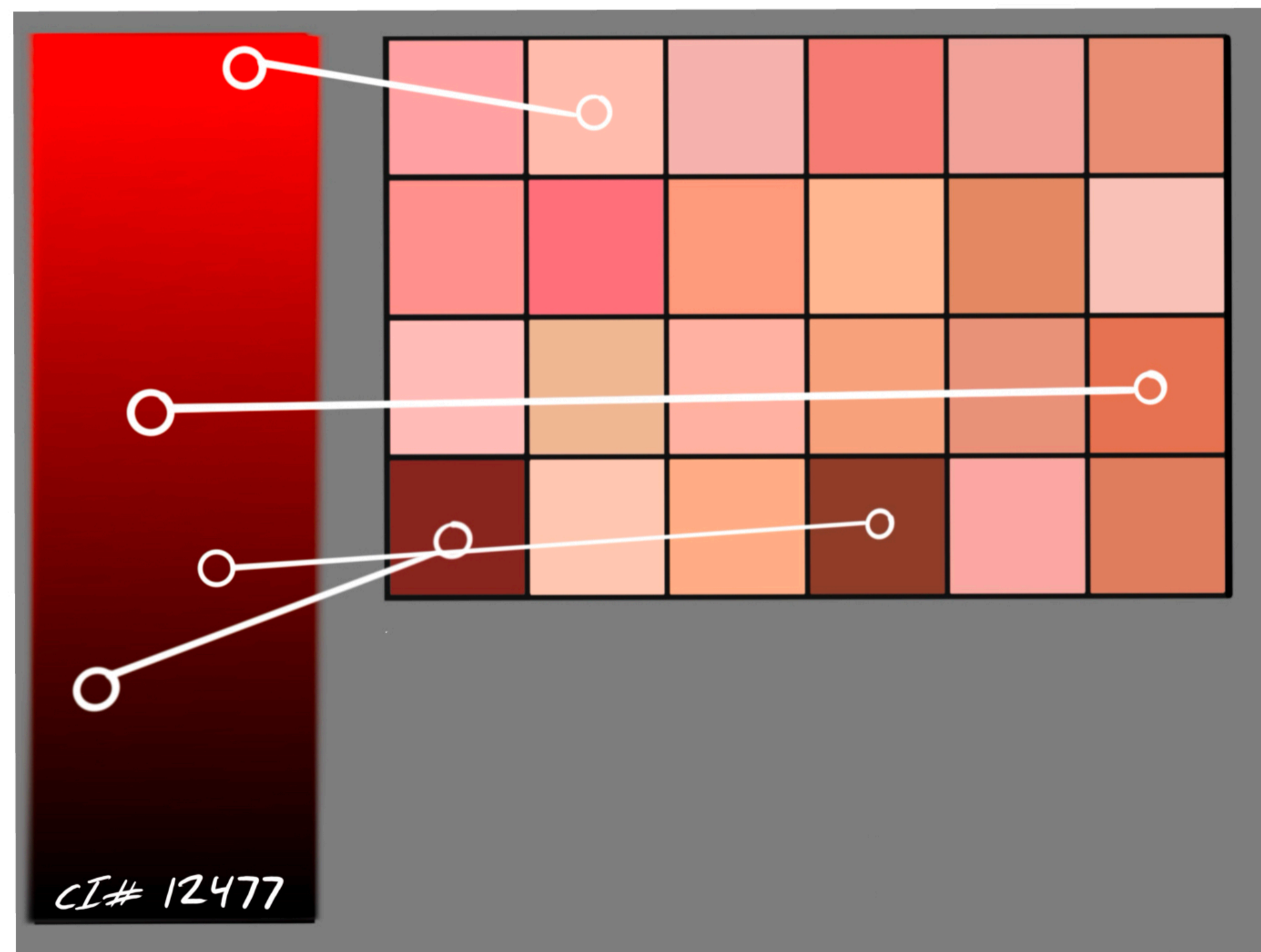


# Color Mapping For Any Skin Tone



## Here's how it works:

Take a photo of your clients skin in different light sources. Using that photo, you can approximate the "values" of healed color work in a clients skin. This applies to color and black/grey tattoos.

The values associated with a color are limited by the values already established by the client's skin tone. Using a basic X-Y plotting of a classic color selection tool you can approximate what colors will look best before choosing the palette for a design.



← Pantone  
Skin  
Color  
Chart



**Every person has a unique skin tone. There is not one “fixed” color to define a person’s skin. This makes using a traditional color chart (like the Pantone\* skin tone chart) obsolete.**

**Take into account the fact that light source changes with the environment. Different places have different color profiles based on the lights used (natural or artificial), the time of year when being photographed, colorants used on the walls, the clothing associated with the image space, along with many other potentials. The environmental influence changes what we call the “observed color” of what is being photographed or viewed. This is why so many people take such great strides to “edit” their photos before posting them online. Their efforts can produce a photo that is amazing in some cases, extraordinary in others.**

**We can shift this effort a little to achieve better longevity alongside a better tattoo outcome.**

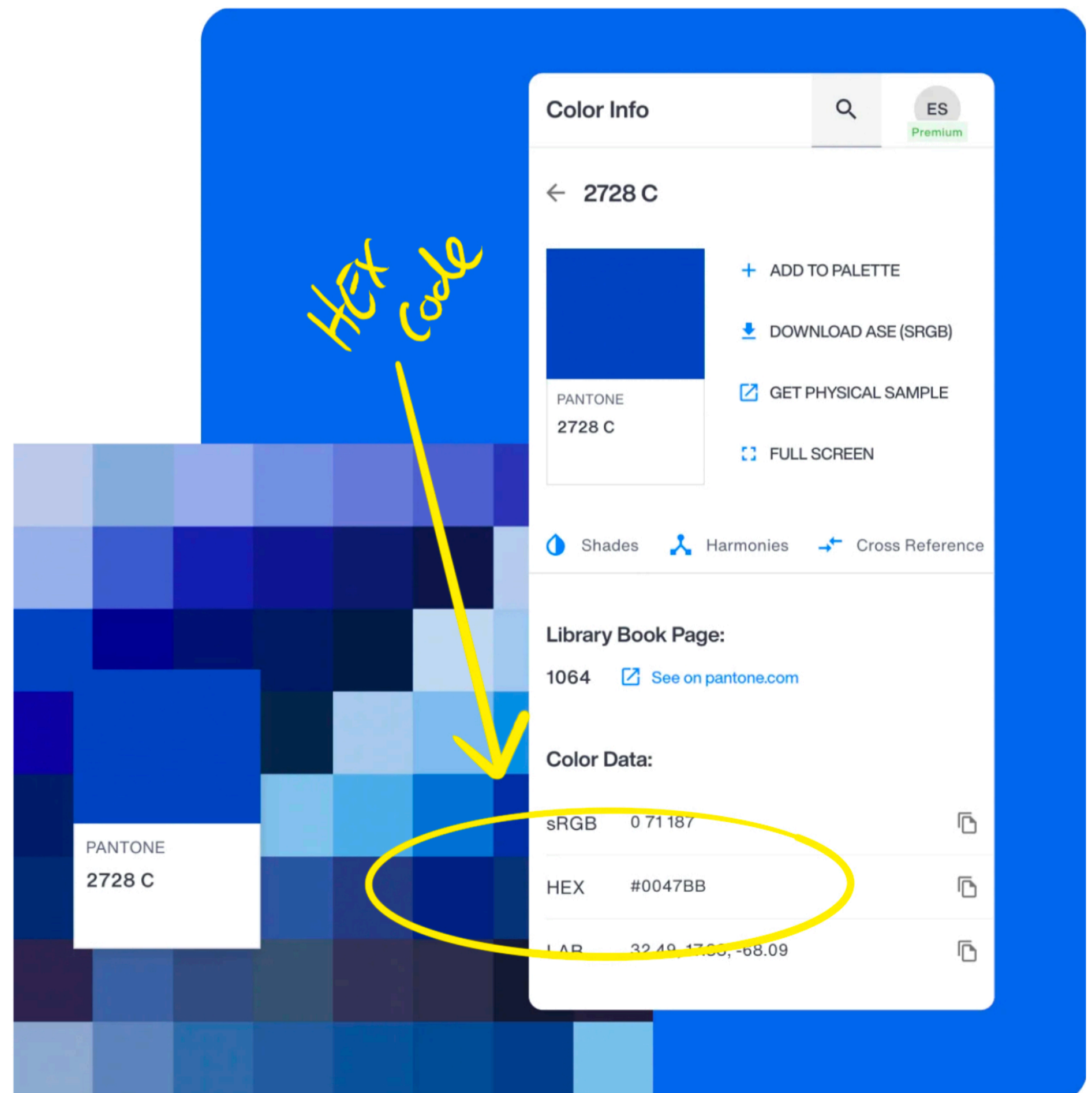
# Now to get to it!

**Step 1: Take a photo of a pure color to define your light source values.**

**Go to a hardware store and purchase some swatches of colors. Match the colors to an online profile from the manufacturer.**

**If you can't make it to the hardware store you can print the same color to calibrate your light source (and your printer).**

**Use the HEX code to define what the color should look like in the color selection tool on an iPad or like device.**

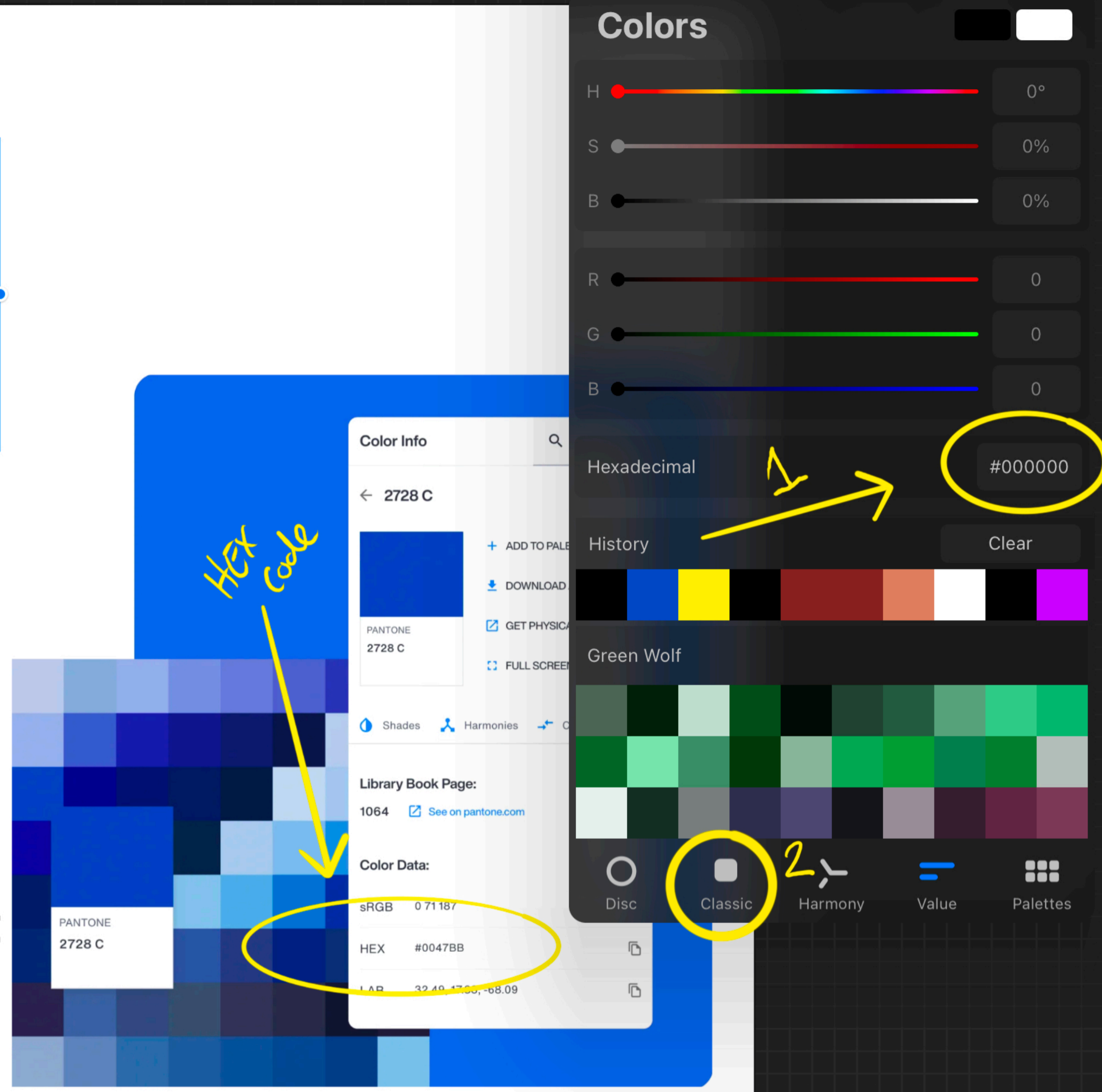




Then grab your HEX code finder in the drop down menu of the color selection tool. It is under the "VALUE" tab of the selection tool disk.

Add the hex value to the field.

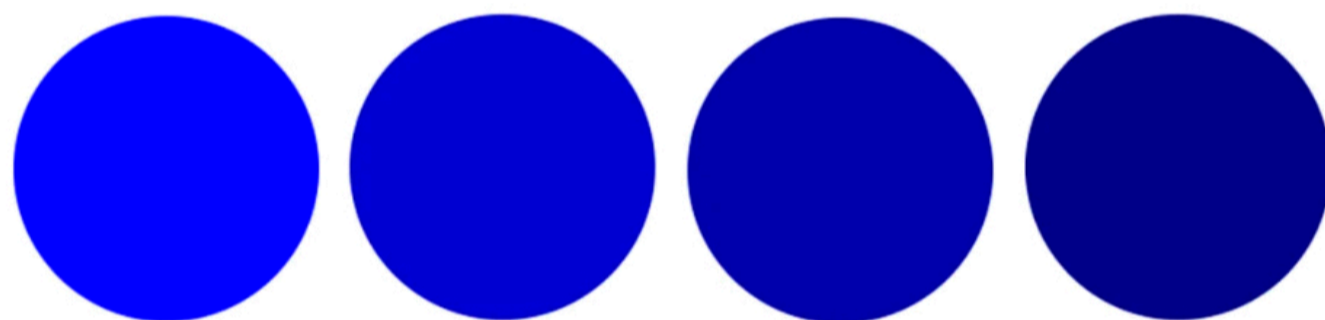
Then click the "Classic" tab at the bottom of the selection window.



The color I had chosen here is a strong shade of pure blue with hardly any tint.

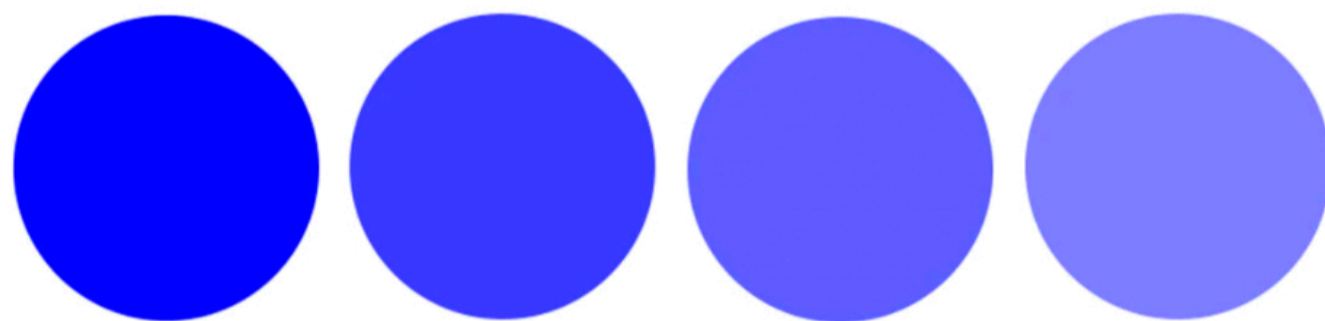
### Shade

Pure Color + Black



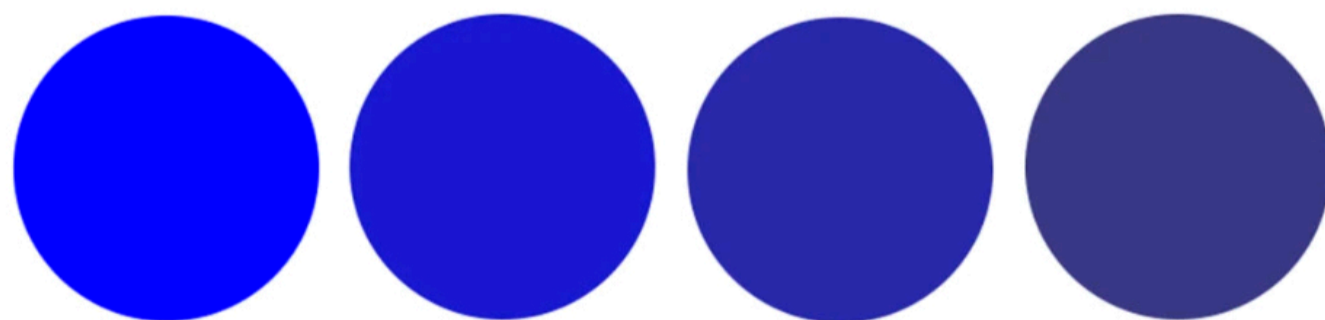
### Tint

Pure Color + White



### Tone

Pure Color + Gray



colorsexplained.com

**Colors**

← Tint

Tone ↙

Shade ↓

History Clear

Green Wolf

Disc Classic Harmony Value Palettes



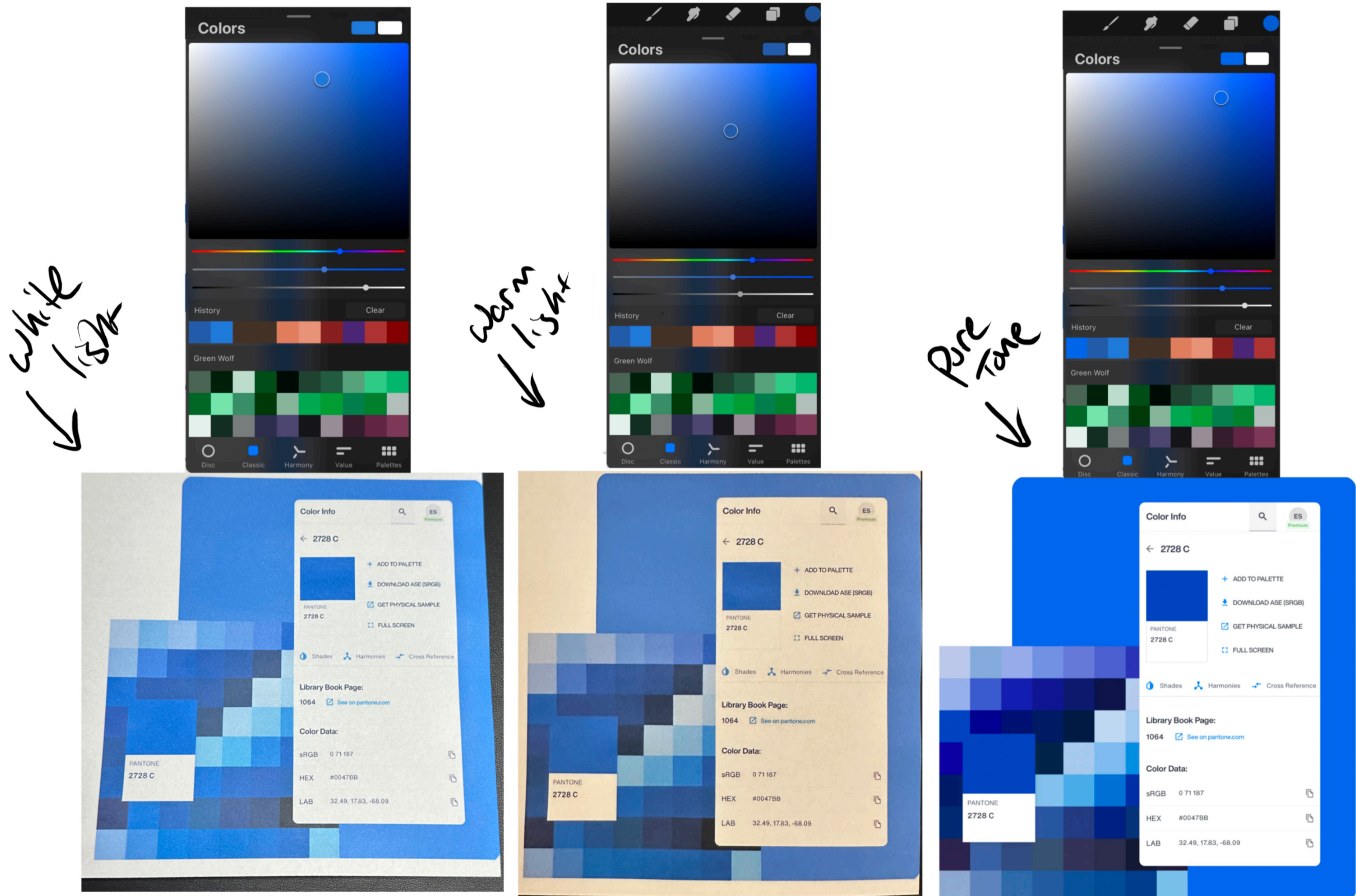
**Take a photo of this same color in different areas to determine how the light affects the output of the color. The outputting source on the "classic" color selection tool will determine how your source light affects the quality of your photos.**

**This is before we stick in the client's skin and how it affects the output...**

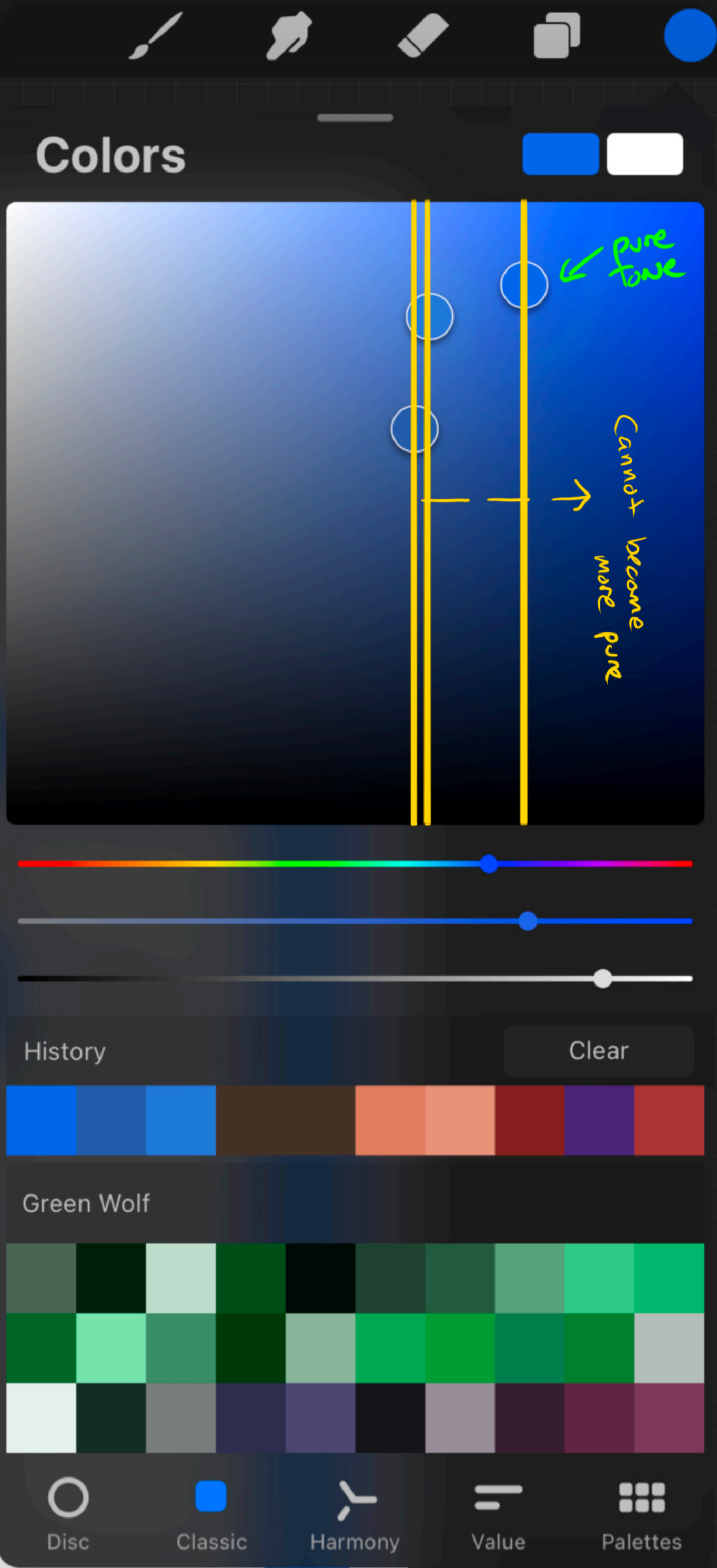


# These are the same color swatches taken in different light sources.

## See how the values change given the environment?



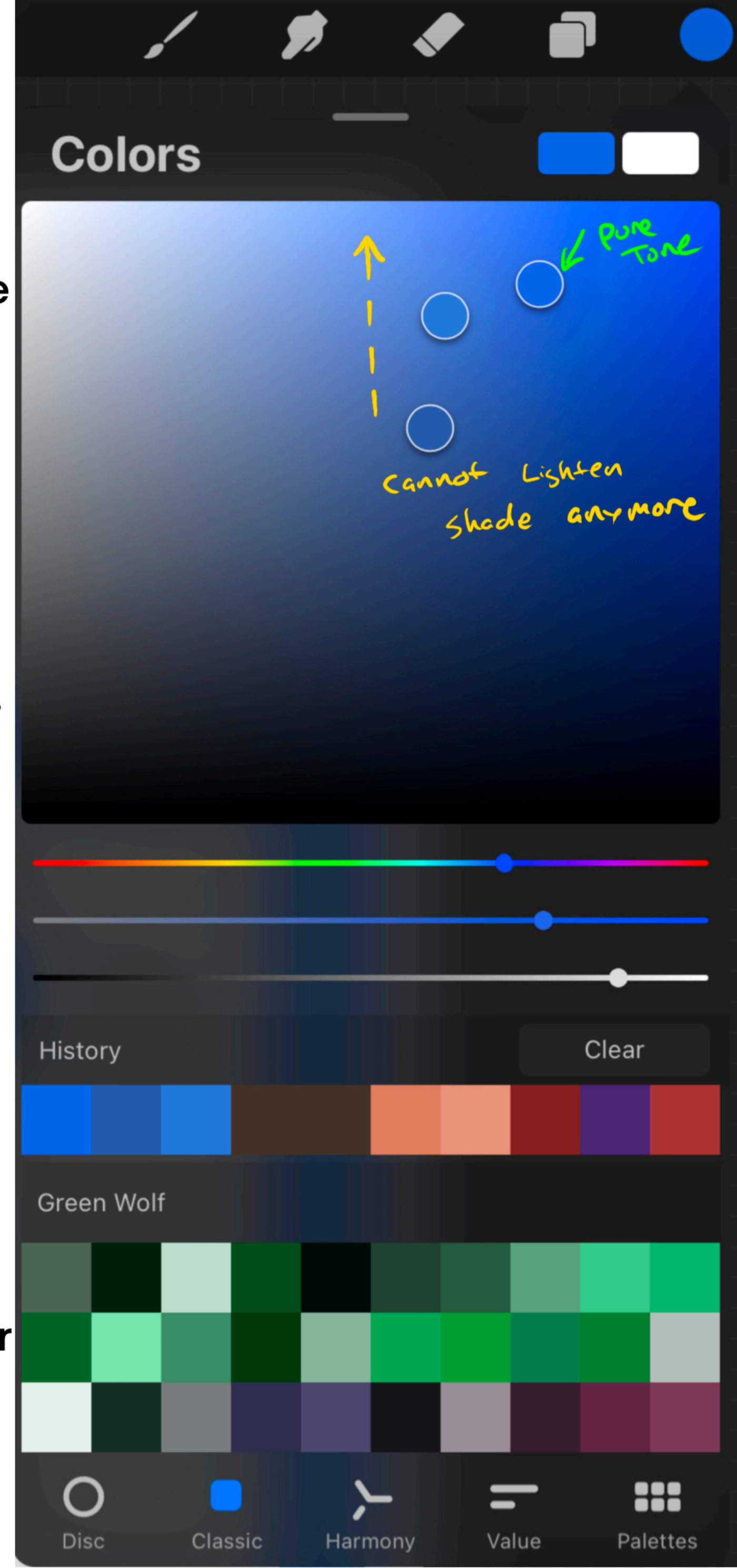




The values presented from the initial scan of a color present you with limits as to what is achievable.

The purity can only be modified if more "pure" colorant is applied to the mix. This still makes it impossible to max out purity when changing the original color used.

The shade value also cannot be modified and retain purity. By tinting either up or down (adding white/black), the purity is affected making the resultant color naturally lighter

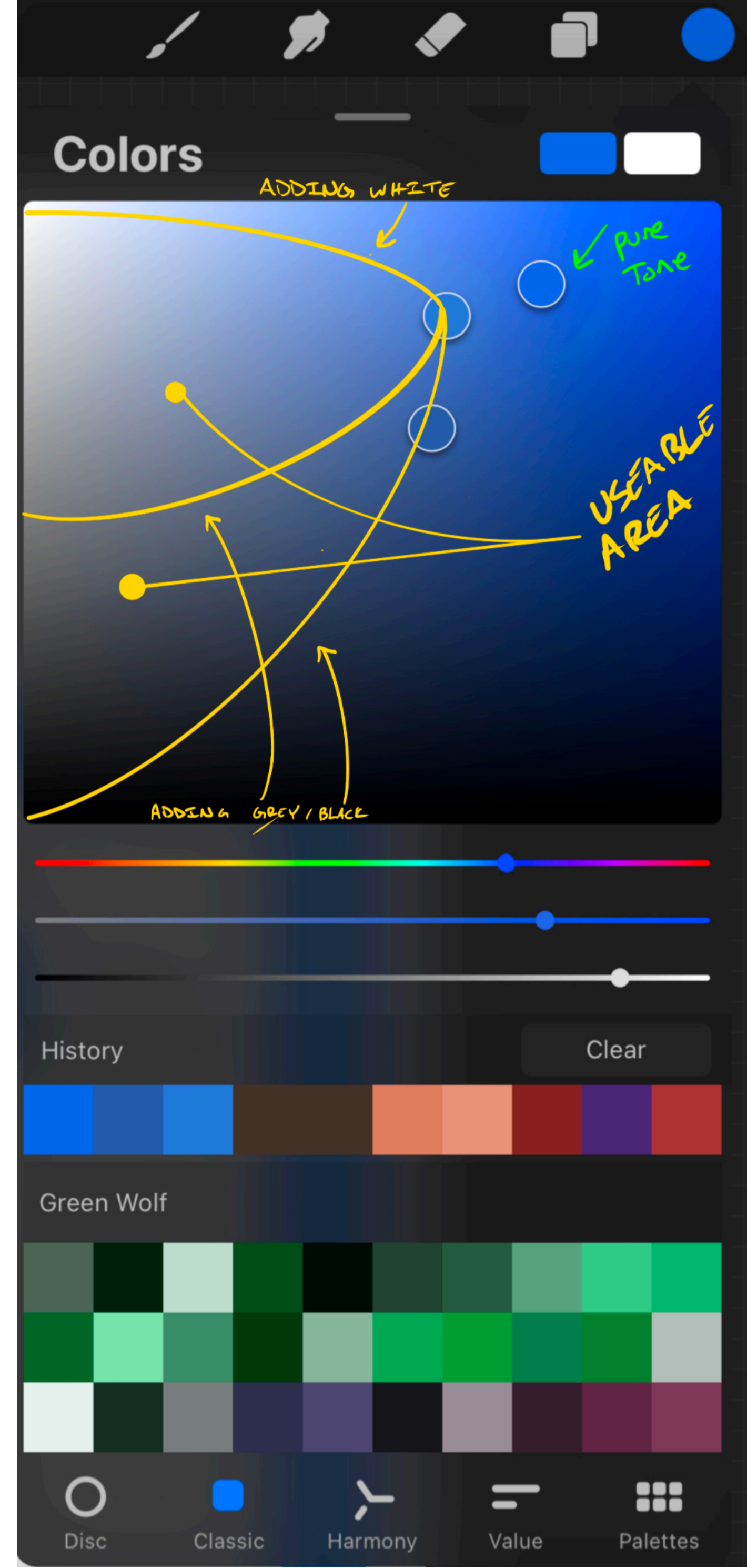




By adding white, grey, or black to a mix, the purity will be affected but the tint can be made to look lighter/darker.

With more lightfast colors this results in a more permanent lasting result (like using purple, blue, or green Pthaylocyanine-based pigments) as the colors mix well with tinting grey/white/black.

Other non-lightfast colors end up fading quickly as the lack of pigment load decreases longevity faster than having a packed pure pigment



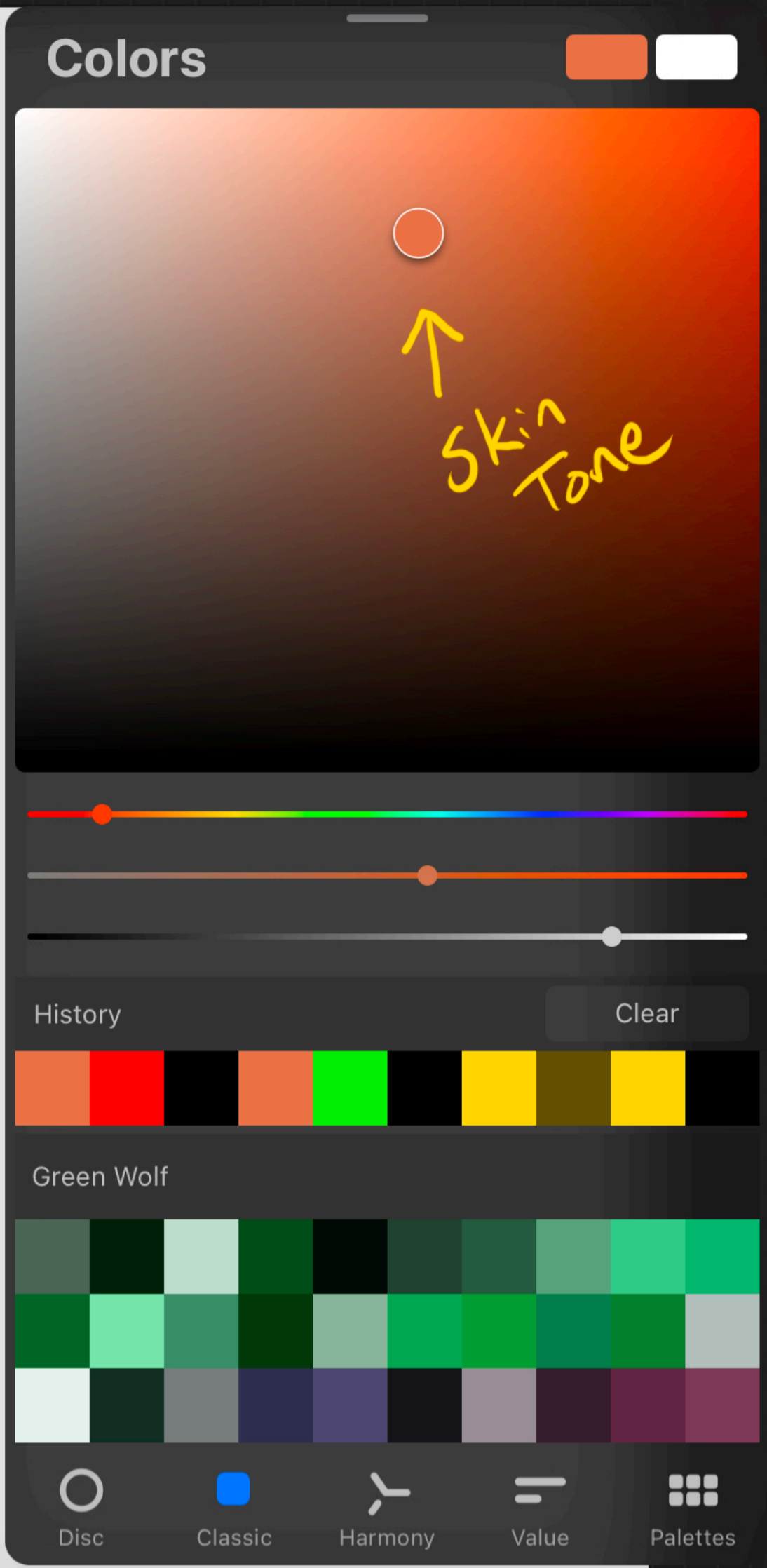


**Couple this with a client's natural skin tone - the colors used to represent an image on a tablet/ canvas/paper/etc are not what the resulting tattoo will look like "in-person", especially given what the available lighting will do to a tattoo!**

**This is why it is so important to make color choices with intention when planning a tattoo. Taking the client's skin tone, the environment, their lifestyle, and as many other variables into account will increase the chances of a tattoo appearing EXACTLY like you want it to with no surprises.**







Let's go back to the Pantone skin color chart...

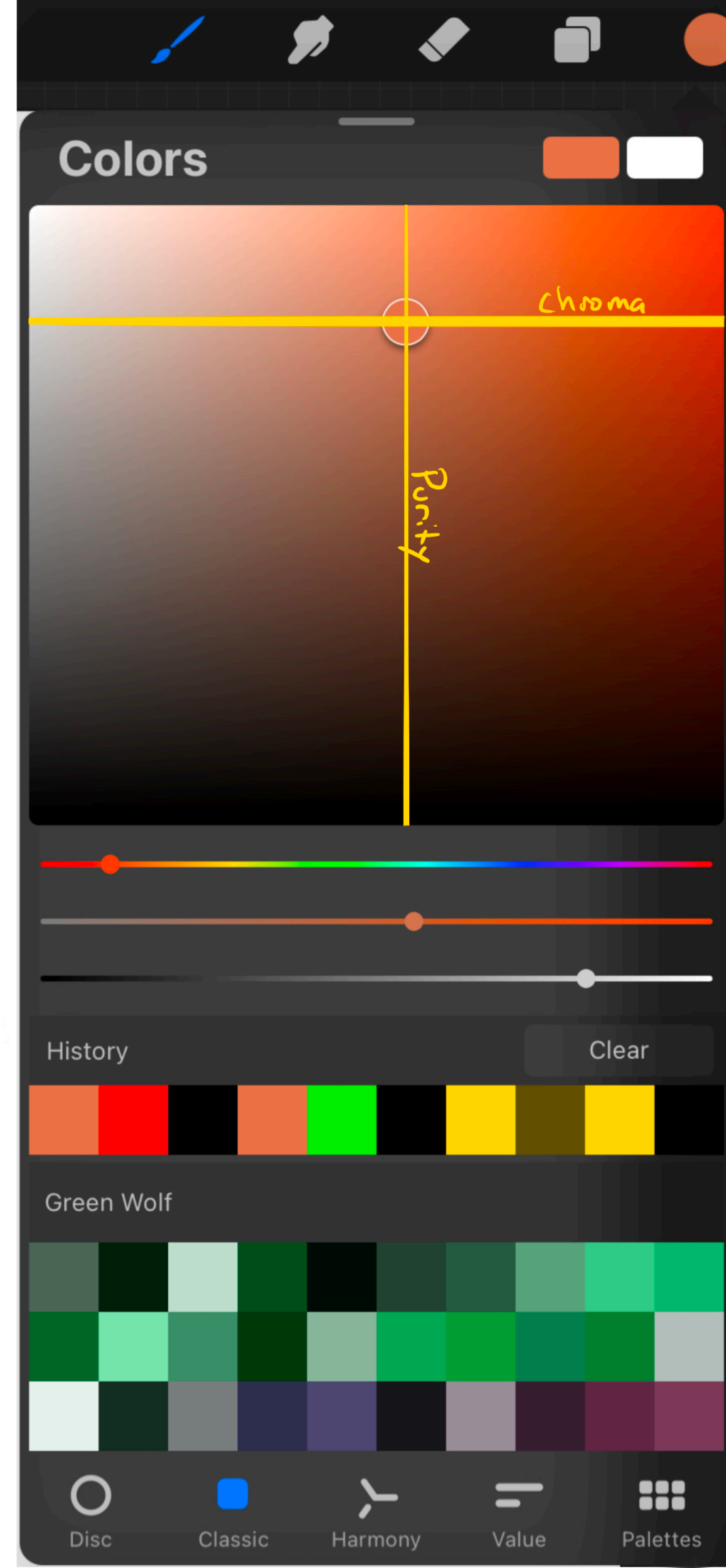
While it is not an exact science as to what skin colors are, it can be used as a relatively precise model for understanding skin color's effect on tattooed pigment





A person's skin naturally absorbs varying amounts of light energy depending on what types and quantities of melanin they have. This is what makes their skin unique unto the specific person getting a tattoo.

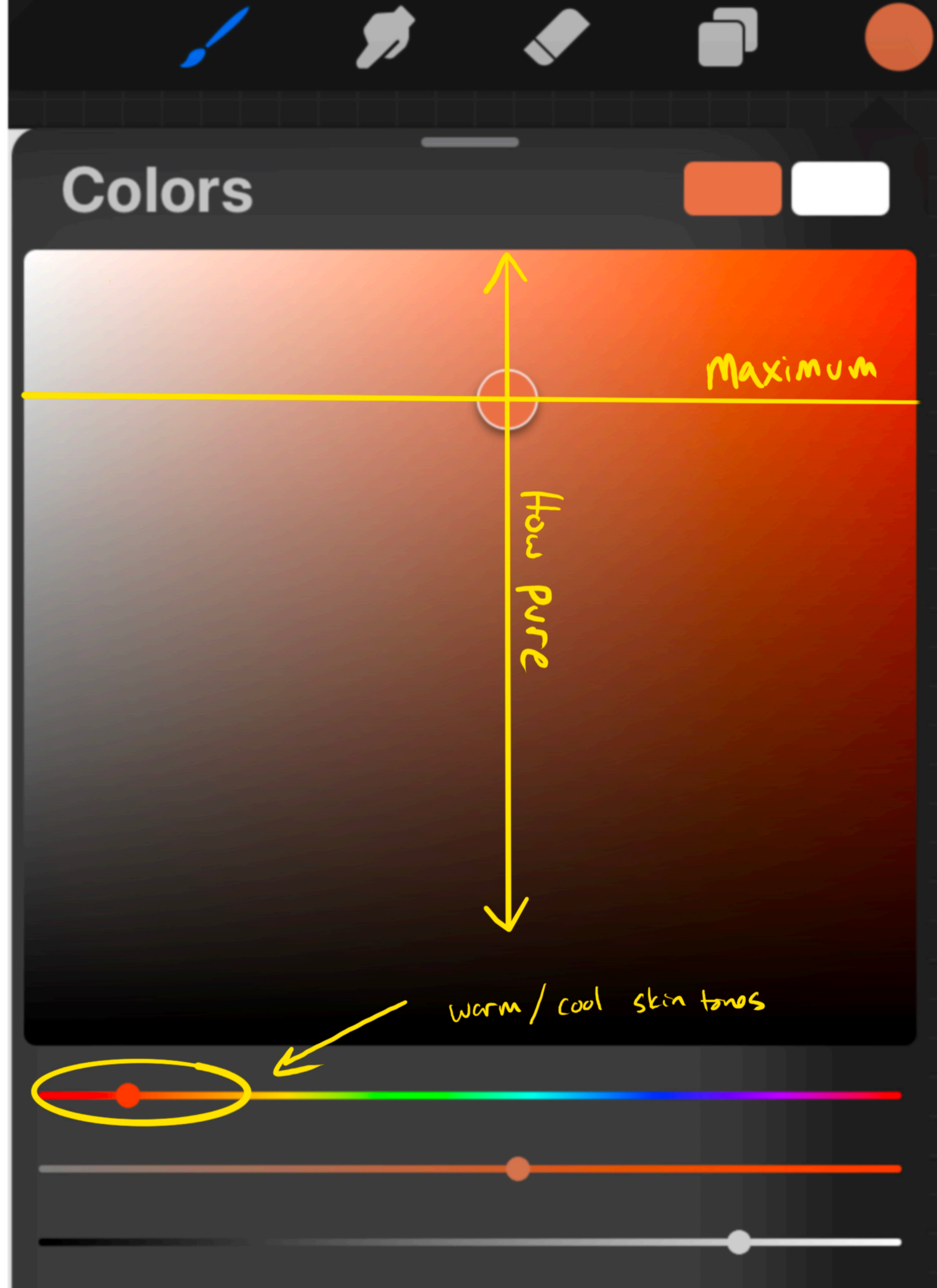
It can be easily measured by taking the same techniques for mapping light temperature mentioned earlier. The maximum purity and chroma will be affected as the skin absorbs the light that interacts with it.





First, we can tell how warm-toned the client's skin is by looking at the bottom color-choosing slider. The more red shifted the color is, the warmer their skin tone will be.

Next, we can see how their skin will affect the purity of a color. However high up the skin color's selection circle is, that is the brightest a "pure" color used in a tattoo will look.





By limiting the amount of light that comes into the skin, the total area of the selectable color space is also limited.

This makes the available palette less than what is selectable.

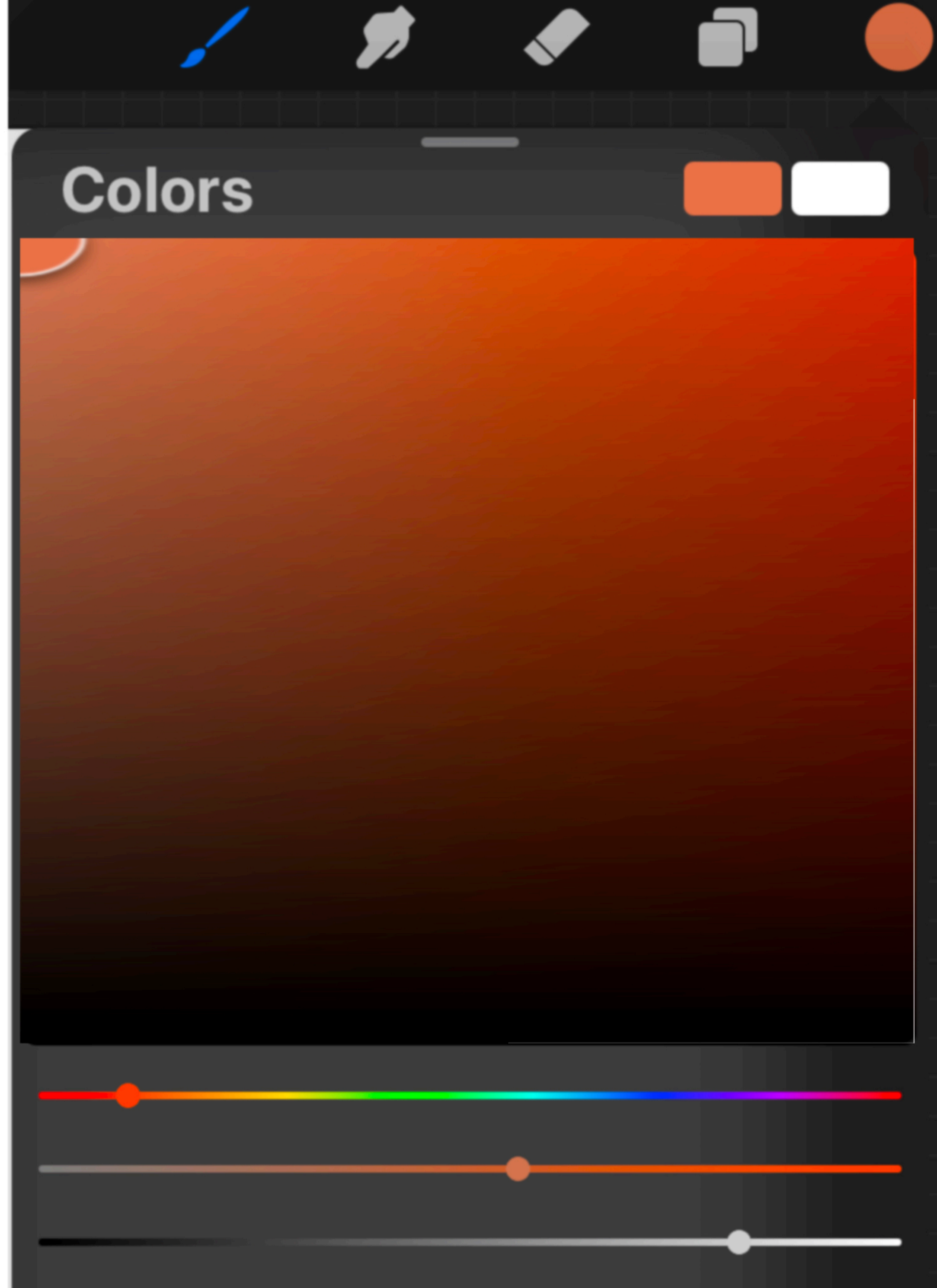
Instead of looking like this...



The selectable layer looks like this.

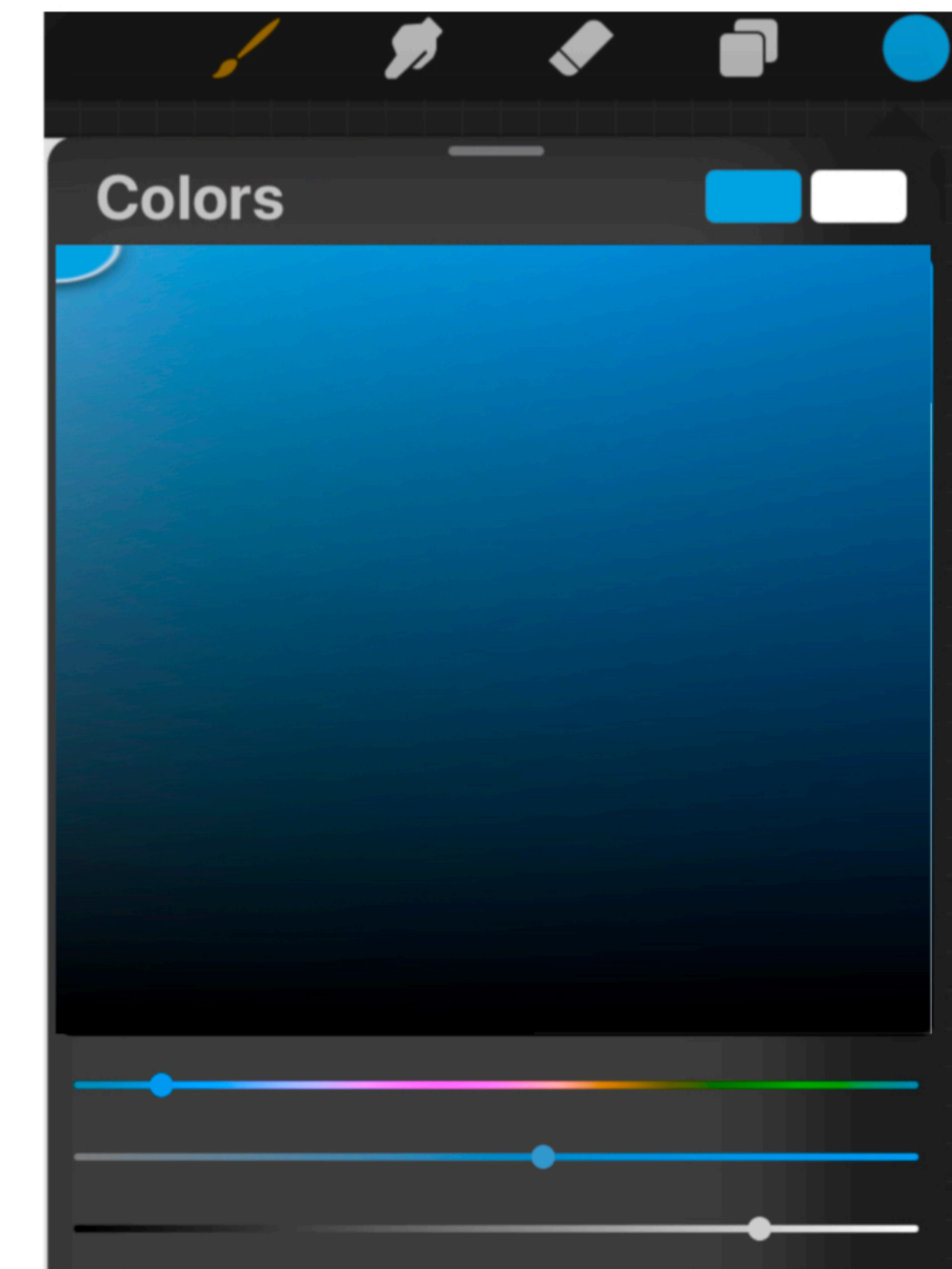
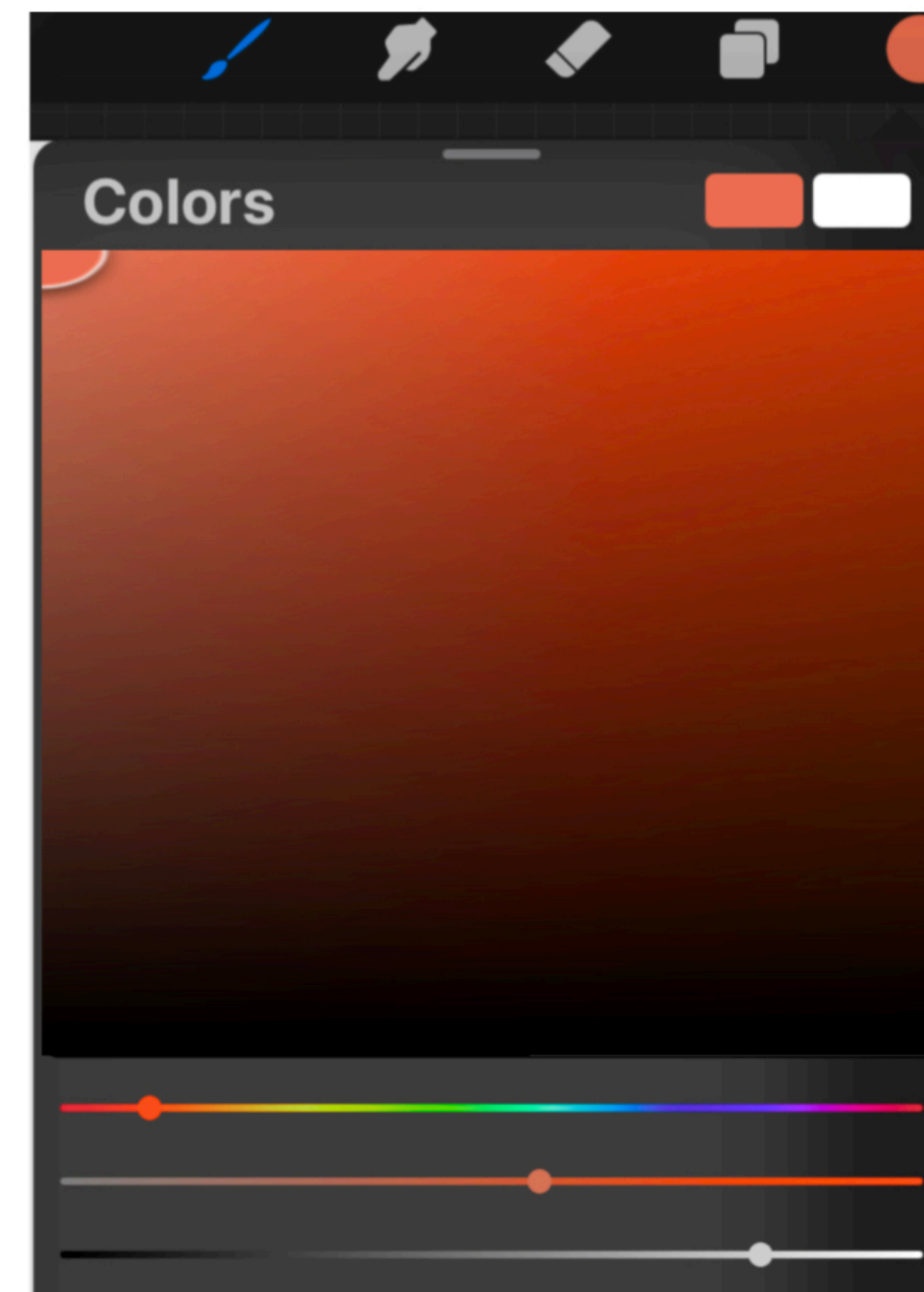
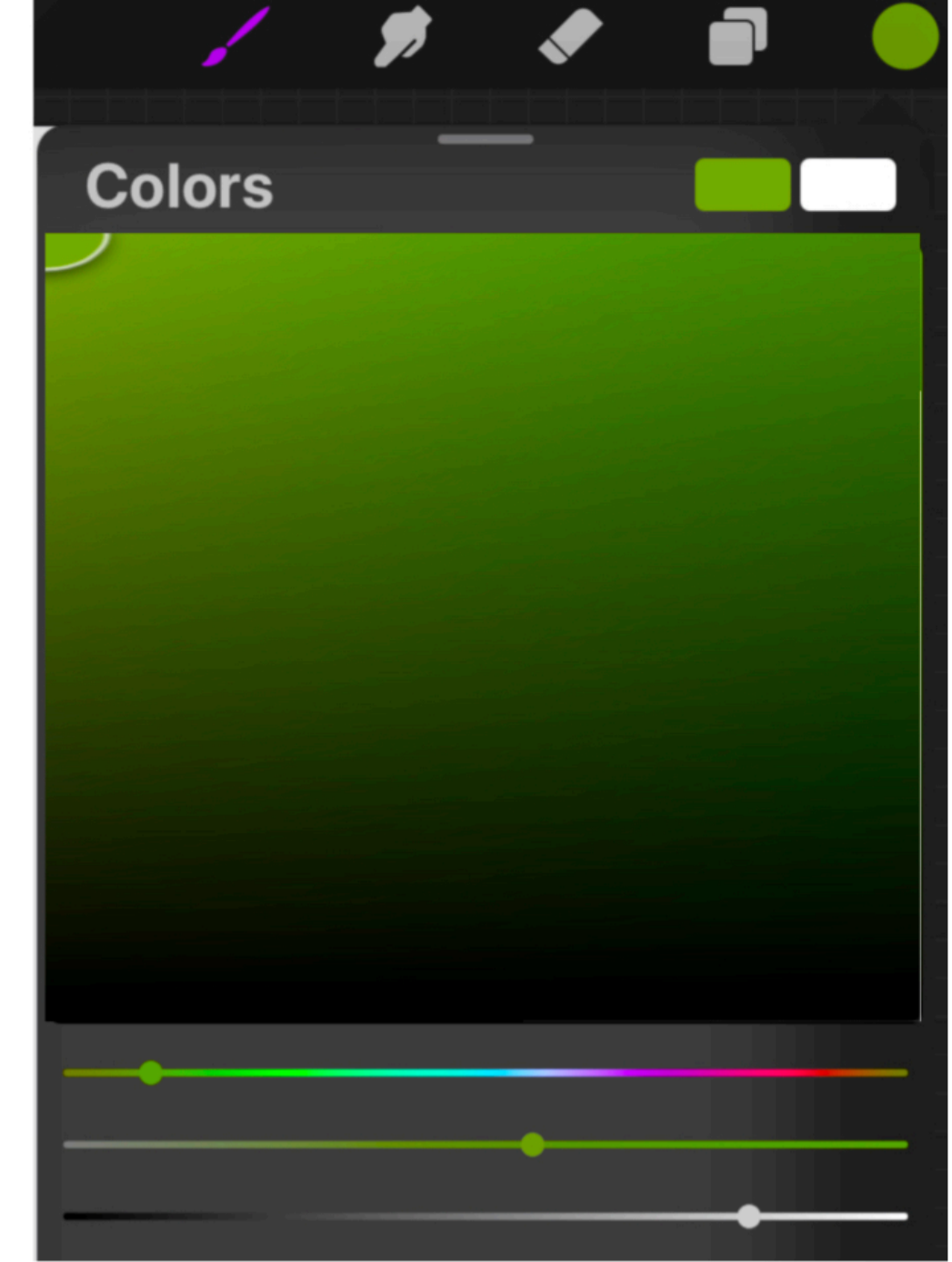
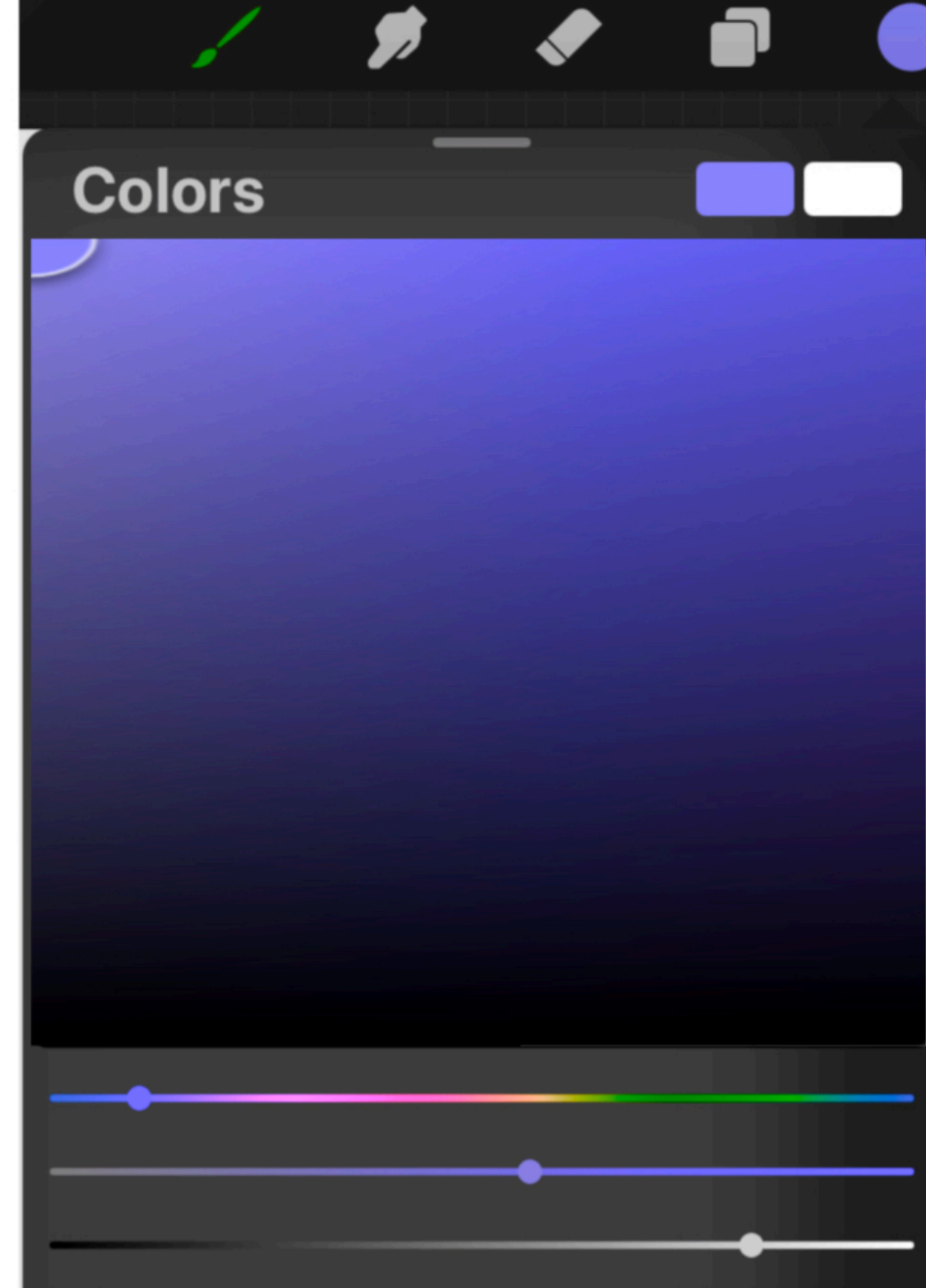
The skin can never achieve a pure white tone, nor a pure color tone that is being applied.

This also affects those colors that are already tinted to achieve a variation on a pure tone.





Use the same technique to map other colors and apply them to your final product so you can see how the range of colors will look once established in the skin.

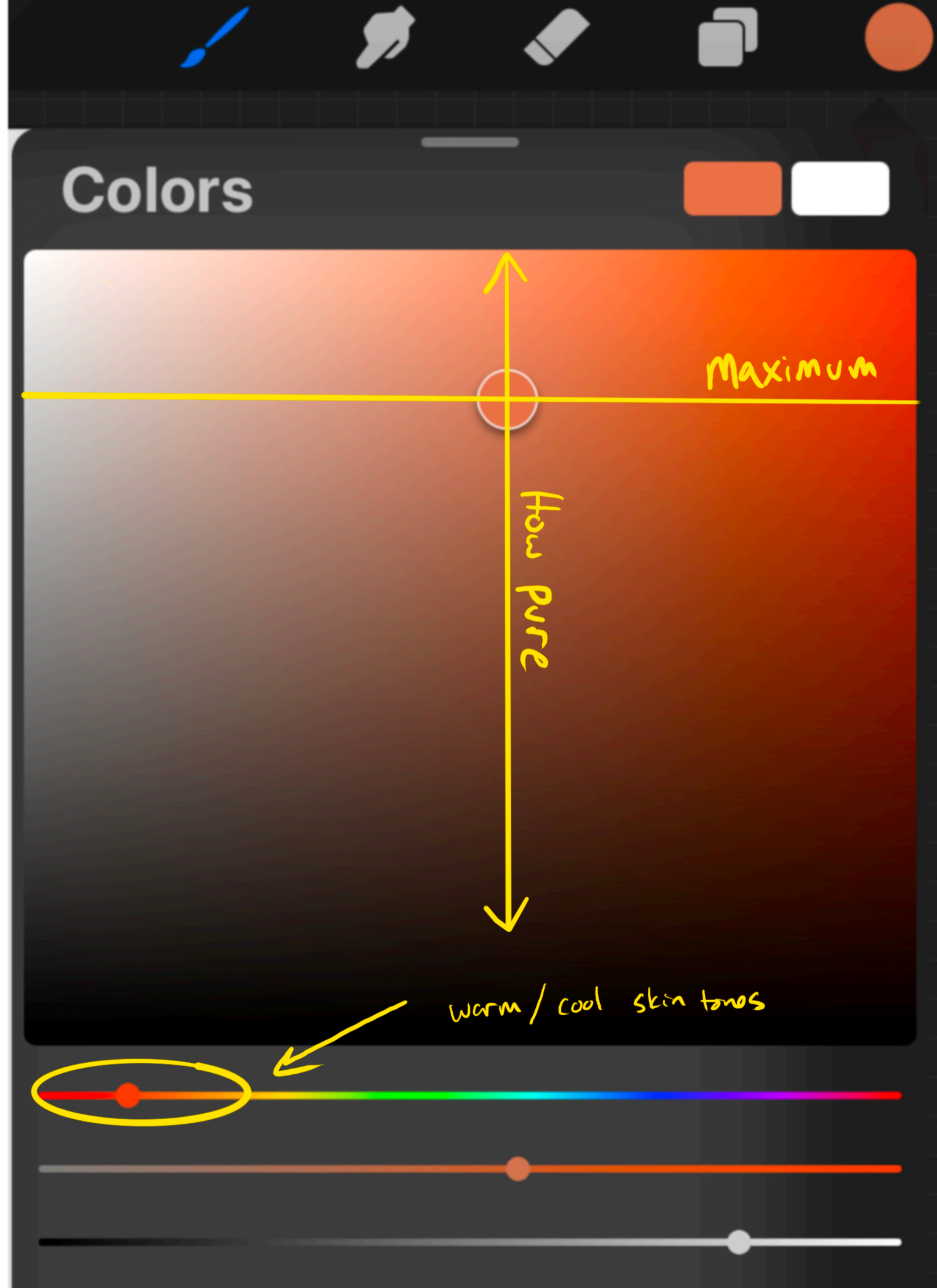




Back to the slider from a slide before -

Looking at the warm tone scale at the bottom...

The warmer the tone of the skin, the greater propensity of the skin to allow through red-toned or lower velocity visible light waves. The skin is better at accepting colors in this tonal range, or accepting pure tones of colors. In the red-green range of the visible light spectrum.

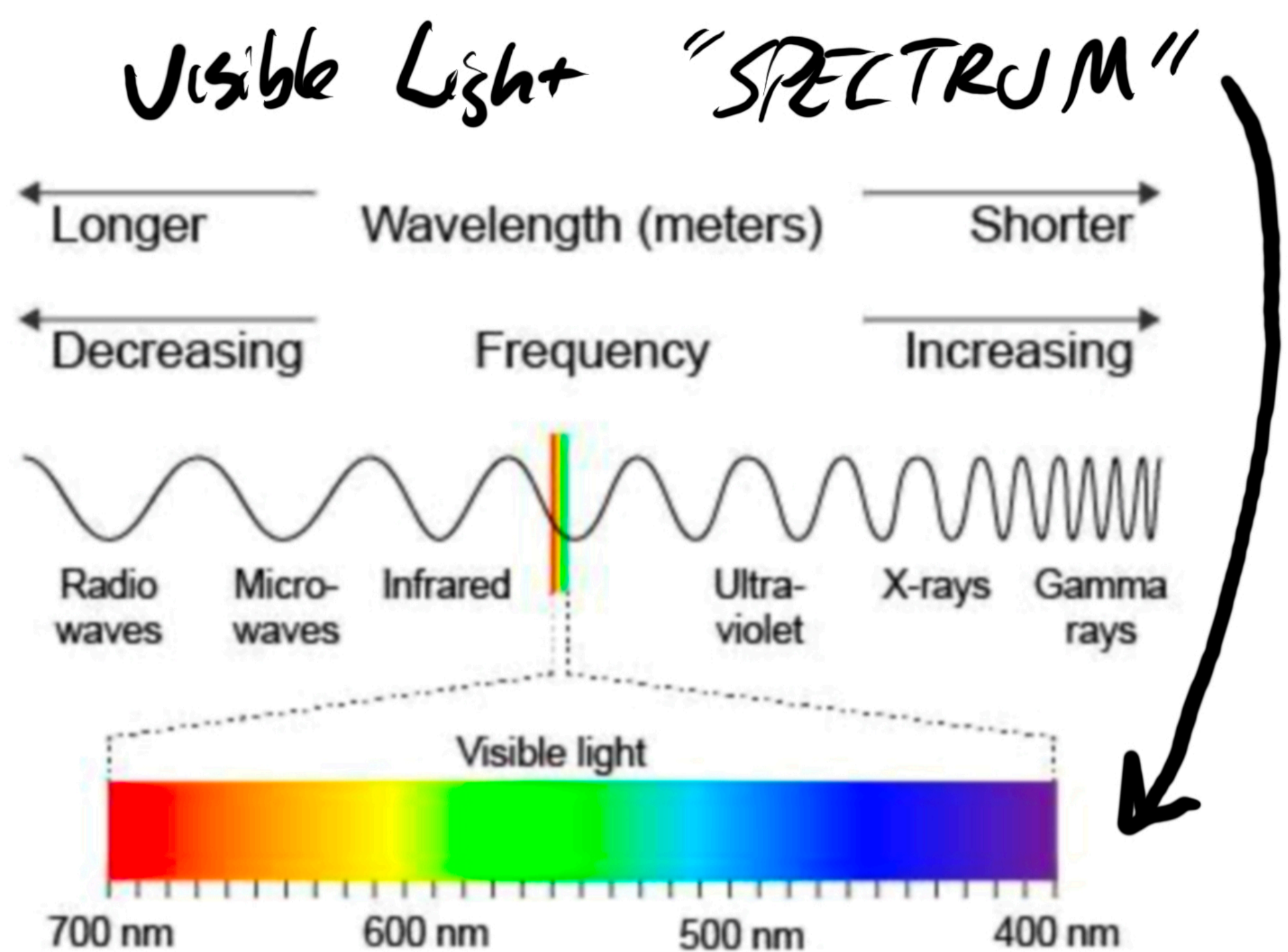




Remember this picture?  
Visible light is what we as humans can see.

Other animals have different amounts of light they can process with a Mantis Shrimp being the most adept at seeing a massive spectrum (from -300nm - +700nm)

Humans only see a very small amount of the electromagnetic radiation emitted. What we consider "white light" is just a fraction of what is actually going around us at all times! What this means is that our perception is only just a fraction of what could actually be seen. Every person is different as well. Some people are color blind, others may have tetrachromatic vision. Some people are also lacking in sight. As artists we must keep this in mind as we develop tattoos to ensure legibility is accessible to all who can enjoy the tattoo.





## **Think of it like this:**

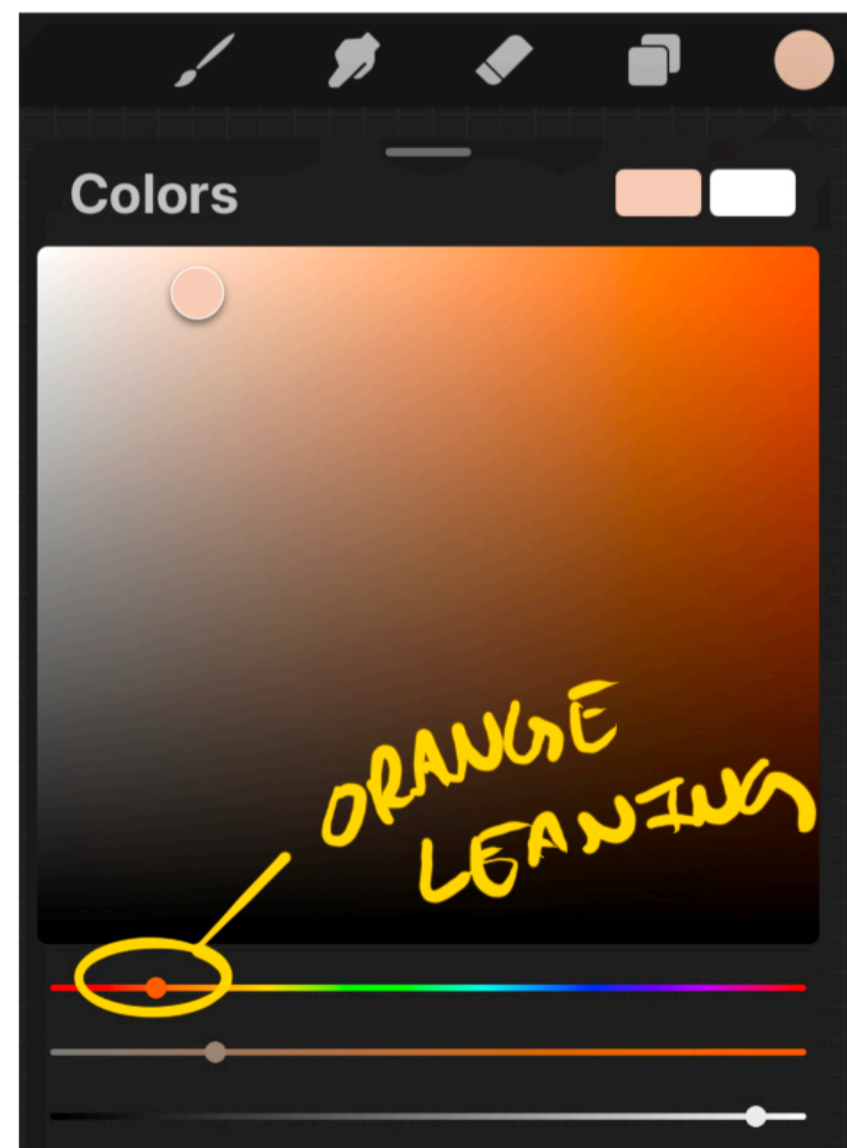
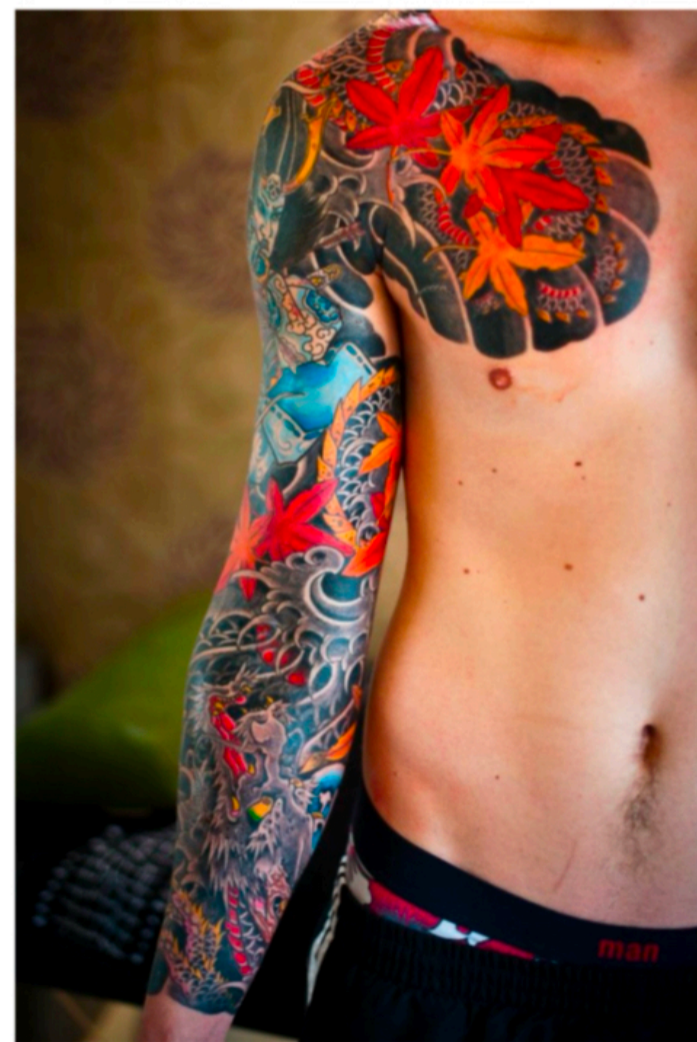
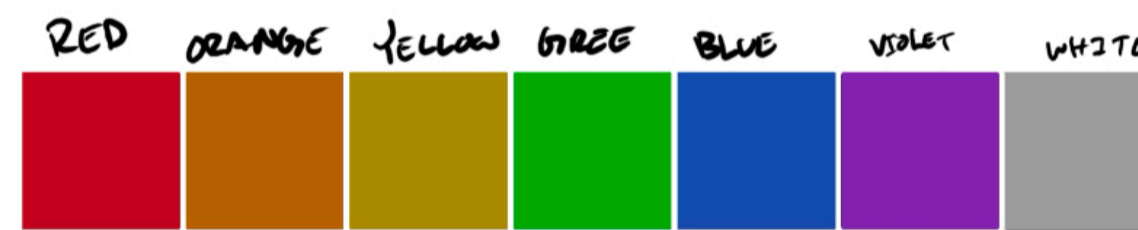
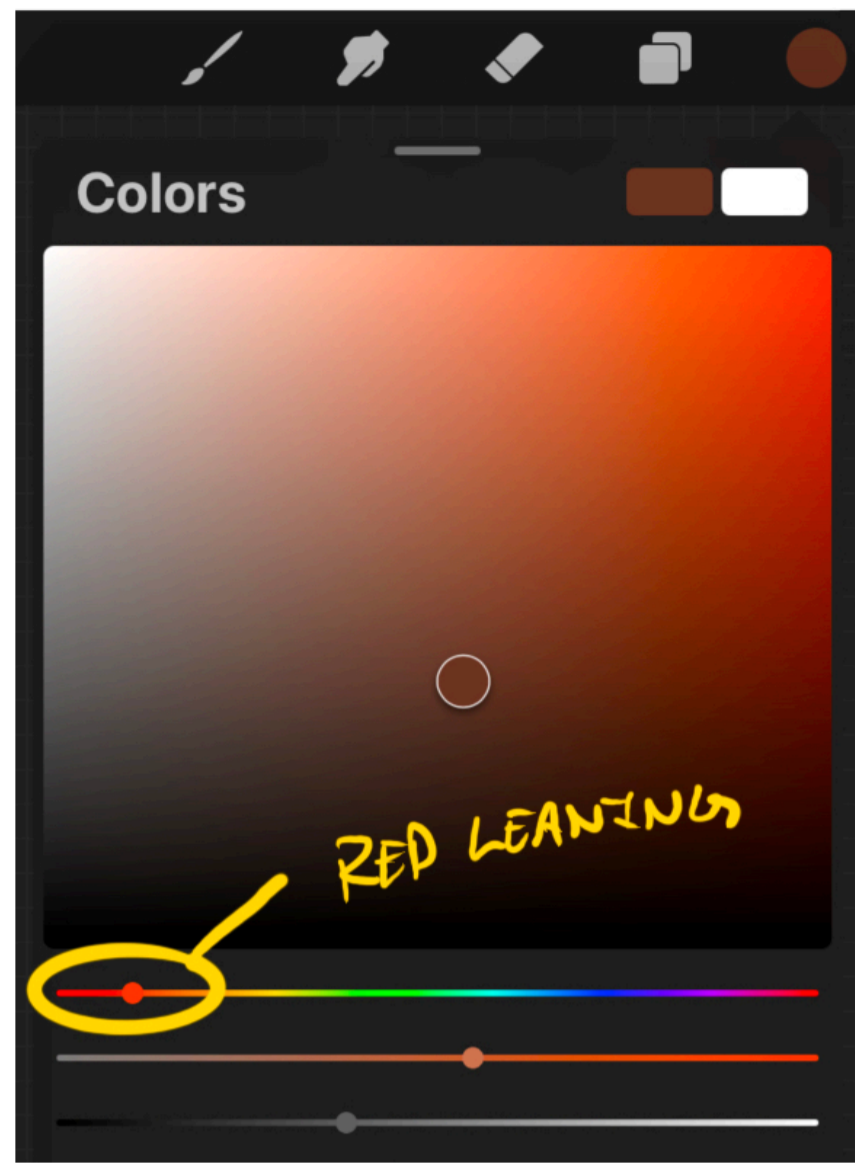
**We know that the light we see is actually the colors that have been reflected or refracted and not absorbed by something. The colors that are absorbed make up the bulk of all other visible and invisible electromagnetic radiation, not what you actually see.**

**If you see "RED", that means that other colors are being absorbed or refracted and not meeting your eye.**

**People who have a higher concentration of eumelanin (black/brown melanin) will absorb wavelengths of light more efficiently near the UV spectrum, but also absorb lights as far in as 400nm (blue light). This is why most deep purples and blues look very dark in some skin, especially those who tint far red in the slider test talked about before. This is also why the tint slider lockers onto the red side of things.**

**With a more ORANGE tint of the slider, the body is allowing through colors on both sides of the electromagnetic spectrum it reflecting off coppery tones that seem more orange. This also makes sense as pheomelanin gives people blonde/red hair (which isn't really red but more coppery in color) but also makes them susceptible to being easily burned by the sun. This also allows more light to interact with installed pigments because less energy is absorbed when compared to eumelanin.**

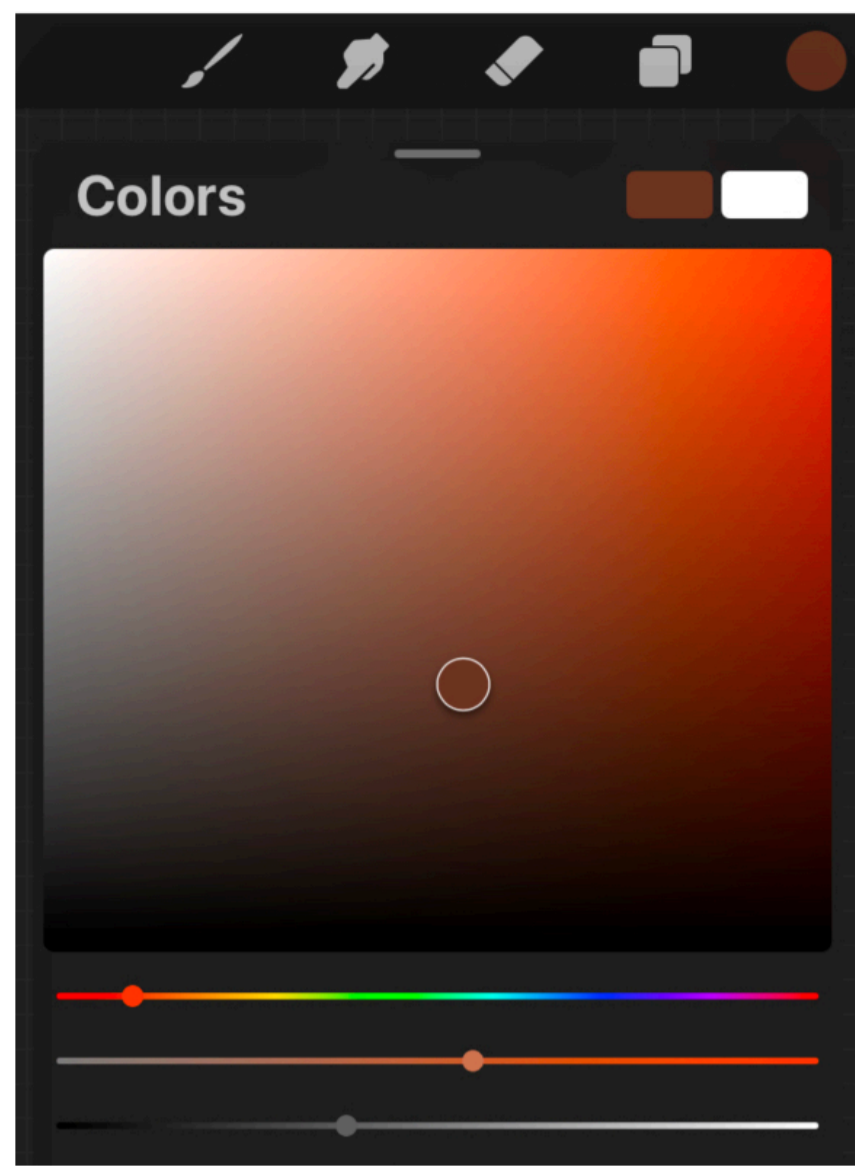




Knowing these traits helps in two ways. First - what temperature of light you should use to take a picture - white light or warm lighting... or in between!

Second - understanding the tone also lets you know what pigments will look bolder based on the clients skin profile (what is the majority type of melanin the client has). With eumelanin absorbing so much of the purple/blue spectrum of color, more red-leaning colors are recommended.





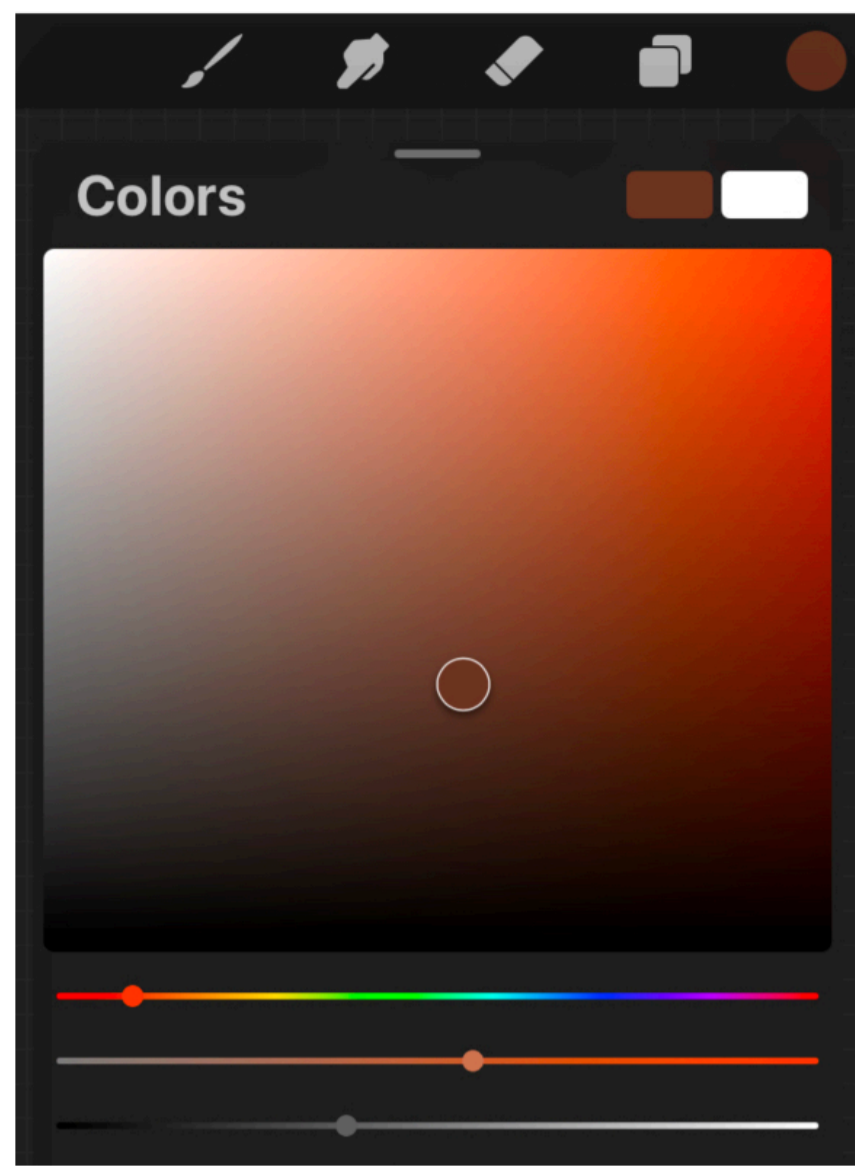
**Now onto the selection tool and how it can help you choose colors**



**Pay attention to how high up the circle is. This defines how much white light is getting through the skin. With the current example on screen there is not a whole lot of white light getting through the skin, which makes sense as the person has a decent amount of pigmentation.**

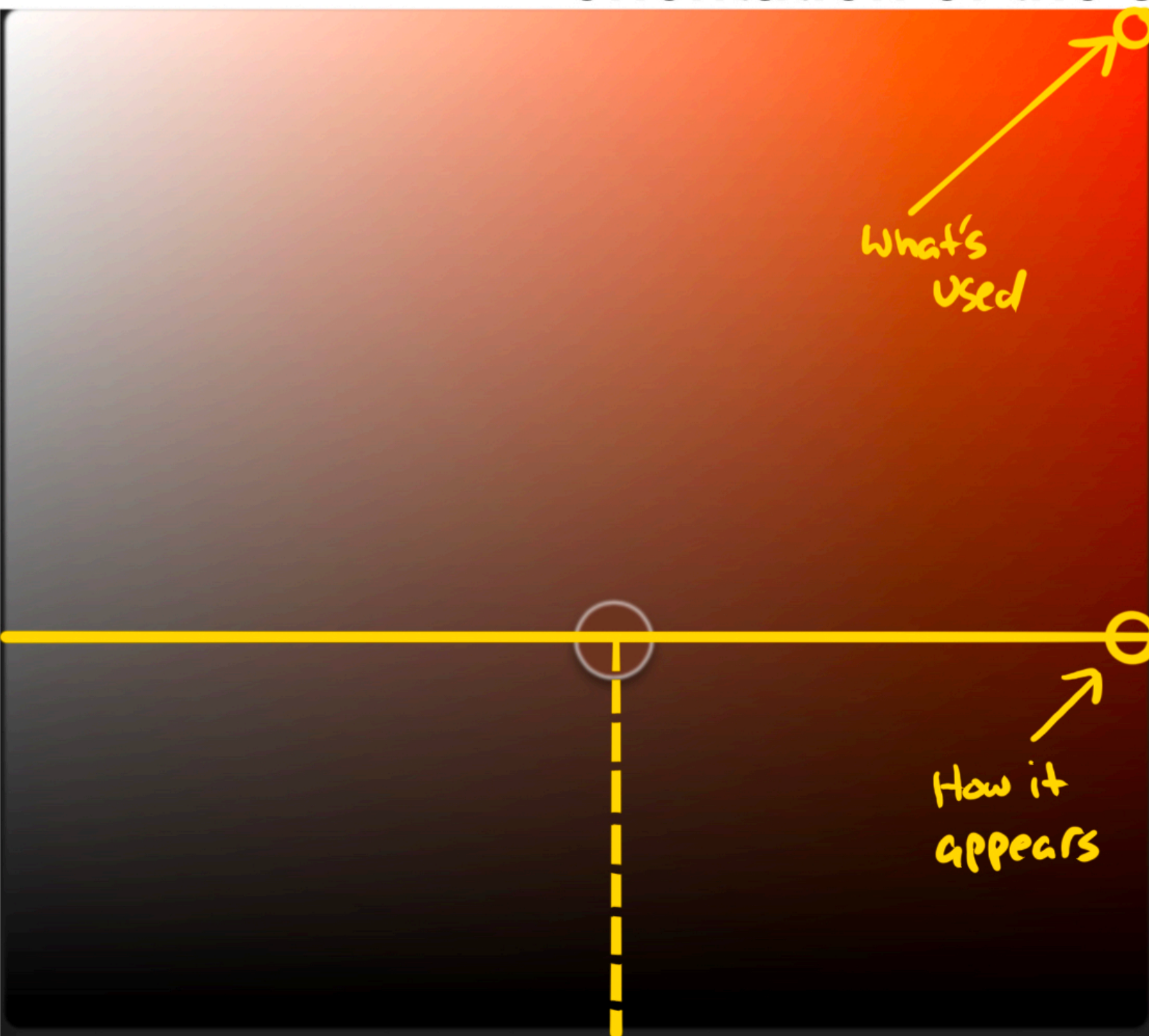
**Without a lot of white light getting through, the "brightness" of any pure color used will be dropped. This is expressed with the color swatches at the bottom of the example. Each of those colors are "pure" tones of each specific color. These examples are what a best chances of seeing when you use a pure color.**





When you compare what the pure color looks like while in the skin you can see how much the skin interferes with the light values associated with it.

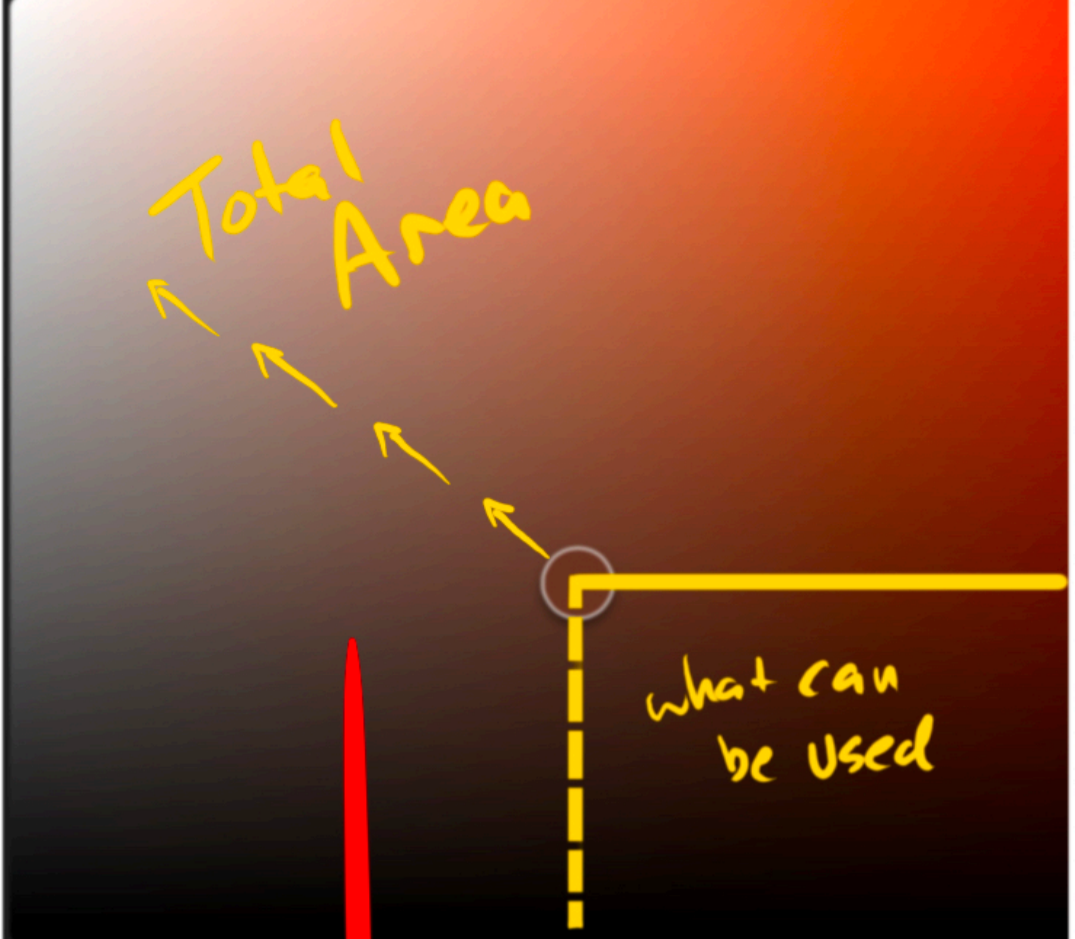
Even with a pure color used there is a definite tint that is achieved. This follows the orientation of the slider that is shown in this example.



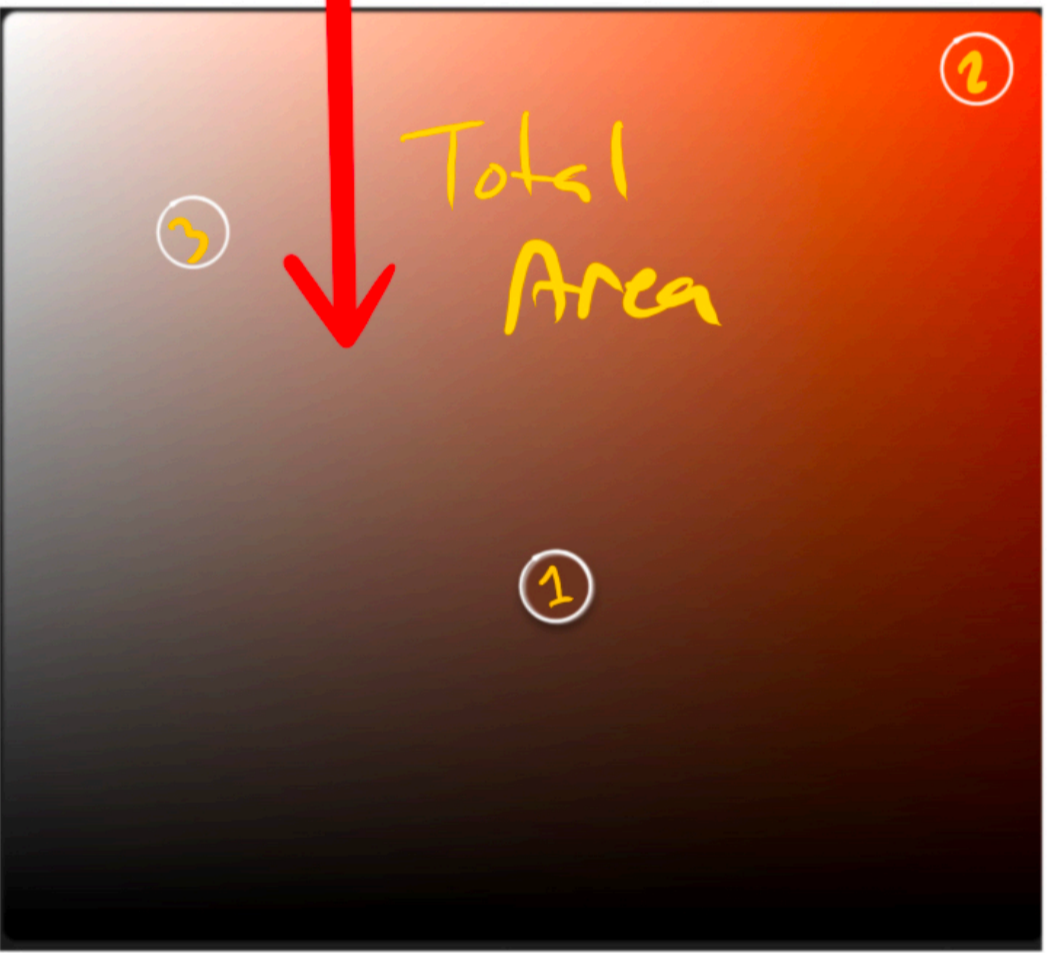
You can imagine that the section quardoned off by the circular selection marking tone as the limit as to how the color will be shown. There is only so much light that can enter the skin, therefore there is only so bright of a color that will result.

This is where we can overlay the selection based on a clients skin tone to see how a color used will present in the skin.



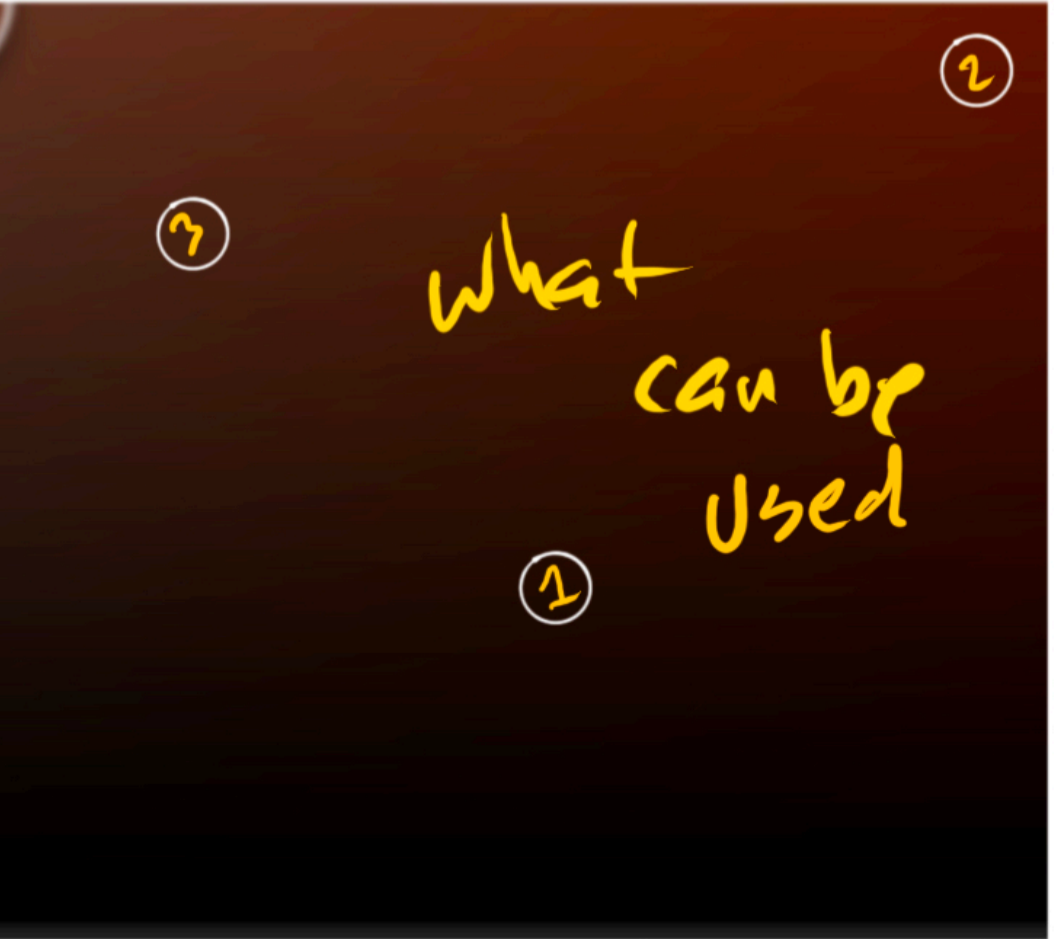


The color from a normal selection tool will be limited because the skin can only accept so much energy. When the darker skin toned gets tattooed with color the greater the melanin content the more reduced the energy is to light the color up.



Sizing up the area that can be used to match the area of the "normal" selection area, points within are symmetrical when looking at color selection.

The selections of 1, 2, and 3 in the "Total Area" box are what colors would be used in a design.

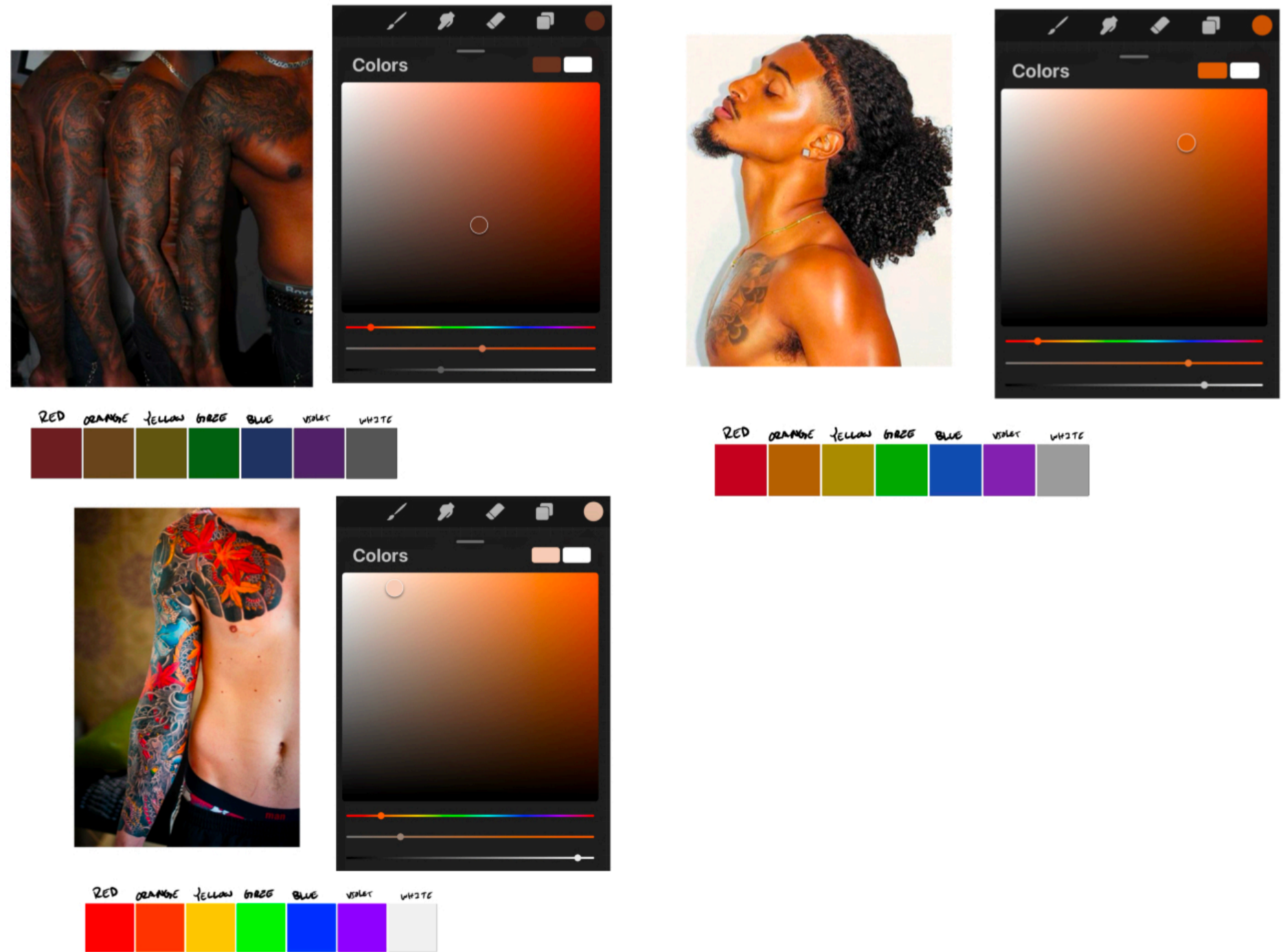
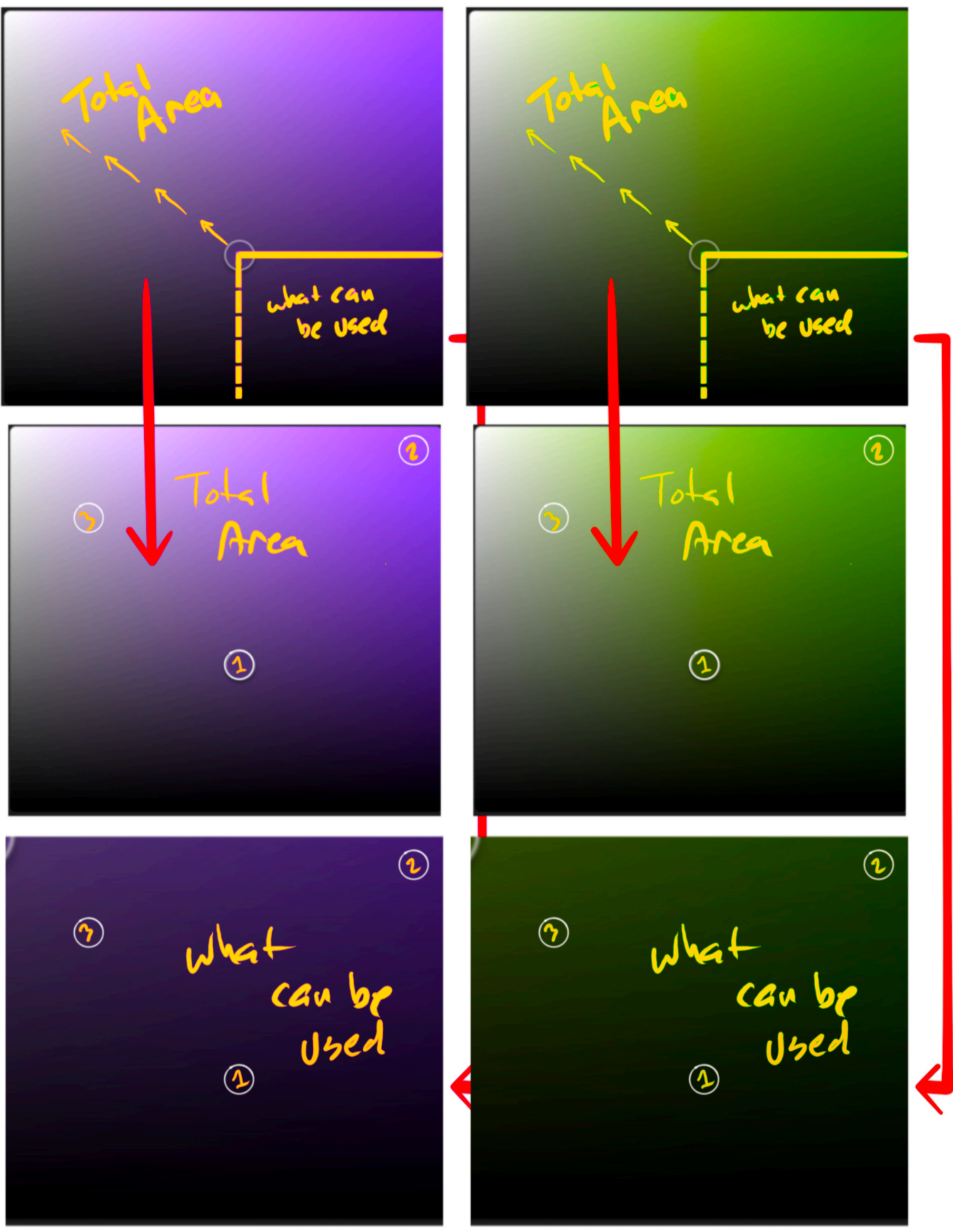


The same numbers in the "What Can Be Used" box show what those colors will look like in the skin.



This works for all colors available. Just resize the X-Y axis from the selection tools landing point after snapping a picture of your clients skin and see how individual colors will translate when applied in a tattoo!

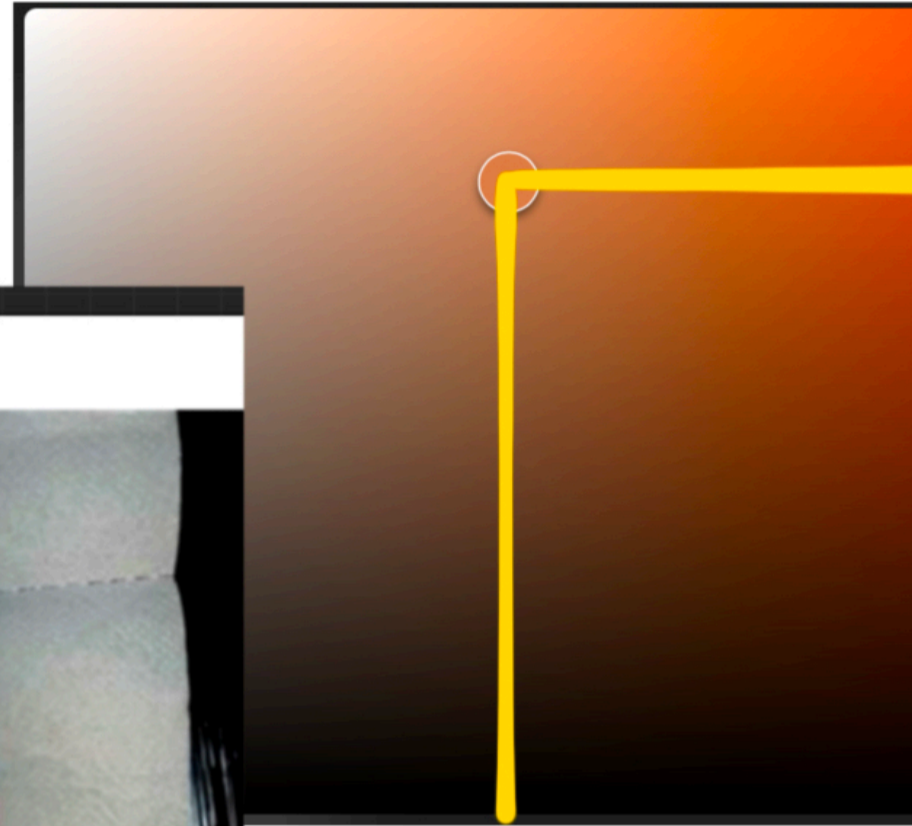
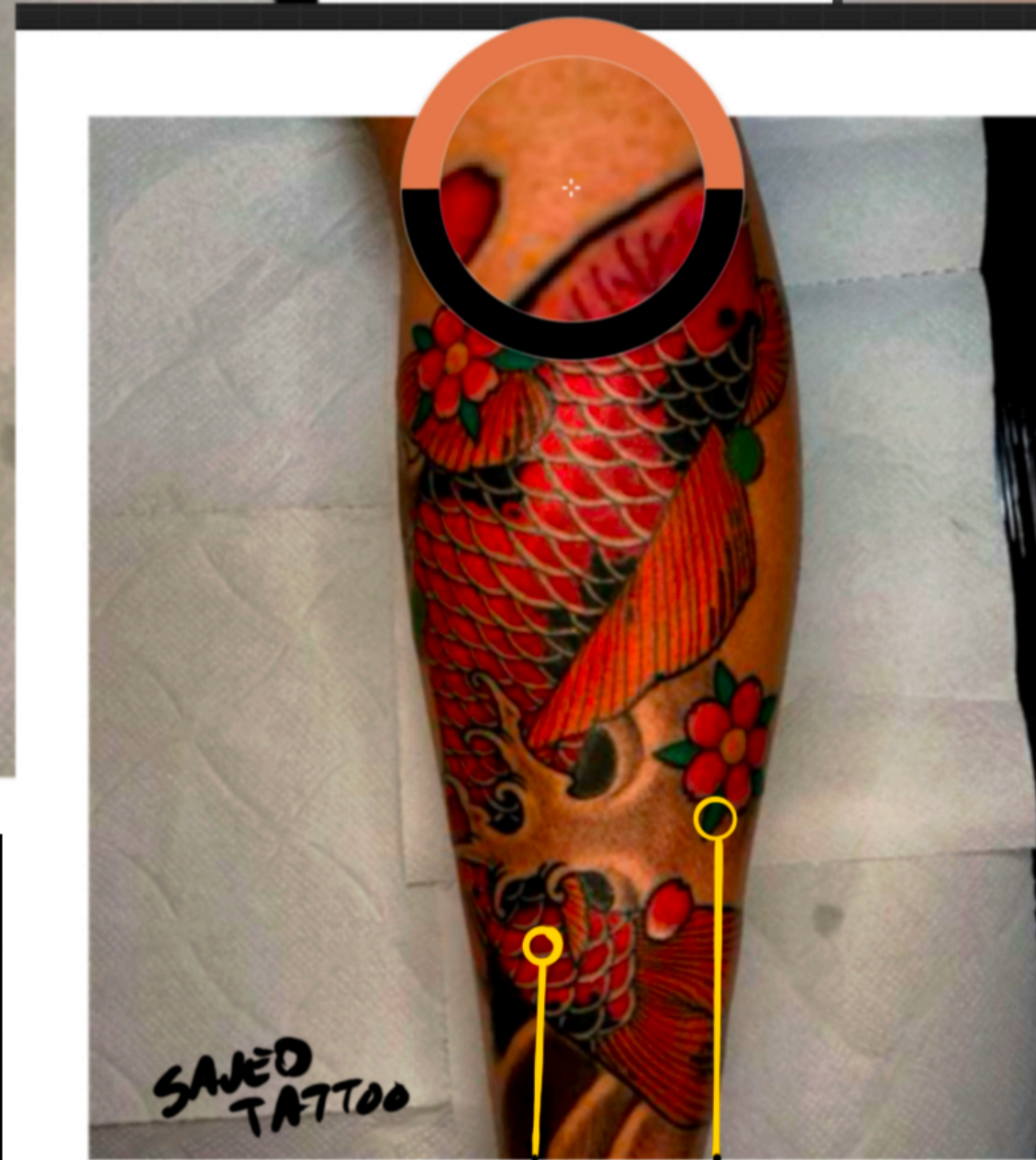
You can see from the previous examples how accurate the color choices are, or even when playing around with color tattoo examples from a Google Search...



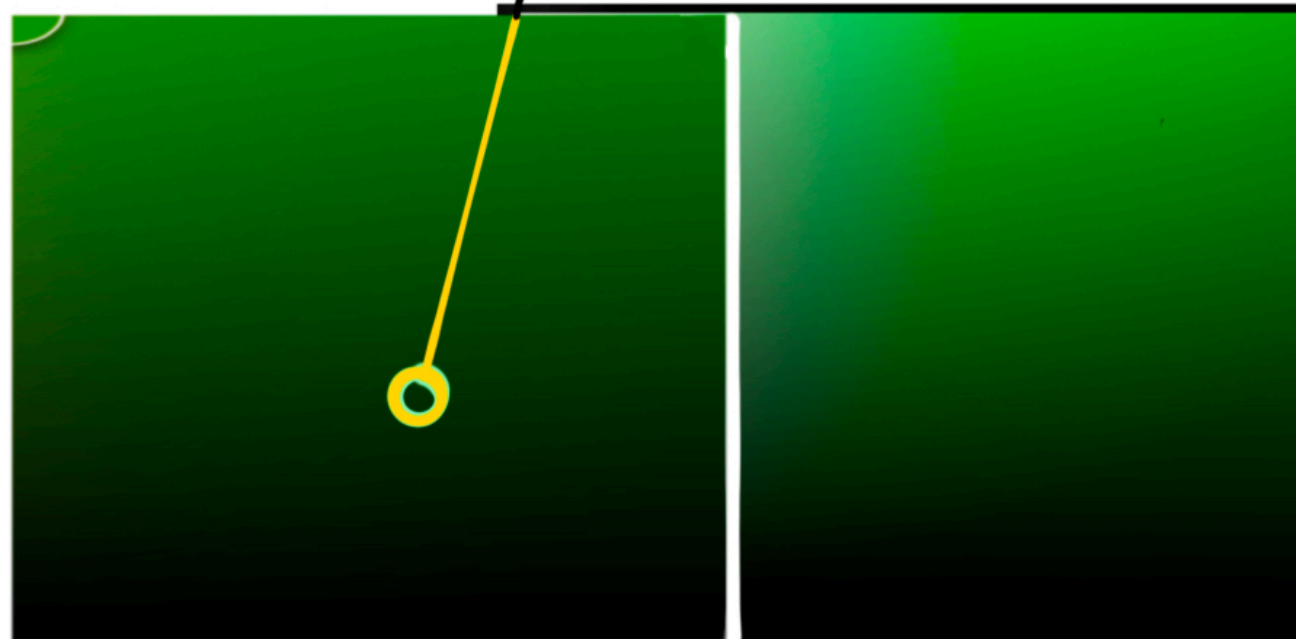
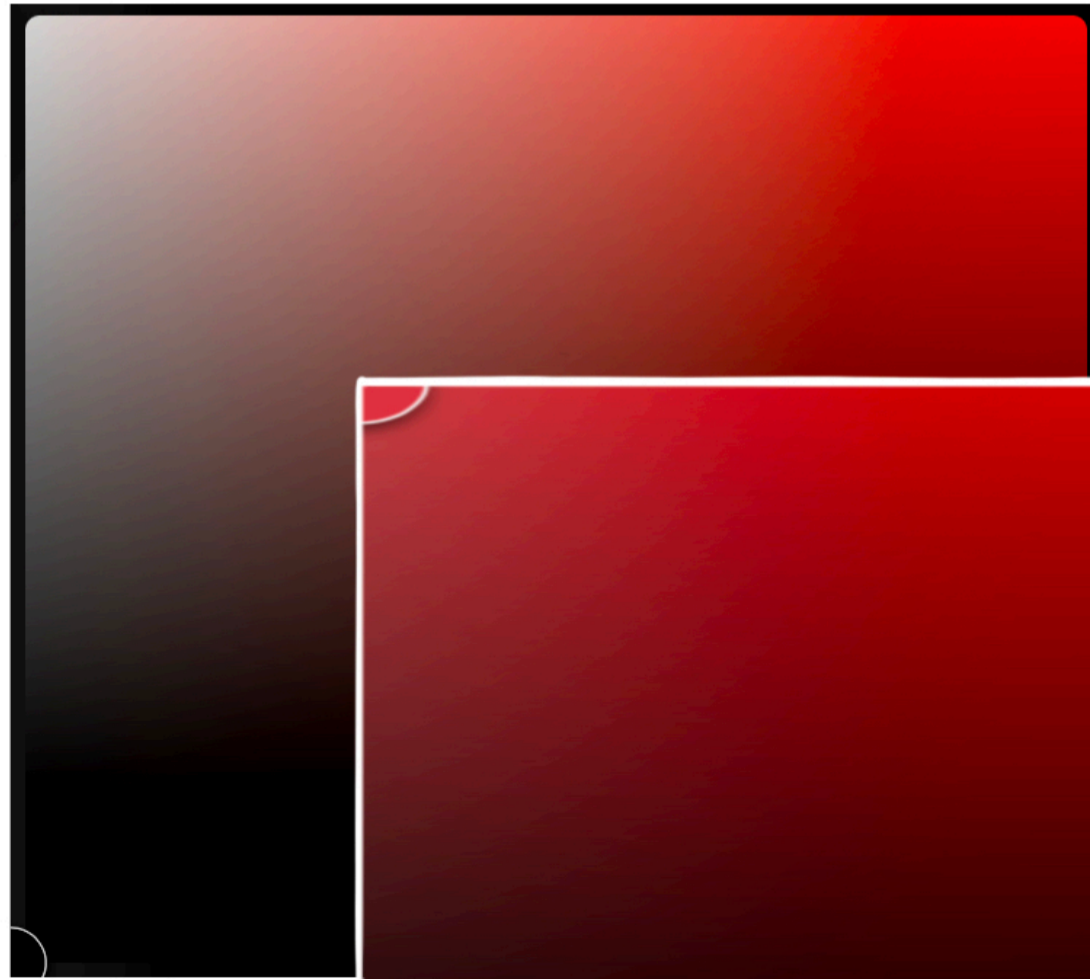




Selected  
Skin  
Tone



Try this with different photos you find online to test how to works



pure  
"red"

Dark  
"green"



**Using this example is a great way to explain to clients what they are able to get tattooed color wise. Couple this example with the “marker test” and you have a few tools to help better define what colors to use on each and every clients skin. Even better, the outputs are based entirely on their skin tone.**

**There are limitations to this exercise:**



# **1. The results aren't exact, just an approximation.**

**While this is helpful as a teaching tool it isn't precise enough to use for ACTUAL mapping of colors. It is just a teaching tool to better illustrate how complex skin tone and color tattoos can be.**

# **2. Varying light sources give different results.**

**This is why I had added the color temp variability in the beginning of this slide presentation. How light is used and what source it comes from, as well as how bright it is or if it is polarized, will all affect how colors show in a photo (or in real life).**



**Consider this an introduction into the complex subject of skin variability. If you want to know more about it please let me know. I'll cook some more slides up.**