

Color theory

On a basic color wheel we can see:

Primary colors: yellow, red and blue. Those cannot be mixed.

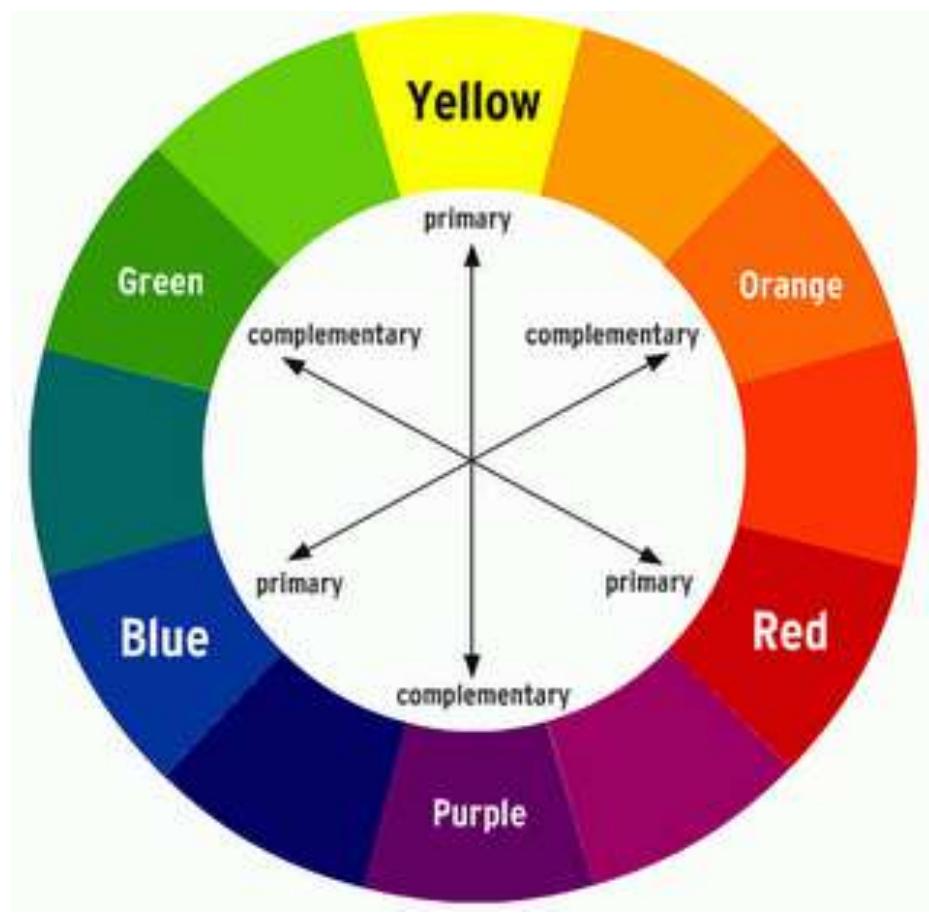
Secondary colors: Those can be mixed from two primaries.

Yellow + Blue: green

Red + blue: purple

Red + yellow: orange

Complementary colors: Colors which are opposite each other on the color wheel. When placed next to each other, they create the strongest contrast for those two colors, so are often used by artists to create striking images (see examples bellow the color wheel)

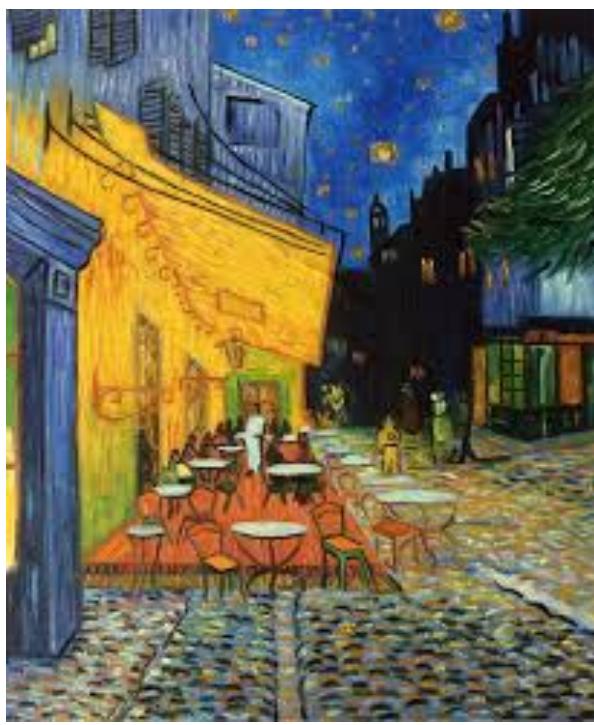


Examples of complementary color contrasts.

Blue + orange by Monet



Blue + orange by Van Gogh

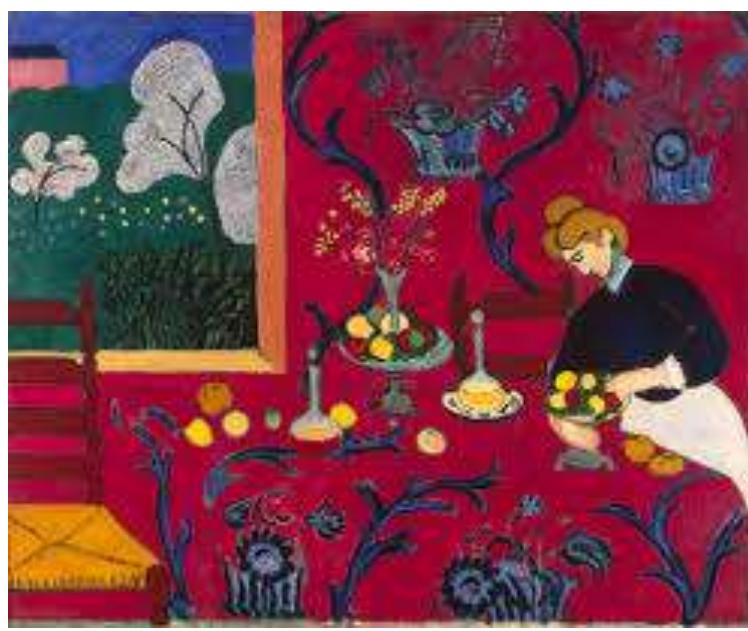


Red + green

Kim Blair



Matisse



**Purple + yellow
Monet**



Color temperature

What is Color Temperature?

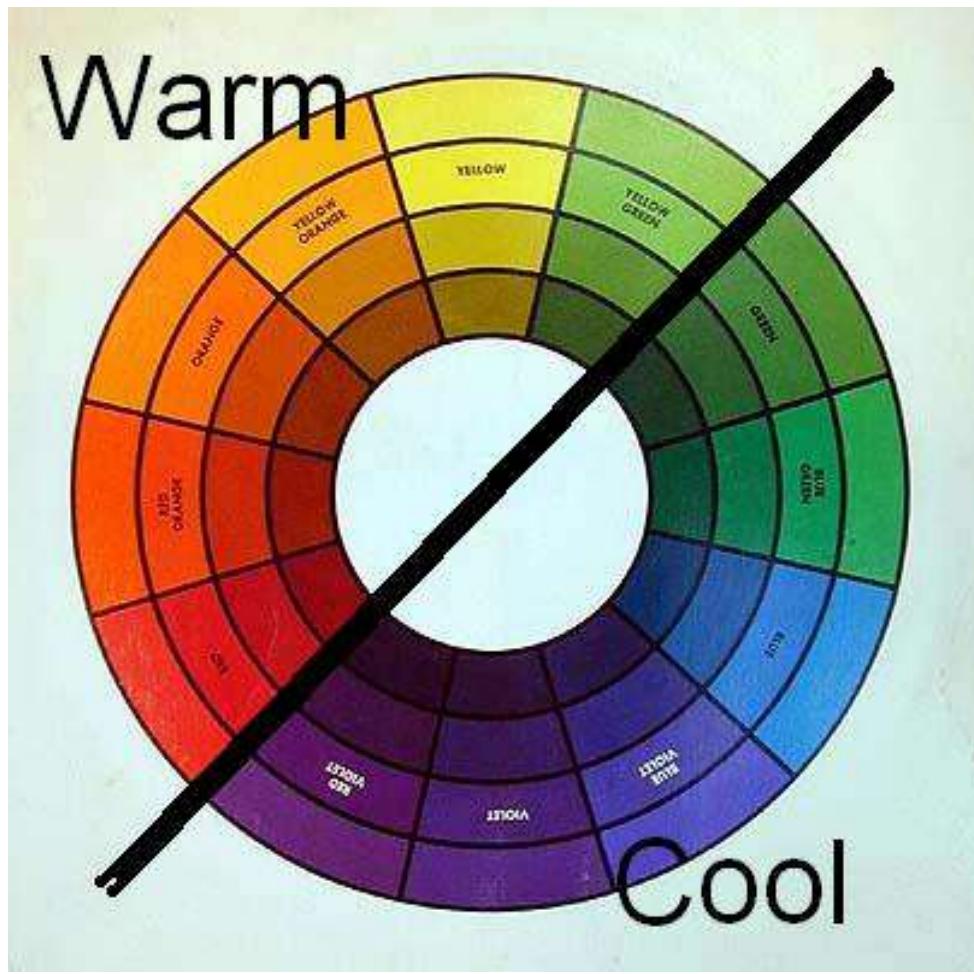
Temperature is the relative warmth or coolness of a color.

Let's take a look at the colors on the wheel below.

Yellow or any color with yellow as a predominant component is considered warm.

Any blue or color predominantly blue is considered cool.

Red looks like it's in the middle of the temperature scale, and its temperature is relative to the colors next to it. It's cooler than yellow, but warmer than blue.



The Power of Color Temperature

For beginner painters, understanding color temperature and learning how to control the temperature of the colors you mix can improve dramatically the quality of the paintings.

Controlling temperature, you'll be able to:

- Create depth
- Create a sense of sunlight
- Define relationships between different objects and parts of the same object
- Establish a specific mood for your painting
- Convey dimensionality of the objects

Illusion of Space

As you paint, you are trying to create the illusion of a 3D space on a 2D surface. Create an immediate appearance of distance and depth by using color temperature to your advantage. Include warmer colors in the foreground and cooler colors in the background.

If you paint the background warm, it will compete with the foreground and fight to come forward, pushing back any cooler objects in front of it. Sometimes things at the horizon are really yellow and it's tricky to make a decision on how to render them in a way that they do fall back and look far away. Usually, making them lighter and duller than the foreground solves the problem.

Illusion of Form

Also, warm colors appear to expand while cool colors appear to contract, changing the way our brain perceives sizes.

If you know your drawing is correct but the proportions seem off, try tweaking the color temperature. Warm up the area that looks too small and cool down what seems too big.

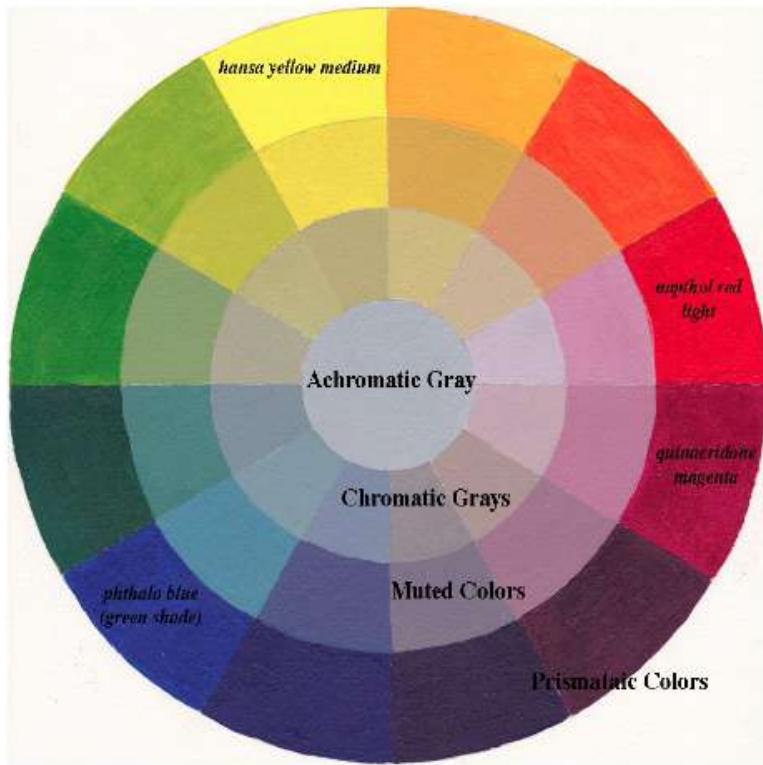
Warm Colors Advance and Cool Colors Recede.

In painting, we are facing the tough challenge of trying to represent a 3D scene on a 2D surface.

For a successful representation of depth in your painting, consider that warm colors advance and cool colors recede. This is a very important understanding when you are painting distance.

The scientific explanation for this is that the wavelength of warm colors are warm and are seen sooner by our eyes, while cool colors have shorter wavelengths and are seen later.

Understanding Hue, Value and Chromatic Intensity.



1. **HUE:** In painting color theory, a hue refers to a pure color – one without white or black pigment added to it. Color and hue in painting mean the same thing to most artists. The primary hues are red, yellow and blue. They are called primaries because every other color (hue) can be made from them. Secondary hues are mixed from the primaries. Secondary colors are made from any two primaries. Notice I said “any two primaries” not any of the three primaries mixed together. These are orange, green and purple. Red and yellow make orange. Yellow and blue make green. Red and blue make purple. Tertiary colors are made from all three primaries. Another term for a tertiary color is called a GRAY. I use the term grey instead of tertiary. A flat neutral grey is made from using all three primaries in order to get a pure, neutral flat grey. Greys can also be very colourful like blue grey, red grey, green grey, etc. The color or hue of a grey can be as intensely bent toward any of the primary or secondary colors as you wish, it is still classified as a grey because it contains all three primaries.
2. **VALUE:** The lightness or darkness of a color. Another term for Value is TONE. It has nothing to do with color or hue. It's how

light or dark the color is with the color removed. It's the blackness or whiteness as if seen in a grey scale reproduction. In fact, you can compare values in a painting by taking a black and white (grey scale) photo of your painting. I do that with Photoshop by taking a color picture with my camera and then turning it to grey scale mode. The highest or lightest value is pure white. The lowest or darkest value is pure black. Artists often divide the scale into 10 gradations from white to black. High value is more toward white. Low value is more toward black.

3. **CHROMATIC INTENSITY:** The intensity of the color or hue. Tube paints like cadmium red, cadmium yellow or ultramarine blue (the primaries) are considered the highest chromatic (also called Chroma) intensity or alternatively, the maximum color saturation. A pure flat grey is considered the lowest chromatic intensity. You can decrease the chromatic intensity of any pure color by adding grey. For instance, to decrease the chromatic intensity of cadmium red and still keep the hue the same you can add neutral grey to it. That's why I mix several values of a flat neutral grey and use them with any hue to decrease the chromatic intensity. Adding a high value neutral grey to red still keeps it red, but its intensity decreases and raises the value. Adding a very dark neutral grey to cadmium red will still keep the red hue but make a lower value red with less intensity.
Examples of using hue value and chromatic Intensity with depth recession in a painting. Notice the handling of value differences, chromatic intensity and hue in the near vs. far similar type objects (rocks cliff faces):

4.



How do you use hue value and intensity in a painting in relation to value planes, recession and light/shadow? The short answer is: the more a painting recedes into the distance, the value planes at that distance get lighter in value and the chromatic intensity decreases. Also the values get closer together as distance increases. The sunlit area of a painting is of course higher in value than the shadows on the same plane. Hues in sunlit areas on the same type of plane are higher in value than the same hues that transitions into a shadow area. In a shadow area the reflection from the sky alters the hues somewhat. They get bluer in shadow on a cloudless day. Greener on an overcast cloudy day (that's a different subject and I'll write an article about that later).

When I analyse an object in a plein air scene that I want to paint, I think of what value hue and chromatic intensity is it and how that relates to closer and farther objects that are similar. A pine tree in the foreground has much more chromatic intensity and lower values than the same type of pine tree a quarter mile away. Learning to think like this will speed up your learning curve dramatically.