



artist daily  
*presents*

# THE COLOR WHEEL AND BEYOND

*Color Theory, Mixing  
Colors, and How to  
Create Complementary  
Color Schemes*



Itten's original color wheel.

# An Introduction to Color Theory

In the early 20<sup>th</sup> century, Johannes Itten's theories on color changed the way artists and scientists viewed the spectrum of colors in the world around them. Here, we outline some of Itten's basic tenets—many of which are still employed by artists today.

*by Naomi Ekperigin*

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Swiss painter and teacher **Johannes Itten** was a pivotal member of the Bauhaus, Germany's most influential art and design school. Founded in 1919 and closed in 1933 under the threat of the Fascist party, the Bauhaus School primarily focused on expressionist art, design, and architecture. From 1919 to 1923, Itten was the main painter at the institution and taught a required introductory course that focused on form and color. The theories developed and taught in this class are still practiced by artists today and are very useful for

beginning artists as they learn to create rich, realistic, and dynamic colors.

Itten's color wheel was a departure from the color wheels employed at his time. Many contained too few or too many colors, making it either difficult to find the connections between hues, or too complicated and rigid to facilitate instruction. Itten's wheel contained twelve colors: the three primary colors, the three secondary, and the six tertiary colors.

**Primary Colors** are the building blocks for all other hues, and cannot be

#### **Newborn Child**

by Georges de La Tour, ca. 1645, oil on canvas.  
Collection Musée des Beaux-Arts, Rennes, France.

created by mixing any other pigments. They are blue, yellow, and red.

**Secondary Colors** are each created from two of the primaries. They are orange, green, and violet. Like the primary colors, they are equidistant from one another on the color wheel.

**Tertiary Colors** are formed by mixing a primary and secondary color. They are yellow-green, yellow-orange,



### Cafe Terrace at Night

by Vincent van Gogh, 1888, oil,  
32 x 26. Collection Rijksmuseum  
Kroller-Mueller, Otterlo.

red-orange, red-violet, blue-violet, and blue-green.

The artist's most notable impact on present-day color theory was the association of certain colors with specific emotions. His book *The Art of Color* was a synopsis of his teachings at the Bauhaus, and was groundbreaking in its study of colors' impact on the viewer. Like other artists and theorists before him, Itten studied colors scientifically as well as artistically. What set

him apart from his contemporaries was the use of psychoanalysis to inform his theories. He looked at the way colors impacted a person, as well as individuals' perceptions of color.

To the artist-educator, there were four "qualities" of a color: hue, intensity, value, and temperature. **Hue** is generally defined as a source color, one of the twelve basic colors on the color wheel. Knowing the root hue allows one to mix the color that he or she sees using a basic palette. **Value** is the lightness or darkness of the color relative to white, black, and gray. **Intensity** is the brightness or dullness of a color, often determined by the amount of white or complement has been mixed with it. It is measured relative to the brightest color wheel hue that is closest to the color. Often the words **chroma** and **saturation** are used interchangeably with intensity. **Temperature**, to Itten, was the idea of a color being "warm" or "cool"—terminology still used by artists.

Itten was also one of the first to develop successful methods of creating striking color contrasts. His seven methods were the contrast of saturation, contrast of light and dark, contrast of extension, complementary contrast, simultaneous contrast, contrast of hue, and the contrast of warm and cool.

Saturation relates to the degree of purity of a color. The **contrast of saturation** is the juxtaposition of pure, intense colors and dull colors. This





**Virgin of the Chancellor Rolin**  
by Jan van Eyck, 1435, oil on wood, 26 x 24.  
Collection the Musée du Louvre, Paris.





### Reading by Lamplight

by James McNeill Whistler, 1858, etching and drypoint printed in black ink on ivory laid paper, 6 13/16 x 4 7/16. Collection The New York Public Library, New York, New York.

can be seen in Georges de La Tour's *Newborn Child* as the women's bright clothes, illuminated by candlelight, offer a sharp contrast to the dull background colors.

**Contrast of light and dark** is created when, as the name suggests, light and dark values of a color are juxtaposed. The most obvious examples of this are pen-and-ink and graphite drawings as well as etchings and prints. You can see this at work in James McNeill Whistler's *Reading by Lamplight*.

The **contrast of extension**, also known as a contrast of proportion, is based on the relative areas of two or more areas of color, such as large and small, or much and little. In Pieter Brueghel's *Landscape With the Fall of Icarus*, this contrast is at work in the juxtaposition of a large body of blue water and a small patch of sky.

A **complementary contrast** exists when two complementary colors (colors that are opposite each other on the color wheel) are placed side-by-side. Jan van Eyck's *Virgin of the Chancellor Rolin*, the red and green motif (in the robe, lectern, and angel's wing) is Itten's primary example of this contrast.

**Simultaneous contrast** occurs when opposing colors are placed next to each other, creating the illusion of vibrations or shadows. In Vincent van Gogh's *Café Terrace at Night*, the use of dark blue for the figures on the terrace makes them appear to be shadows, primarily because of the contrast between the light orange-yellow and dark blue.

A **contrast of hue** is the easiest to identify, as is created by the juxtaposition of different hues. Itten reasons that the intensity of the contrast diminishes as the hues move farther away from the primary colors. The most extreme example of this contrast is red/yellow/blue, and can be seen in Alessandro Boticelli's *Lamentation Over the Dead Christ With the Saints Jerome, Paul, and Peter*.



The contrast of warm and cool is created when colors that are considered “warm” or “cool” (as defined by Itten) are juxtaposed. Warm colors such as red, orange, yellow, and browns evoke a feeling of warmth and comfort, and are attractive to the viewer. As a result, objects painted this color appear to move forward. Cool colors, such as blue, green, and grays, recede into the background. Psychologically, Itten found that they were associated with sadness and melancholy. Many of the great Impressionist painters employed this contrast in their landscapes. In Camille Pissarro’s work, red/brown/orange in architectural features like houses and churches are often juxtaposed with cool skies, establishing depth and perspective for the viewer.

When viewing works of art, most viewers see these contrasts at work, but do not know how to identify them. For an artist, knowledge of the basic tenets of color theory can help him or her evoke emotion and leave an impact on the viewer. And just as Itten’s methods can be adopted to yield certain effects, they can also be subverted to shock the viewer and show subject matter in startling ways.



ABOVE  
**Lamentation Over the Dead  
Christ With the Saints Jerome,  
Paul, and Peter**

by Alessandro Botticelli, ca. 1495,  
tempera on panel, 42 x 28. Collection the  
Museo Poldi Pezzoli, Milan.



LEFT  
**Landscape with the Fall of Icarus**

copy of original by Pieter Bruegel, ca. 1558,  
oil on wood, 29 x 44. Collection the Musees  
Royaux des Beaux-Arts de Belgique, Brussels.



**Still Life of Egg and Glass**

by Jacob Stevens, 2007, oil on board, 24 x 18. Private collection.

# Working with a Complementary Palette

Working with a complementary palette can lead to  
harmonious paintings and the creation of clear, vibrant colors.

*by Naomi Ekperigin*

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For many artists, choosing a palette can be difficult. Each poses different sets of benefits and challenges, and it can take time to learn to maximize a palette's effectiveness. A palette can be made with as few as three colors, and traditional painting is taught with the rule that the primary colors red, yellow, and blue can be used to make all other hues. However, there are several options for creating harmonious, visually pleasing paintings using a variety of palettes. For some, using complementary colors (those opposite one another on the color wheel) offers a viable alternative to a traditional palette. "Using only two families of color (complementary colors) will naturally give your paintings strength and harmony," says Joyce Washor in her book *Big Art, Small Canvas: Paint Easier, Faster, and Better With Small Oils* (North Light Books, Cincinnati, Ohio). "An infinite number of colors can be mixed with the hues in complementary palettes." Washor first began working with a complementary palette more than 10 years ago as a student at the Woodstock School of Art, in New York, when she took a class with painter HongNian Zhang. "I was getting a lot of muddy color mixtures, and I found using a complementary palette alleviated this problem--although it took me about two years to really get the hang of it." The three different palettes she uses are red/green, yellow/purple, and blue/orange, which she employs when working in both oil and watercolor. She determines her palette based on the overall mood of the scene or still life.

Washor now teaches several workshops a year on this technique, and asserts that while it may seem simple,

the palette is actually quite complex. "It's the theory of the complementary palette that makes it so effective. It's based on the idea of yin and yang," she says. "All aspects of painting can be interpreted this way: value (dark versus light); composition (up and down or left to right); color temperature (warm versus cool); color intensity (soft versus strong); and color hue (green versus red, orange versus blue, and yellow versus purple)." The artist paints portraits, landscapes, and still lifes, and now primarily paints miniature works. "Small paintings have taught me the art of careful color observation," she notes in her book. "An object may not be immediately recognizable just by its size, so the color has to be representational in order to identify it." When preparing a setup, she considers which objects would fit in the color scheme she wishes to work in—her favorite is red/green.



“In my workshops, the first thing I do is have the students make a color chart,” Washor says. “For example, I lay out all the reds and greens if that’s the palette we’re working with, and have them mix them so that they have an idea of the full range of colors available.” Washor’s red/green palette consists of chrome green, permanent green light, Winsor green, sap green, raw umber, bright red, chrome orange, permanent rose, Indian red, purple madder alizarin, blue black, and Permalba white; her preferred brand is Winsor and Newton. “I explain to students that there are some colors they

aren’t going to get. For example, with a red/green palette, a truly vibrant blue is not possible. However, the blue you do get will maintain the harmony of the painting, and when the viewer sees it in relation to the other colors in the piece it will appear blue.” Washor also notes that there seem to be a wider range of grays when working with this type of palette.

Jacob Stevens, an artist based in Tucson, Arizona, began working with a complementary palette for the same reasons as Washor. “I am a professional video game artist, but I work in traditional media such as oil as a way

### Three Onions

by Joyce Washor, 2007, watercolor, 3 x 4. Collection the artist.

Washor used an orange/blue palette for this piece.



of exploring my technique beyond the digital realm,” he explains. “I had been taught that the primary colors red, yellow, and blue could be used to mix any color. That just didn’t seem true to me—the colors I mixed using the primary colors were dull and muddy compared to the premixed colors I bought at the store.” About a year ago, Stevens began experimenting with alternative color palettes in an attempt to save money on tube colors, as well as to simplify his color mixing yet still create colors that were full of life. Of his several experiments, he has found the complementary color palette to be the most intuitive. “I’m also no longer intimidated by the wide variety of colors offered in art stores because I know

I can make any of those colors using a complementary palette,” he adds. Stevens classifies himself as a traditional realist painter, and, like Washor, finds his palette suits a whole host of subjects.

Complementary palettes are effective for creating rich color because colors appear most vibrant when placed next to their complements. In much of Washor’s work the results of a complementary palette are many neutral tones spiked with contrasting bursts of color and bright highlights—highlights tempered by their complements, which tie the composition together even tighter. Using complementary colors can also draw the viewer’s eye to your focal point. When mixing colors, Washor

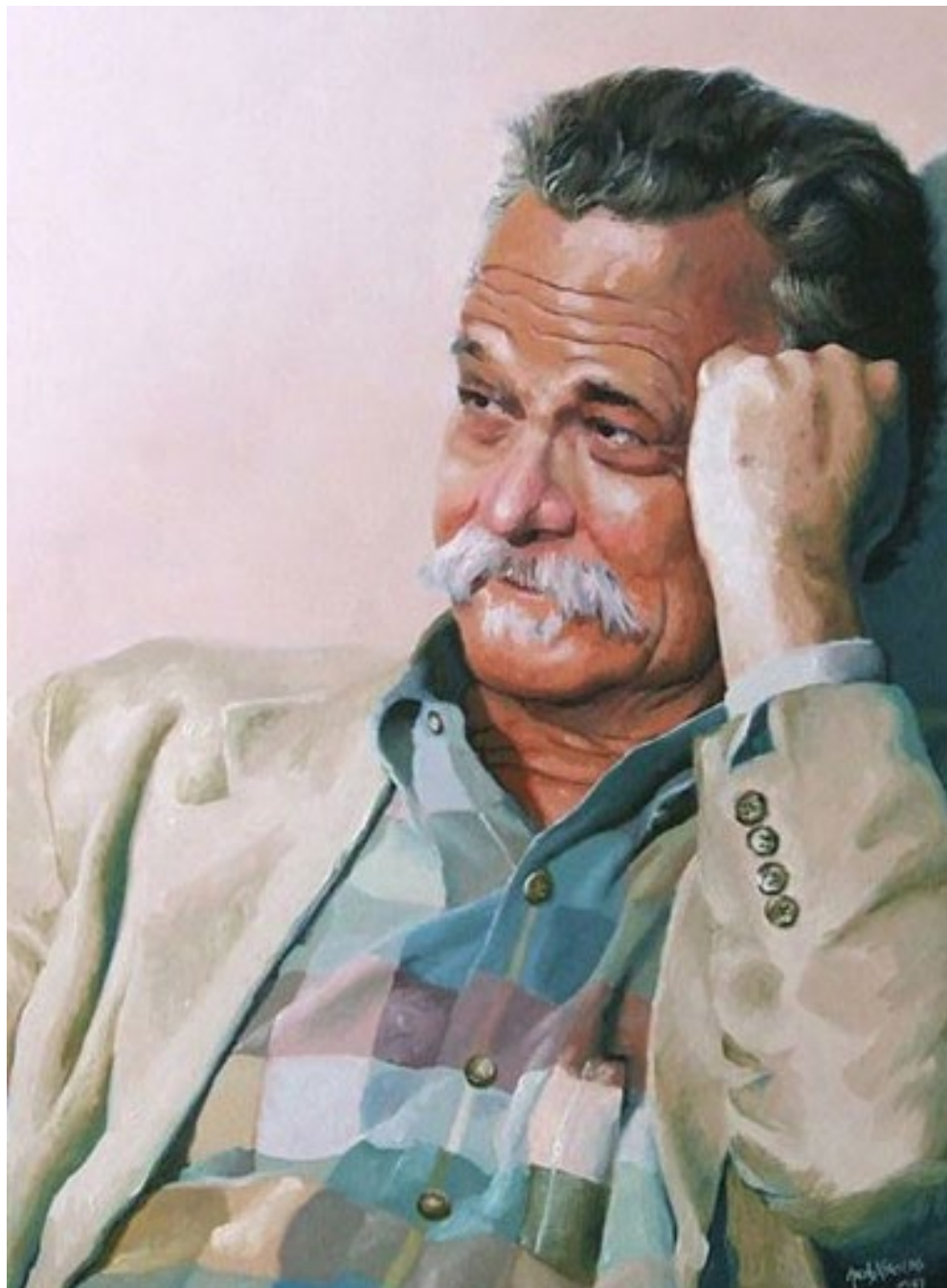
**Overtured Vase**

by Joyce Washor, 2007, oil painting.



recommends using a palette knife to add colors in very small amounts. “If you add too much paint and the color is too far off, discard the pile and start again, but save the pile for future use,” she says in her book. “Ninety percent of the time I find that it’s applicable to another part of the painting. This is another advantage of the complementary palette. Colors are so harmonious that even mistakes are usable.” One of the biggest challenges artists face with this palette is training their eyes to see the subtle nuances in color temperature and intensity. Working slowly and taking ample time to study a subject before picking up a brush helps an artist become more familiar with these subtle variations over time.

Overall, both Washor and Stevens find that a complementary palette has far more benefits than disadvantages. “It takes time to learn to master any kind of palette,” says Washor. Those who are interested in experimenting with a set of complementary colors should be open, patient, and willing to take risks as they discover new ways to render their favorite subjects. ■



**Melton**

by Jacob Stevens, 2007, oil painting on board, 18 x 25. Private collection.





Six Color Prismatic Palette: Cadmium Red Light, Alizarine Crimson, Cadmium Yellow Pale (or Cadmium Yellow Lemon), Cadmium Yellow Medium (or Yellow Ochre), Ultramarine Blue, Cobalt Blue, plus Ivory Black and Titanium White.

# Color Mixing Secrets for the Plein Air Painter

by John Hulsey

Painting outdoors on location poses unique challenges compared to the well-controlled studio environment - no question about that! With the explosion of interest in plein air painting, there has been a commensurate increase of interest in educational workshops taught by experienced artists. Perhaps this is because upon beginning to paint outdoors, one quickly realizes how difficult and frustrating it can be to create even a small, pleasing picture from hours spent hard at work. There is so much to learn, and the quickest way to get there is to study with someone who has spent years learning the ins and outs of landscape painting. We teach plein air workshops

in order to help cut years off of the plein air learning curve for our students. This article shows the unique method that we have developed and that we teach our workshop students to quickly analyze the local color and values, premix all the colors needed for the whole painting and develop a consistent color harmony among the premixed colors.

Every successful plein air painter we have come across uses a disciplined, systematic approach to analyze the subject in front of them, simplify it, and then restate it in painterly terms. This is how we approach the task of mixing correct values and harmonious color relationships:

## STEP ONE

Arrange the colors on your palette, from warm to cool as shown on previous page. We recommend that you read our article: [The Educated Palette](http://www.theartistsroad.net) at [www.theartistsroad.net](http://www.theartistsroad.net) first and be thoroughly familiar with all the concepts there. After you have done this, mix the three secondaries from the primaries in your palette. To save time in the field, we suggest that you mix these secondaries up in advance in your studio.

Over time, you will arrange your primary colors to your liking. As shown here, I have moved my reds and yellows around a bit to reflect my own preferences, but I still keep the warm and cools separated so that I can reach for them without thinking about where they are. Once you arrive at the optimal arrangement, don't change it and your brush will always find the right color. This green mix is perfect - neither too blue nor too yellow.

Why mix secondaries when we can easily buy them ready-made? We believe that the only way to truly understand color relationships is to experience mixing them. The confidence and speed you get from knowing which colors will make what mixed tone and how colors affect each other will automatically improve your paintings.



Green secondary mixed from Cad. Yellow Light and Cobalt Blue.



Orange secondary mixed from Cad. Red Light and Cadmium Yellow Light.



Violet secondary mixed from Quinacridone Rose and Ultramarine Blue. To get a cleaner, brighter violet, I added Quinacridone Rose to my palette.





Take your time when mixing the secondaries! It is very important to mix them so that they do not lean toward one or the other primary. They should sit right in the middle. Compare them to the pure primaries as you mix, using your palette knife like a trowel or cake spatula to smooth the colors into each other with a flat, sawing motion. Then place them in your palette where you can cross-mix them to develop those beautiful grays.

## STEP TWO

Once you have located your subject and set up your gear, develop an effective composition and get that drawn on your canvas or board. If you are unsure of how to achieve this, refer to our article, [The Artist's Road Guide to Composition](#) at [www.theartistsroad.net](http://www.theartistsroad.net), for exact information.

My painting subject in Abiquiu, New Mexico.





ABOVE  
My gear and  
finished study



ABOVE  
Getting the values right  
with the sight-through  
grey scale.

## STEP THREE

Using your palette knife, premix the colors in your landscape subject. We suggest that you first mix only the one or two largest masses of color, which you determine by squinting. As you mix these base colors, constantly compare them in value to your subject. This process is made simpler by the use of a sight-through gray scale, as shown. First match the actual observed value of your major masses to a point on the scale, and then mix your color to match that gray value, using a palette knife. Just hold up your brush or palette knife with the mixed color on it in front of the scale and adjust it until it matches the value you have determined is correct.

You will want to use the gray scale for every plein air painting. To modify it like the one we use, see, [Perspectives No. 86, Hit the Right Values Every Time](#). In this painting, one of my main masses is green, which is a secondary color, and the other mass is violet, another secondary, so this is an easy-to-understand example of our basic principles.





## STEP FOUR

Premixed colors on my palette.

Placing your two piles of accurately mixed base color in your palette as shown, start blending one into the other. Use the flat of a large palette knife with a sliding, sawing motion to do this. Move a small amount of color **A** over to color **B** where you'll get some of that mixed in and then work that back toward **A** again. Repeat this operation until you have a gradated set of colored grays that represent all the various tones of the two colors as they change in hue from **A** to **B**. You have just harmonized your two base colors to each other!



Where I used the premixed colors in this painting.

## STEP FIVE

Let's take this a step further and create some more harmonized grays on either side of our two main colors. I like to use complementaries or even tertiary colors to do this, so that I can get a nice range of cools and warms. In this example, I've used Cadmium Orange to the left of A, and Alizarine Crimson to the left of B, and mixed them with my knife as above. Look at those beautiful grays! Joaquin Sorolla said that "the money is in the grays", and he was right. 90% of our paintings should consist of colorful grays such as these, with only touches of pure colors here and there to bring it all together. These are now all the colors I will need to complete my painting, and because they all share something of each other, they are all in harmony together.

## STEP SIX

Paint the entire picture with only these colors, not adding new colors after this point. They will stick out like a sore thumb. If you run out of a color, stop and remix it the same as before. Over time you'll get a sense of how much paint to mix up front. My original two base colors now work as pure hues, while all the other mixes are gradations of those main tones. It is a simple matter at this point to add white to any of these colors to effect a tint or highlight, or add black to make an accent. Note: when you need a large quantity of highlight color, start with a pile of white paint first, and then add small amounts of your premixed color to it, not the other way around. You'll avoid wasting lots of white paint this way. ■





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work or possessions.*

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We understand this. Having spent a lifetime exploring and finding meaning through art, we decided to build the Artist's Road website to share what we have learned. Some of the content you'll find there is instructional - like the steps to making great paintings or how to make Photoshop work for you.

But just as important are the stories we share - the experiences and adventures we have had in nearly 40 years of making our way along the Artist's Road, traveling throughout the U.S. and abroad. Enjoy the free content, it's our gift to you. It is our hope that you will find value, encouragement and inspiration in it. If you do, please consider joining as a member in supporting this effort. We believe that more artists in the world is good for everyone.

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