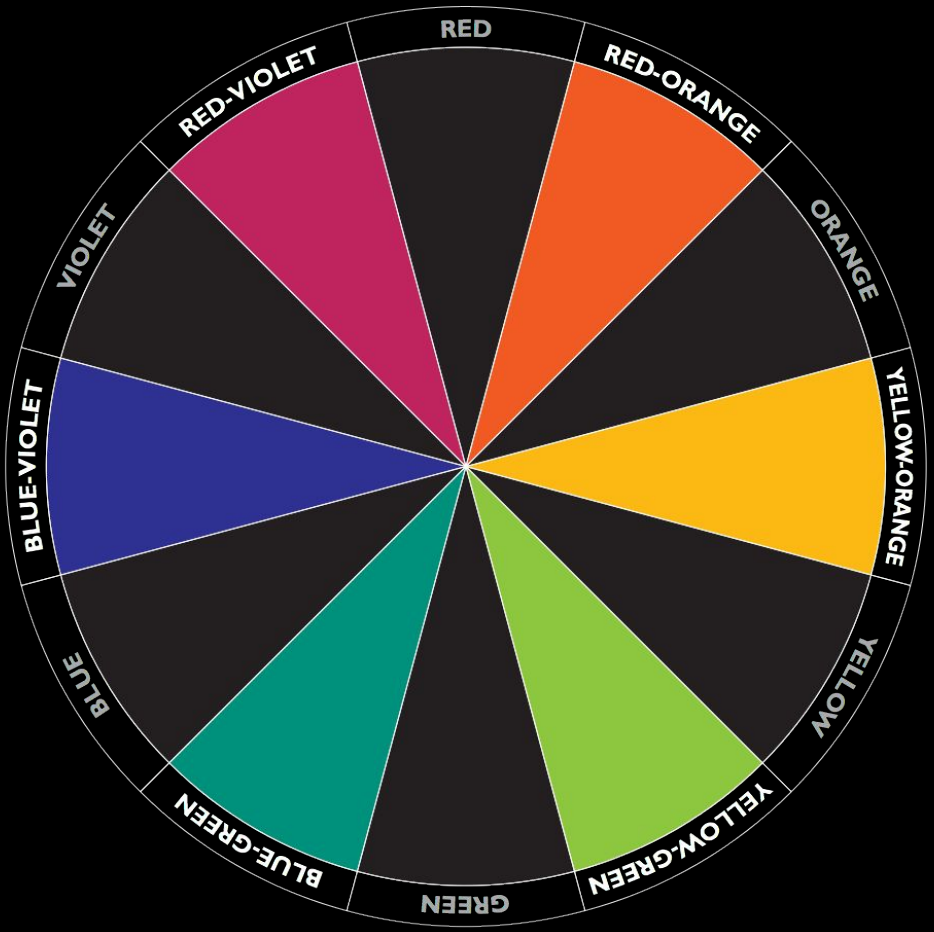
Hue

Secondary colors are positioned halfway between each of the primaries, and are even mixes of those colors.



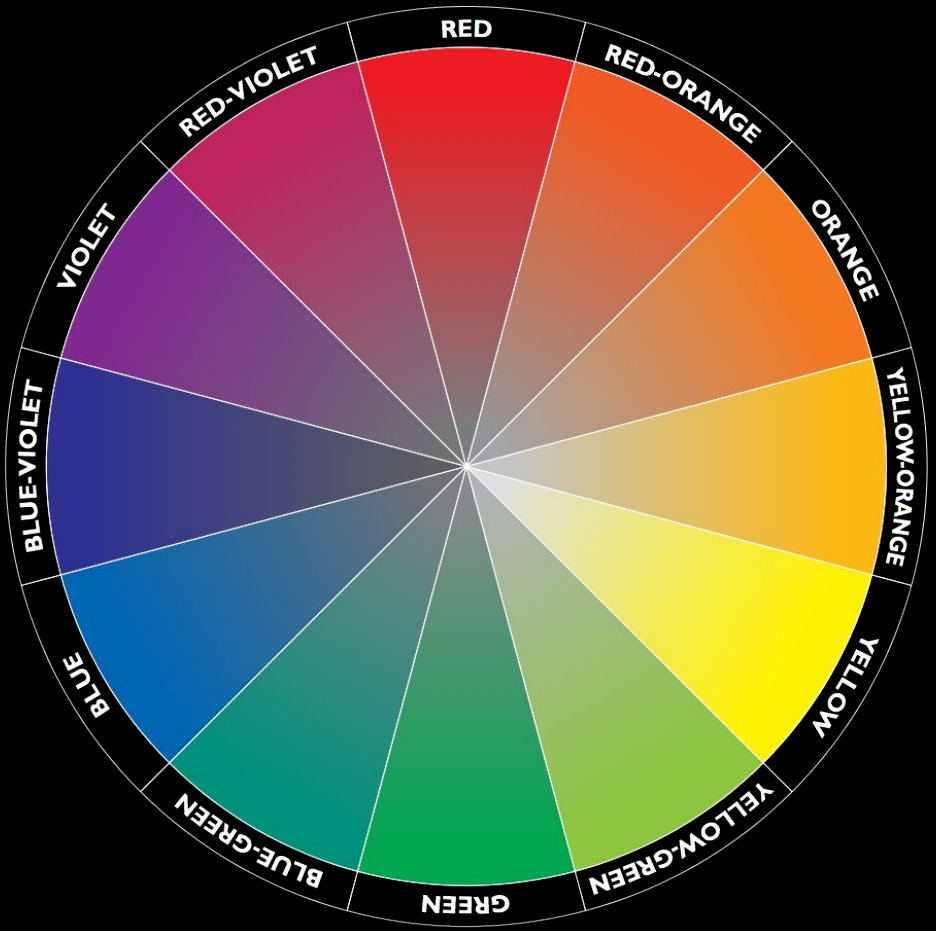
Hue

The tertiary hues are those based on intermixing the primary and secondary hues.



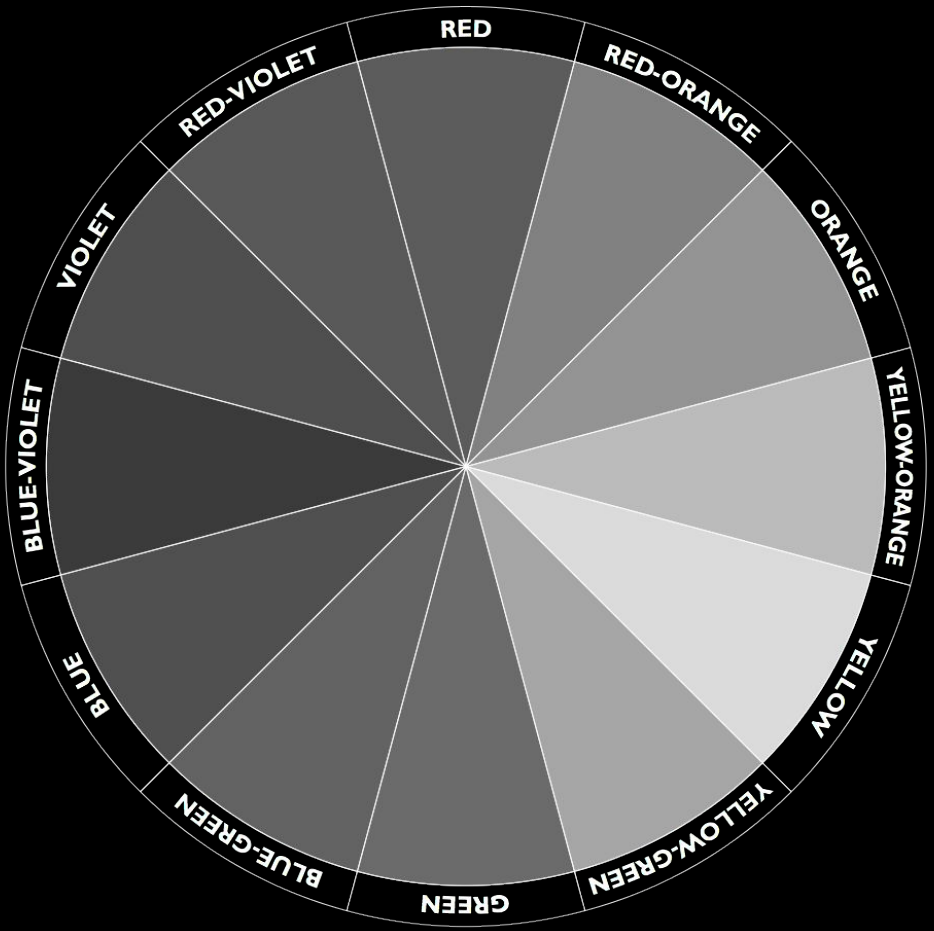
Saturation

A color's saturation is its intensity, or brilliance. Bright colors are said to be saturated, whereas dull colors are desaturated. Desaturated colors are created by adding gray or by a color's opposite on the color wheel.



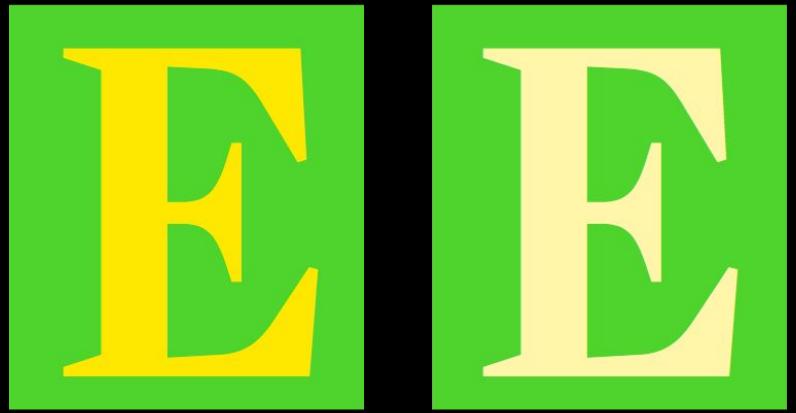
Value

Value is a color's intrinsic lightness or darkness. Yellow is perceived as being light, for example, while blue-violet is thought of as dark.



Value

Value establishes the contrasts in a composition. The greater the difference in values between two colors, the easier it is to distinguish them.
(A good way to see and understand color values is to squint at something.)



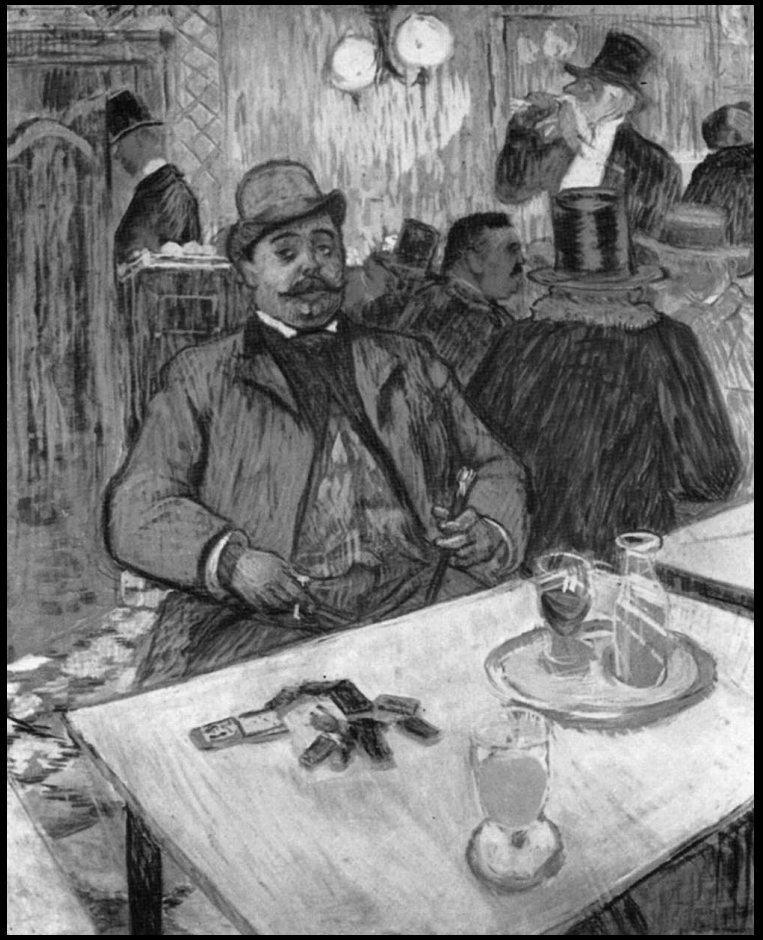
Value

In this image, the colors are heavily saturated: vivid, lurid and electric.

Henri de Toulouse-Lautrec: *Monsieur Boileau at the Café, 1893*

Value

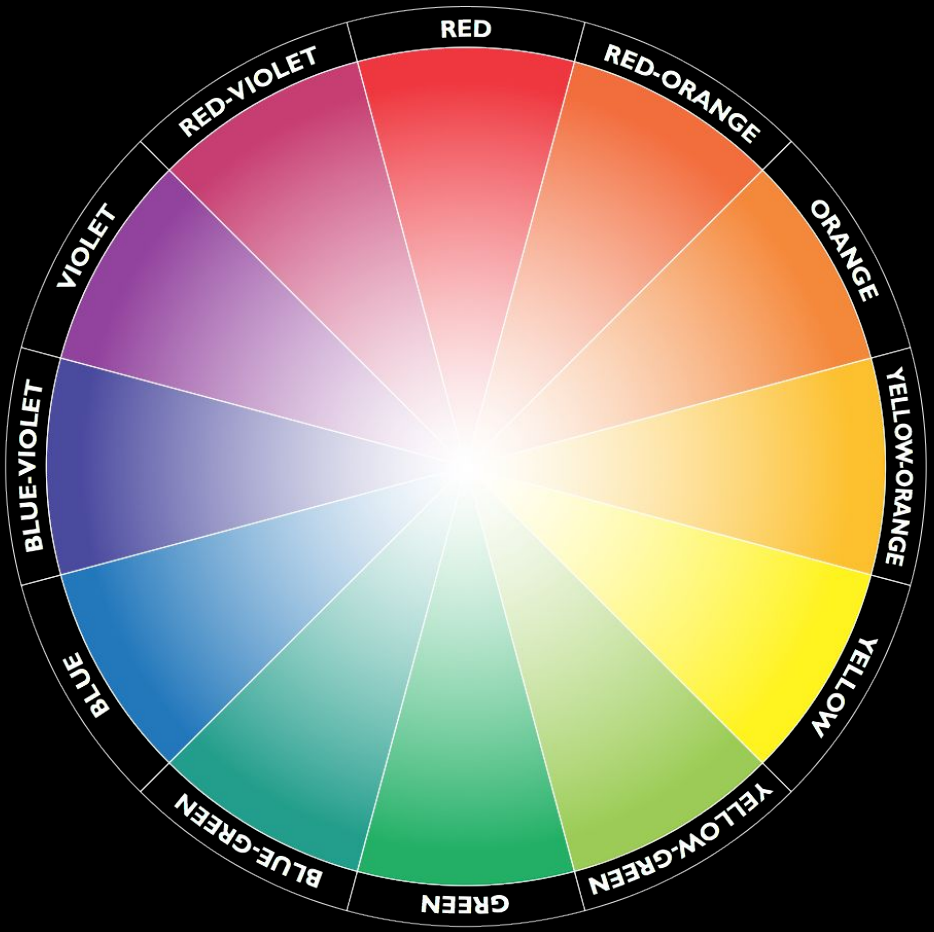
In this image, the colors are heavily saturated: vivid, lurid and electric. But in this version, the image is completely desaturated, removing all chromatic qualities. What remains is an illustration of how *value* creates the image.



Henri de Toulouse-Lautrec: *Monsieur Boileau at the Café, 1893*

Lightness

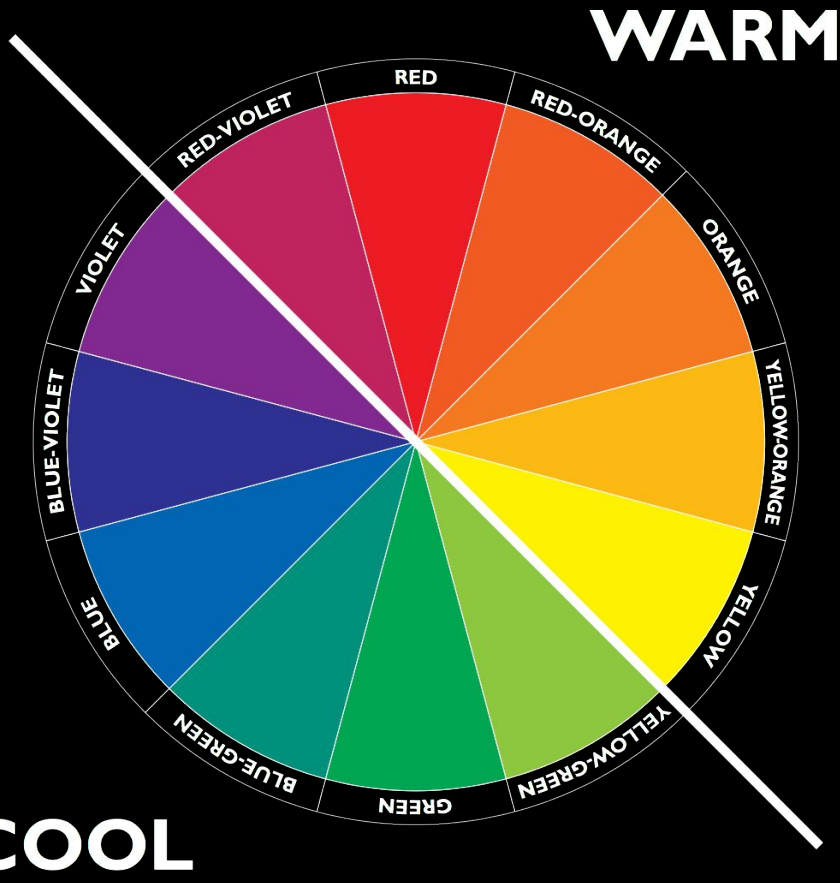
Tints of colors are created by adding white to them.



TEMPERATURE AND MEANING

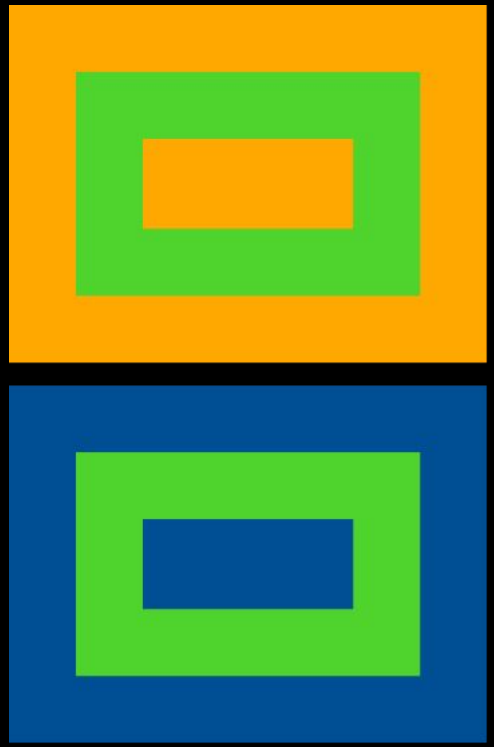
Warm or cool?

A color's "temperature" is a subjective quality.
Warm colors — reds and oranges — remind us of warm environments, while the cool side of the spectrum — greens and blues, bring to mind cold experiences.



Warm or cool?

Our perception of warm vs. cool can be affected by a color's relativity, or its relationship to nearby colors. For example, a cool green warms up considerably when placed next to a much cooler blue.

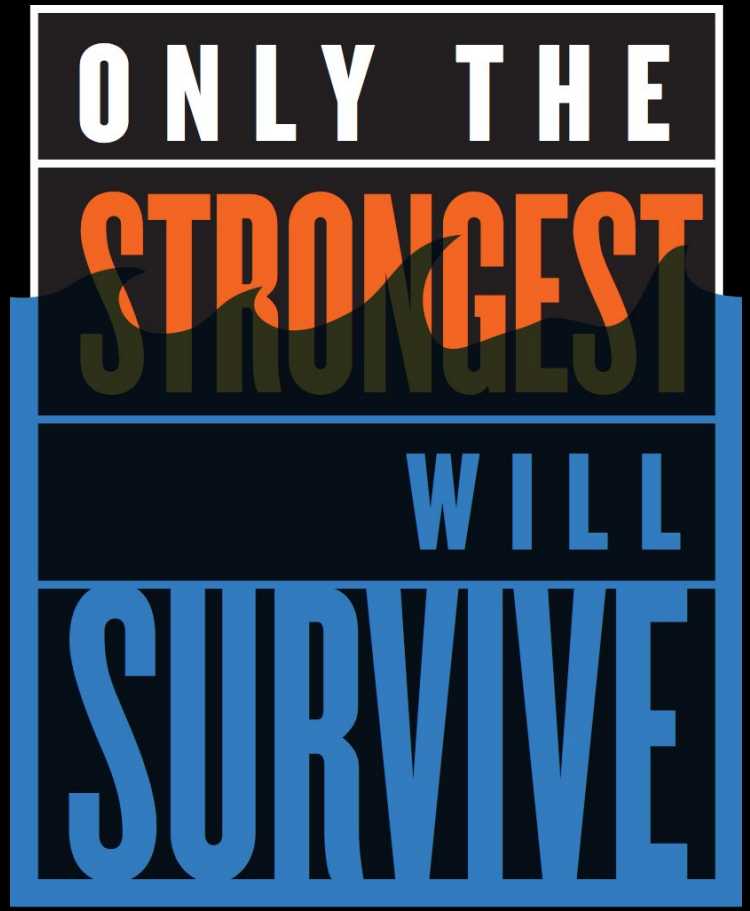


Warm or cool?

In design, warm colors are aggressive and vivid, and come forward.

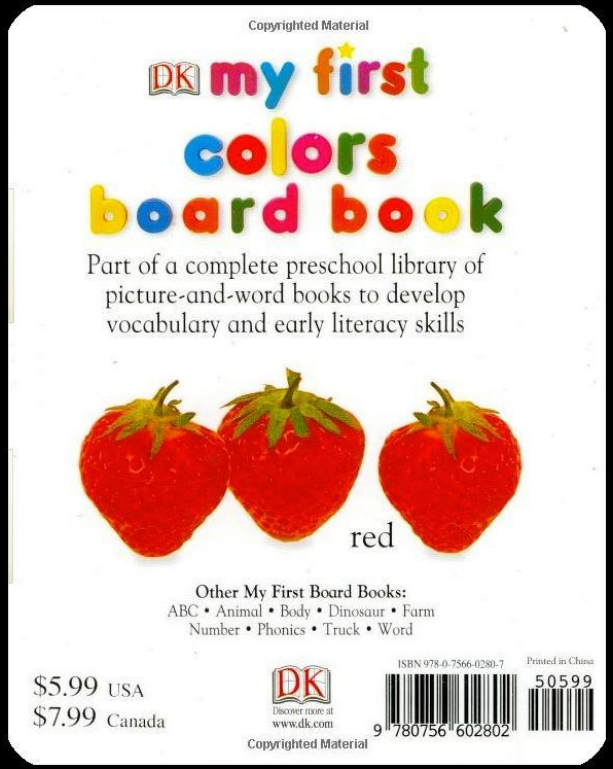
Cooler tones are more passive and recede.

As a designer, you can use this to your advantage.



What do colors mean?

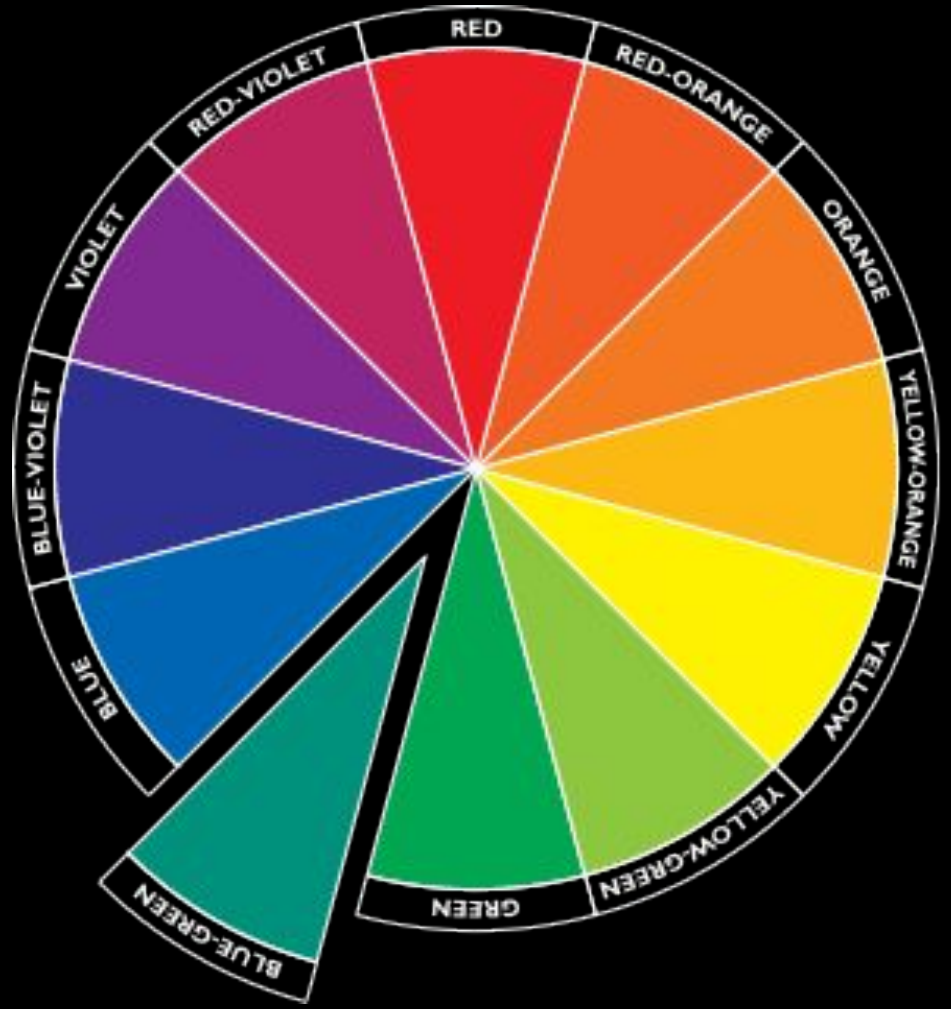
We are conditioned from early life to create associations based on color.



COLOR SCHEMES

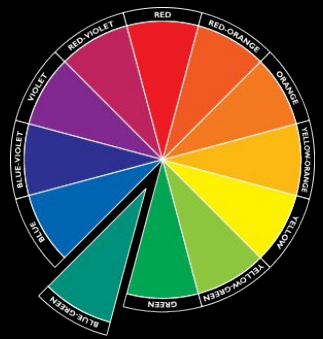
Combining colors

Creating attractive and harmonious combinations of colors is a skill that one can hone over a lifetime.
Here are a few simple methods for beginning to create combinations based on the color wheel.



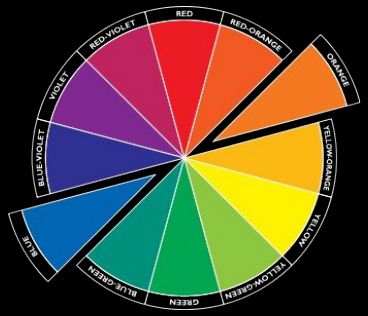
Combining colors

Monochromatic color schemes are created by using various tints or saturations of a single hue.



Combining colors

Complementary colors are those that are opposite on the wheel. They might best be used in combination with a black or gray.



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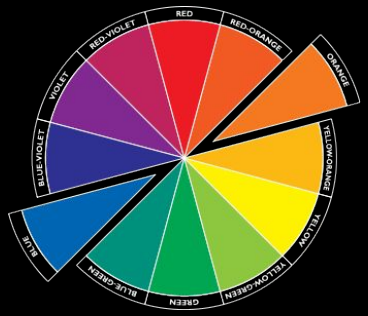

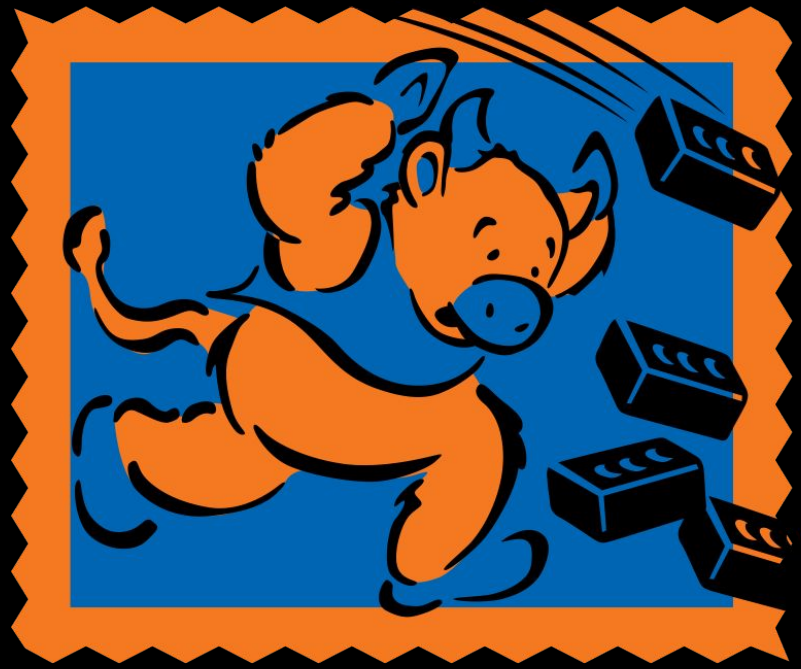

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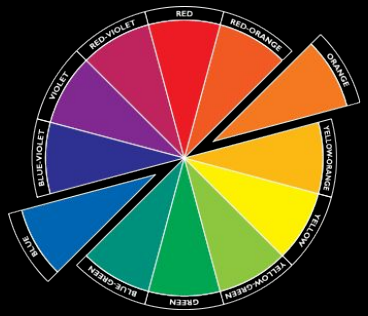
Complementary colors are those that are opposite on the wheel. Often, you'll have to adjust the tints of complements so they don't blend together.



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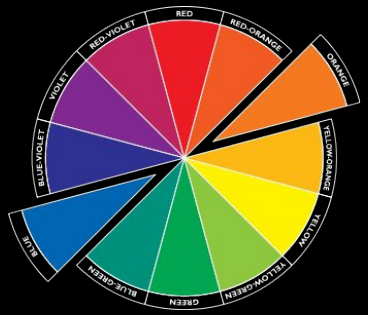
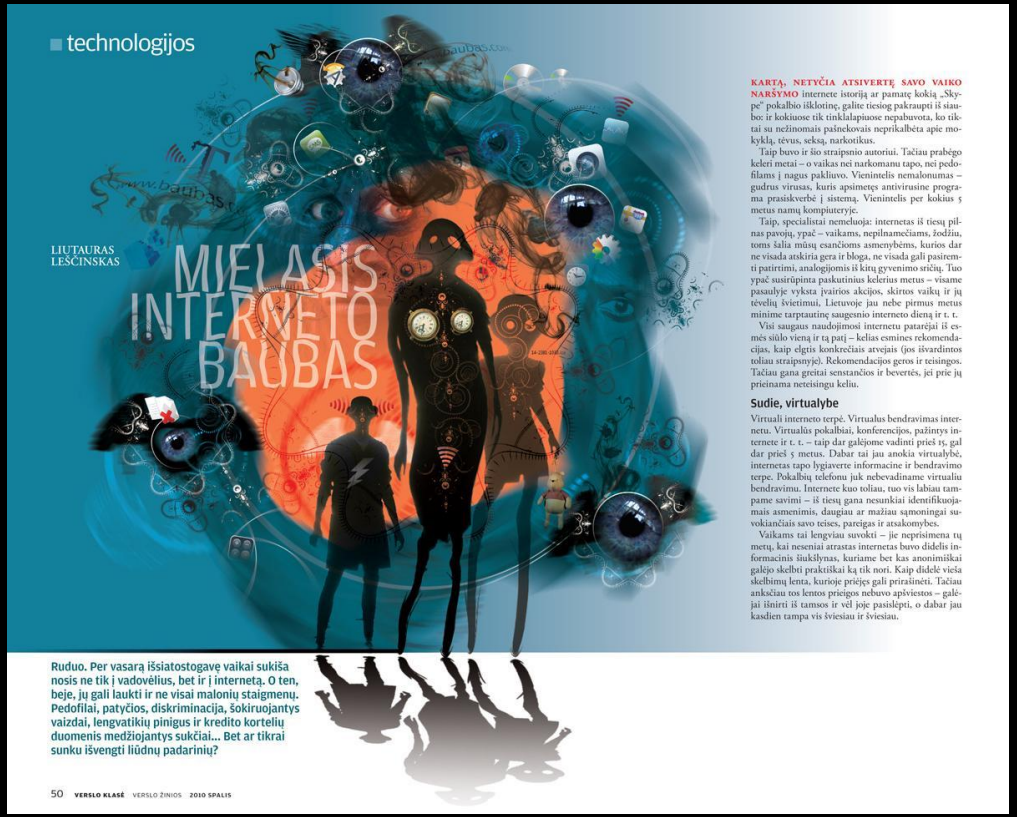
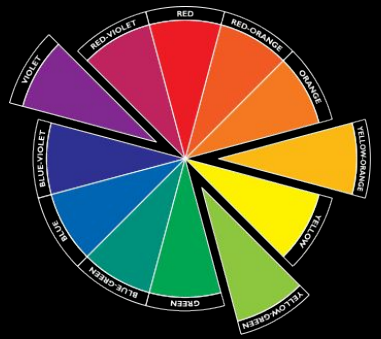




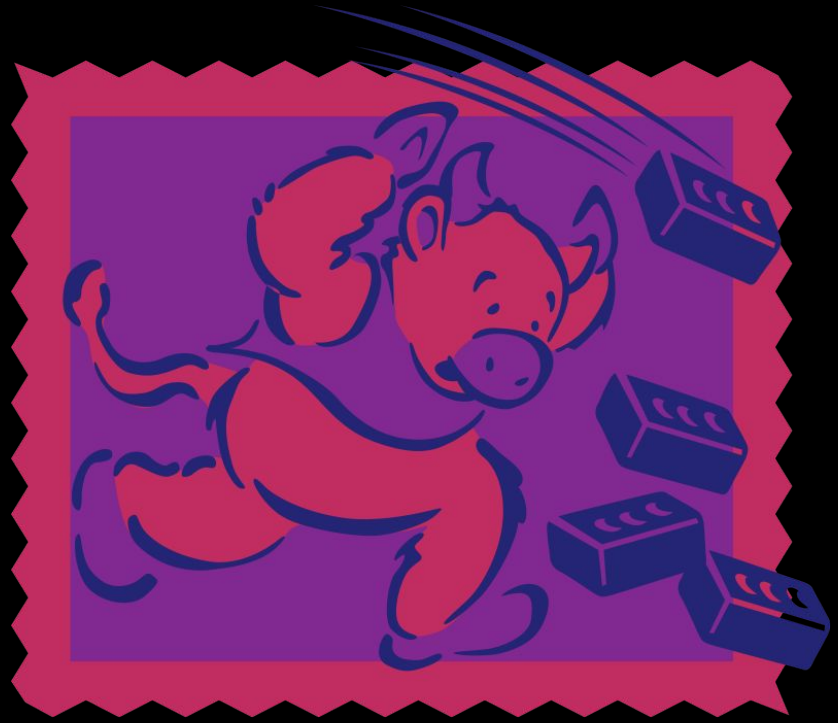
Combining colors

Split complements are created by combining a color with the two colors on either side of its complement.



Combining colors

Analagous palettes are created by using three hues that are next to each other on the color wheel.



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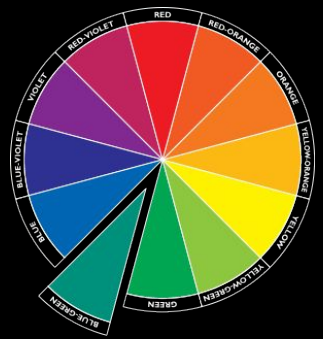

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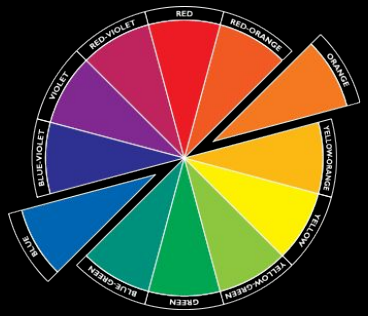

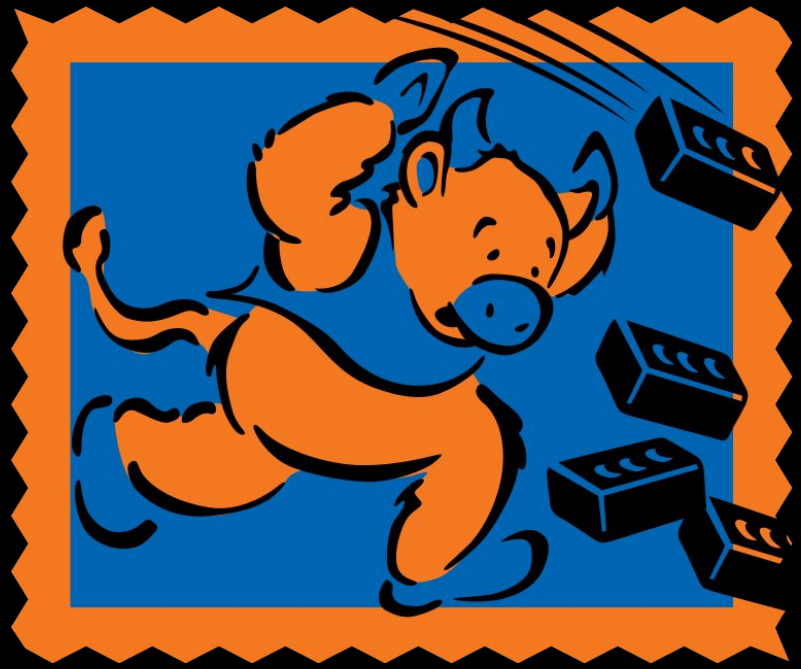

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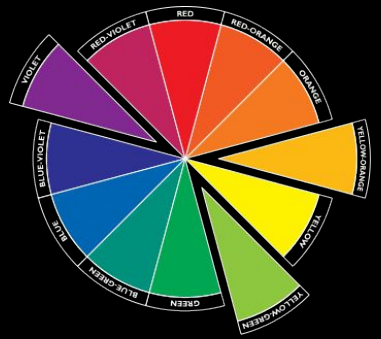

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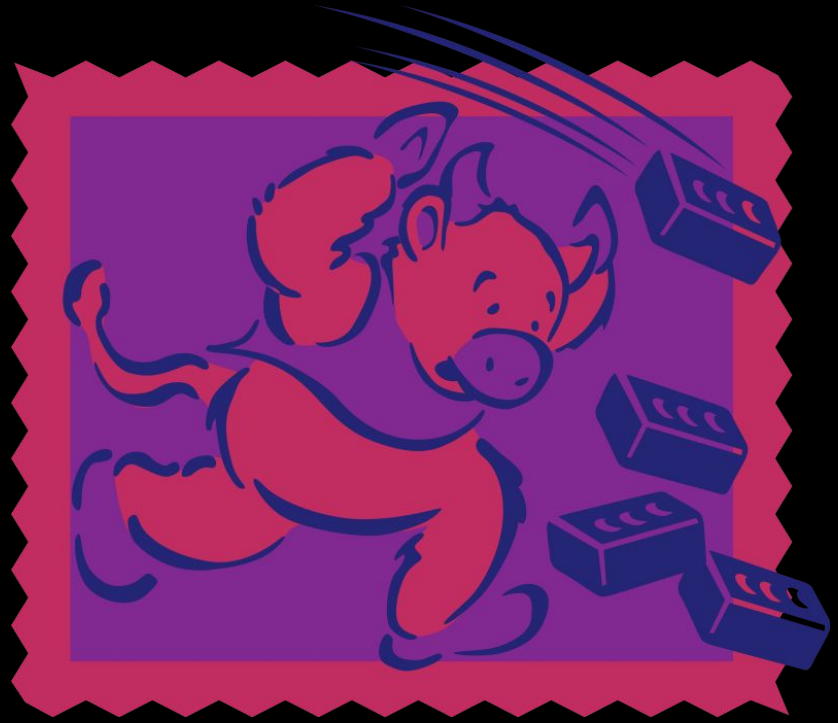
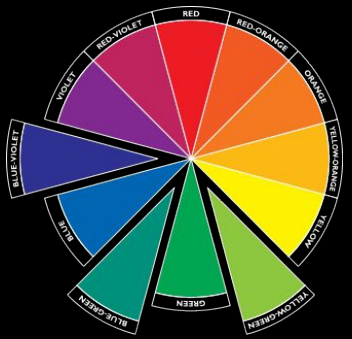


Combining colors

A variation of the analagous scheme is to use every other color on the wheel to create a palette of three colors.



Combining colors

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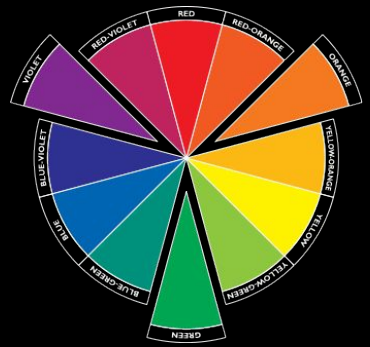
Combining colors

Triads are any three equally spaced colors on the wheel. Here, variations in value and saturation are often necessary to create adequate contrast (and a more sophisticated palette).



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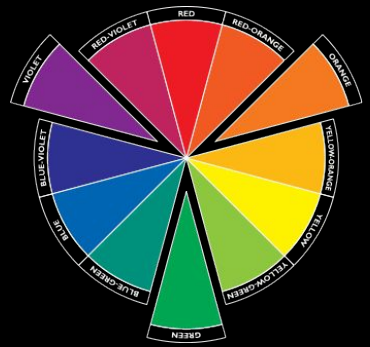
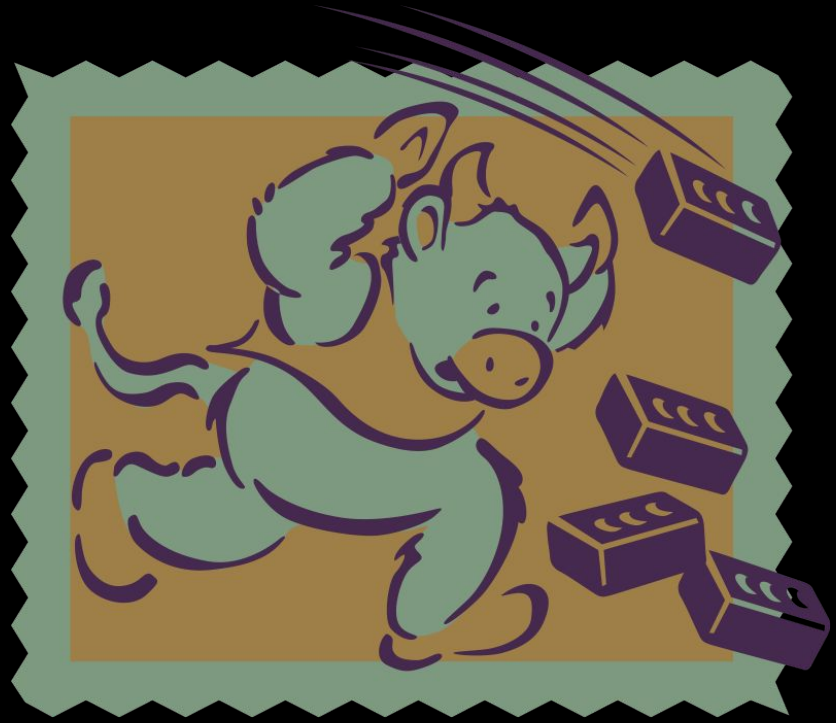




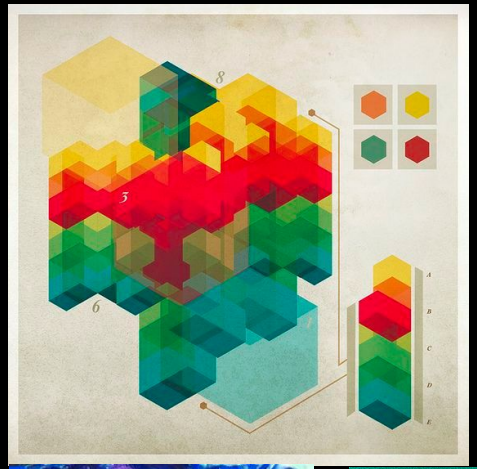
My method

Building color schemes can be very helpful. I usually start by looking for inspiration in the work of others.

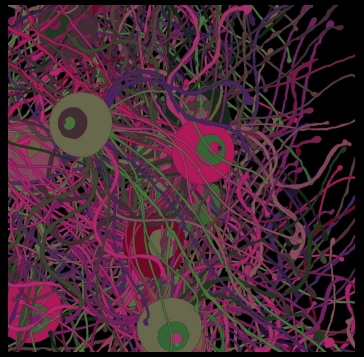
My suggestion - make a Pinterest account and build a mood board for the project you're working on.

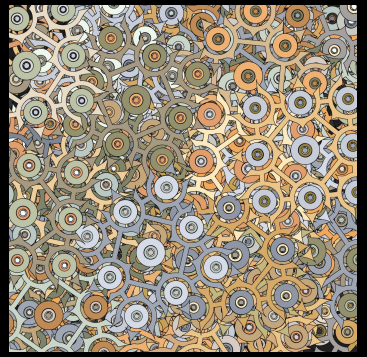
Pin images that have interesting color schemes or designs that you want to capture in your own work, and refer to them.

As a fledgling designer, this approach will quickly give you insight as to how other designers work.



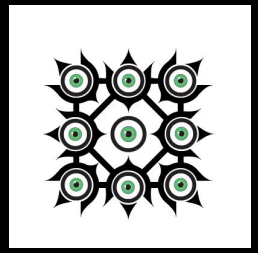
Application — Generative Art

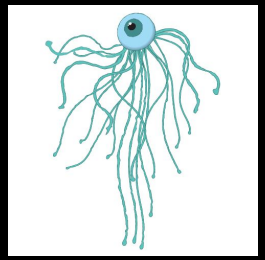




Process

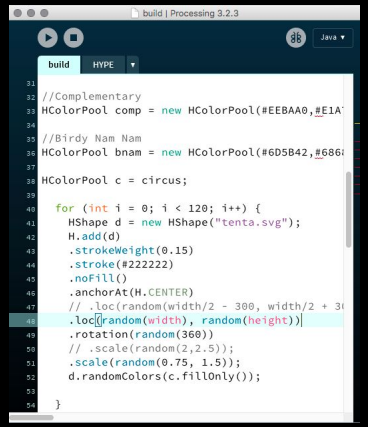
1. Static assets



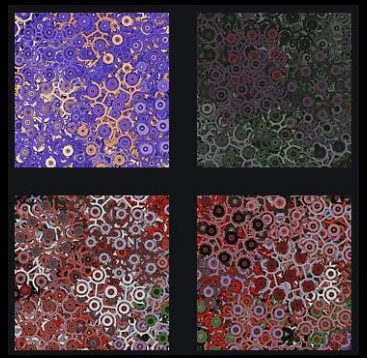


2. Color Scheme

3. Code



4. Iterate



My albums:

https://imgur.com/a/MMKIM/layout/grid

https://imgur.com/a/gIWh9/layout/grid

https://imgur.com/a/hUOgX/layout/grid

CSS Color Values

CSS Color Values

- Named CSS values
- rgb
- hsl
- hex values
- alpha values (opacity)
  - rgba
  - hsla

Named CSS Colors

Color Name	Color
AliceBlue	
AntiqueWhite	
Aqua	
Aquamarine	
Azure	
Beige	
Bisque	
Black	
BlanchedAlmond	
Blue	
BlueViolet	
Brown	

Named CSS Colors

```
<h1 style="background-color:Tomato;">Tomato</h1>
<h1 style="background-color:Orange;">Orange</h1>
<h1 style="background-color:DodgerBlue;">DodgerBlue</h1>
```

rgb value

In HTML, a color can be specified as an RGB value, using this formula:

rgb(red, green, blue)

Each parameter (red, green, and blue) defines the intensity of the color between 0 and 255.

For example, rgb(255, 0, 0) is displayed as red, because red is set to its highest value (255) and the others are set to 0.

rgb values


rgb(255, 0, 0)
rgb(0, 0, 255)
rgb(60, 179, 113)
rgb(238, 130, 238)
rgb(255, 165, 0)
rgb(106, 90, 205)

HSL value

In HTML, a color can be specified using hue, saturation, and lightness (HSL) in the form:

hsl(hue, saturation, lightness)

Hue is a degree on the color wheel from 0 to 360. 0 is red, 120 is green, and 240 is blue.

Saturation is a percentage value, 0% means a shade of gray, and 100% is the full color.

Lightness is also a percentage, 0% is black, 50% is neither light or dark, 100% is white

HSL value


hsl(0, 100%, 50%)
hsl(240, 100%, 50%)
hsl(147, 50%, 47%)
hsl(300, 76%, 72%)
hsl(39, 100%, 50%)
hsl(248, 53%, 58%)

hex value

In HTML, a color can be specified using a hexadecimal value in the form:

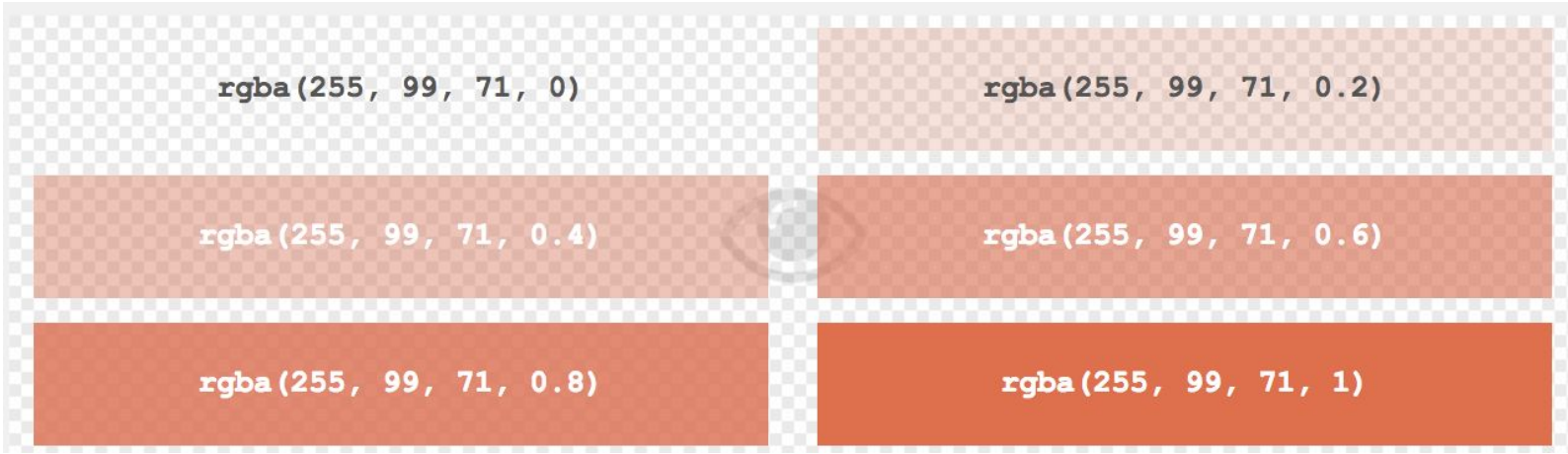
#rrggbb

Where rr (red), gg (green) and bb (blue) are hexadecimal values between 00 and ff (same as decimal 0-255).

For example, #ff0000 is displayed as red, because red is set to its highest value (ff) and the others are set to the lowest value (00).

hex value

opacity— rgba()

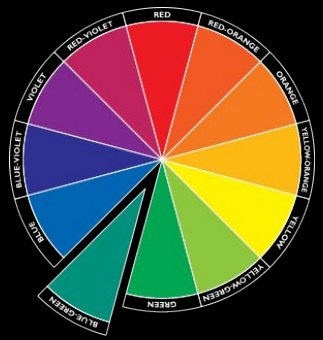


opacity— hsla()

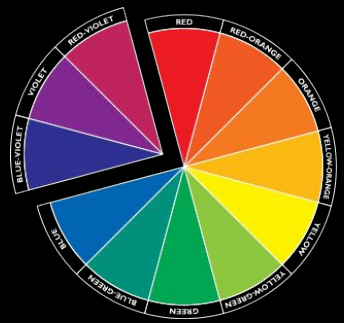
Practice: Building Color Schemes

Download 7.1-color.zip

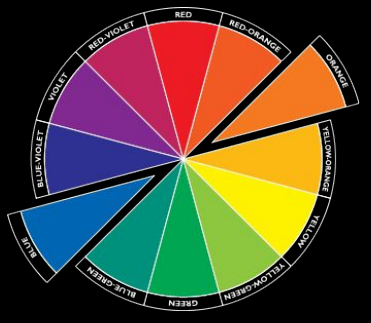
Monochromatic



Analogous



Complementary



Color Tools

I recommend these resources:

- https://color.adobe.com/create/color-wheel/
- https://pigment.shapefactory.co/
- https://coolors.co/browser/
- https://colorhunt.co/?ref=dribbble&shot=search_feature
- https://mycolor.space/
- https://uigradients.com/