Walter Foster

SPECIAL SUBJECTS
BASIC COLOR THEORY

40 PAGE STEP-BY-STEP PAINTING BOOK

AN INTRODUCTION TO COLOR FOR BEGINNING ARTISTS

- The color wheel
- Color relationships
- Basic mixing
- Temperature & mood

100 YEARS of excellence

BASIC COLOR THEORY

Color is a universal gift of beauty. Because it requires no effort to perceive and enjoy it, we often take it for granted. However, its absence in our lives is unthinkable. Consider a world wherein brilliant sunsets, vivid flower gardens, shimmering butterflies, and tropical fish shed their multicolored hues and morphed into monochromatic shades of gray. The experiences that we love and live for would change drastically! Would we still plant flower beds? Bird-watch? Sightsee? The implications are immense; such is our love affair with color.

—Patti Mollica

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WHAT IS COLOR?

Artists must understand color to know how to use it properly. Although there will always be some personal influence in the way we interpret and display it, we must understand color relationships before we can organize it in our paintings.

In the late 1600s, Sir Isaac Newton (1642–1727) conducted and published a series of experiments involving prisms, light, and color, which form the basis of our current understanding of color. These experiments involved refracting white light through a prism—a simple triangular glass object that separates light waves into individual colors. The results revealed that light could actually be broken down into seven individual colors: red, orange, yellow, green, blue, indigo, and violet. Until this discovery, it was assumed that a prism somehow "colored" the light passing through it. To prove this wrong, Newton reversed the process: He projected the colors back into the prism, which resulted in pure white light. Artists and scientists alike were amazed by this breakthrough discovery that *light is the source of all color*.

As white light hits a prism, the light refracts and separates into the colors of the rainbow.
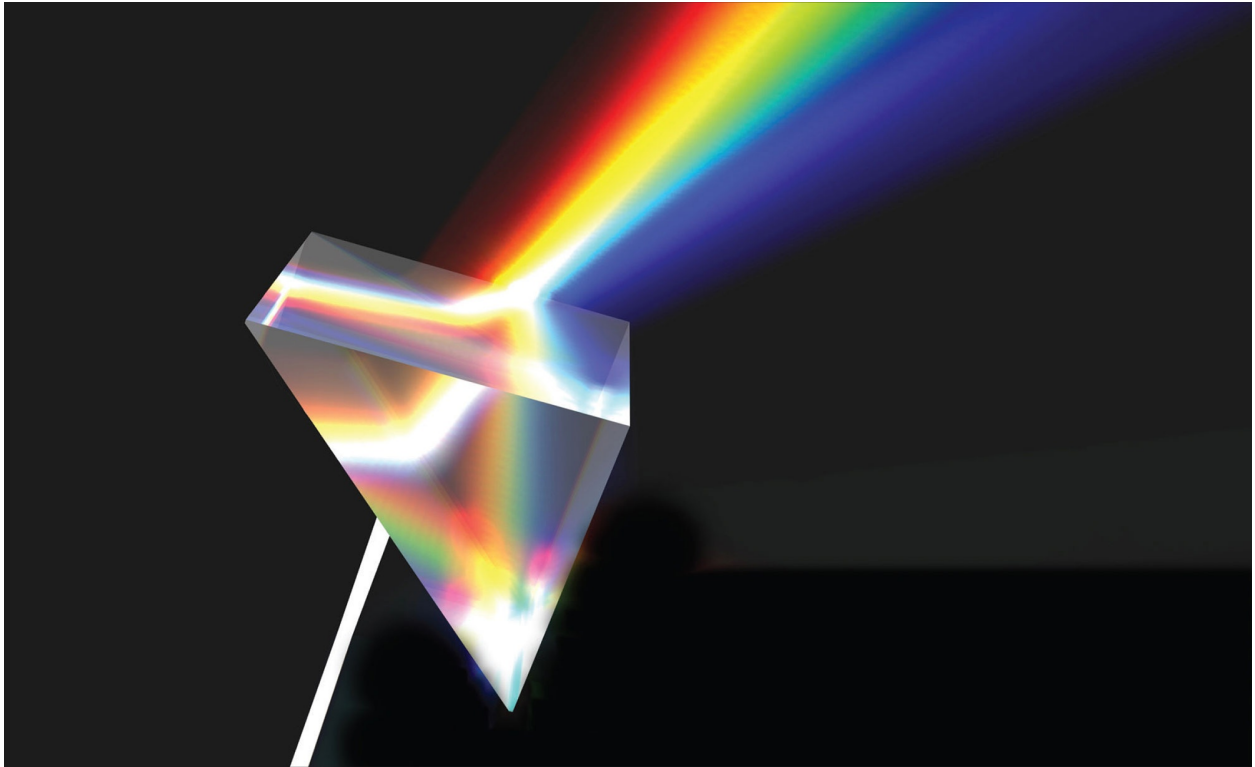
Scientist Sir Isaac Newton provided the foundation for color theory as we understand it today.

UNDERSTANDING LIGHT

The colors that we see when light strikes an object are the result of certain wavelengths (individual colors) being absorbed by the object while other wavelengths are being reflected back to us. Those reflected back to us are the colors that we see.
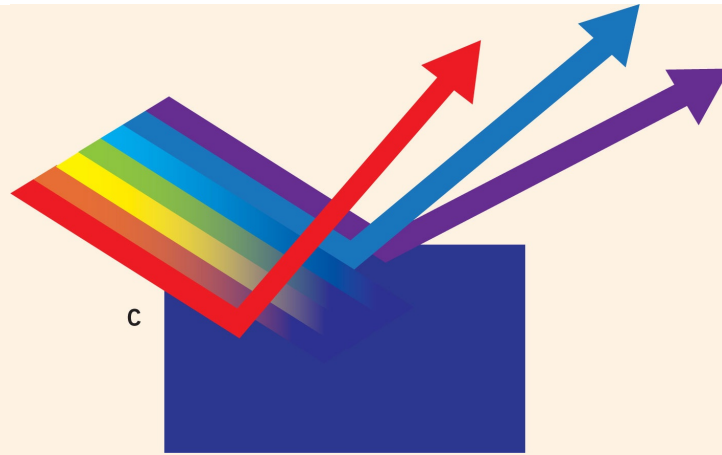
LIGHT & REFLECTED COLOR
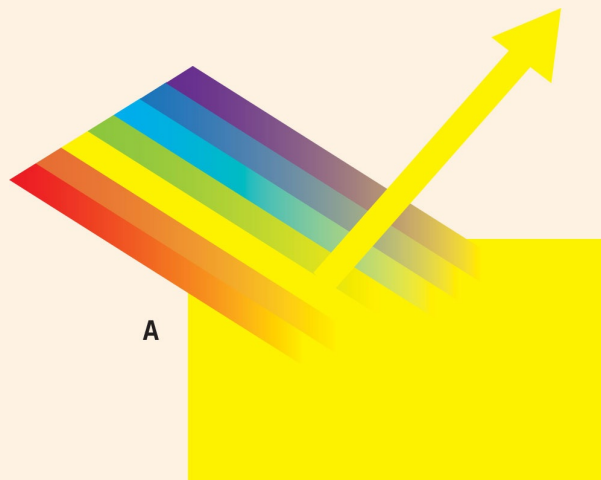
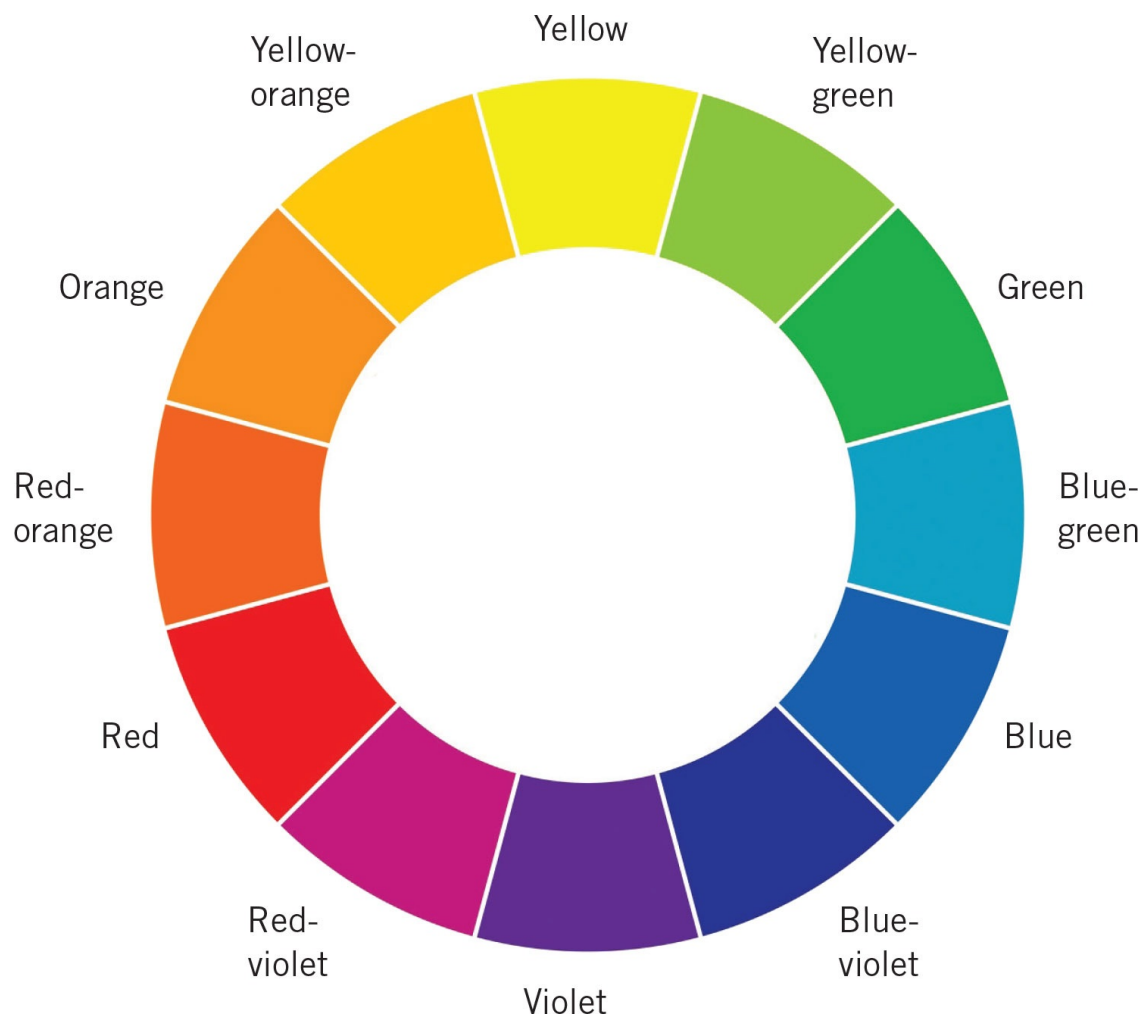As light hits a yellow object, yellow is reflected; all other colors are absorbed.
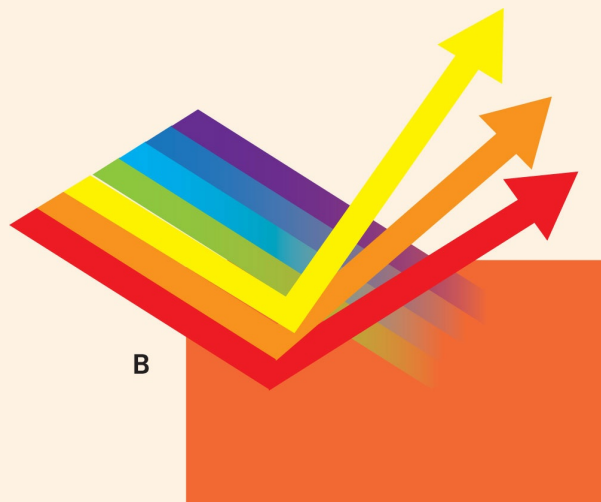
As light hits an orange object, yellow, orange, and red are reflected; all other colors are absorbed.

c

As light hits a purple object, red, blue, and violet are reflected; all other colors are absorbed.

THE COLOR WHEEL

A color wheel is a visual representation of colors arranged according to their chromatic relationship. The basic color wheel consists of 12 colors that can be broken down into three different groups: primary, secondary, and tertiary.

Yellow

Yellow-orange

Yellow-green

Orange

Green

Red-orange

Blue-green

Red

Blue

Red-violet

Blue-violet

Violet

One of the easiest things to create is a 12-color color wheel with just the three primaries: red, yellow, and blue. All colors are derived from these three. Beginners should mix a color wheel with both the primaries and secondaries. This can help you understand how to create additional colors, see how colors interact, and see your palette of colors in spectrum order.
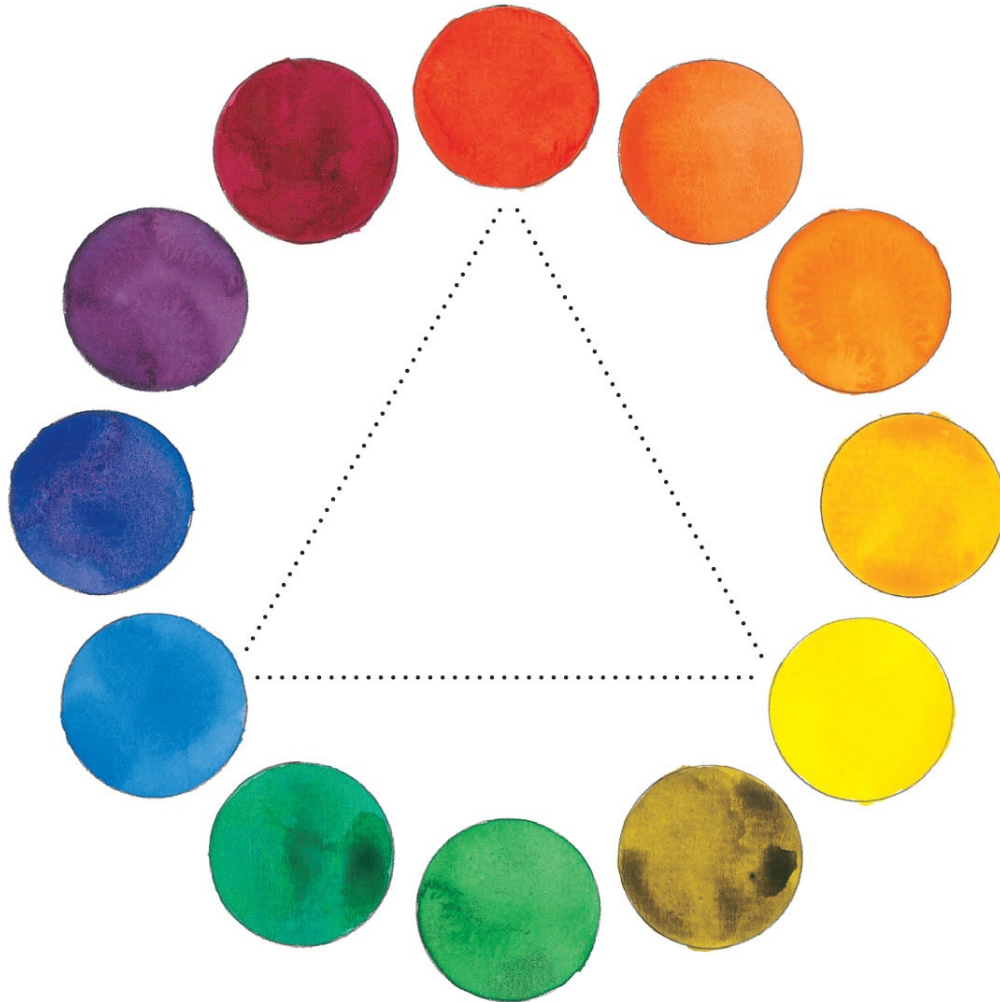

Color wheel made with three primaries

Color wheel made with primaries and secondaries

# THE BASICS OF COLOR

Primary Colors

The primary colors are red, yellow, and blue. These colors cannot be created by mixing any other colors, but in theory, all other colors can be mixed from them.

Secondary Colors

Secondary colors are created by mixing any two primary colors; they are found in between the primary colors on the color wheel. Orange, green, and purple are secondary colors.
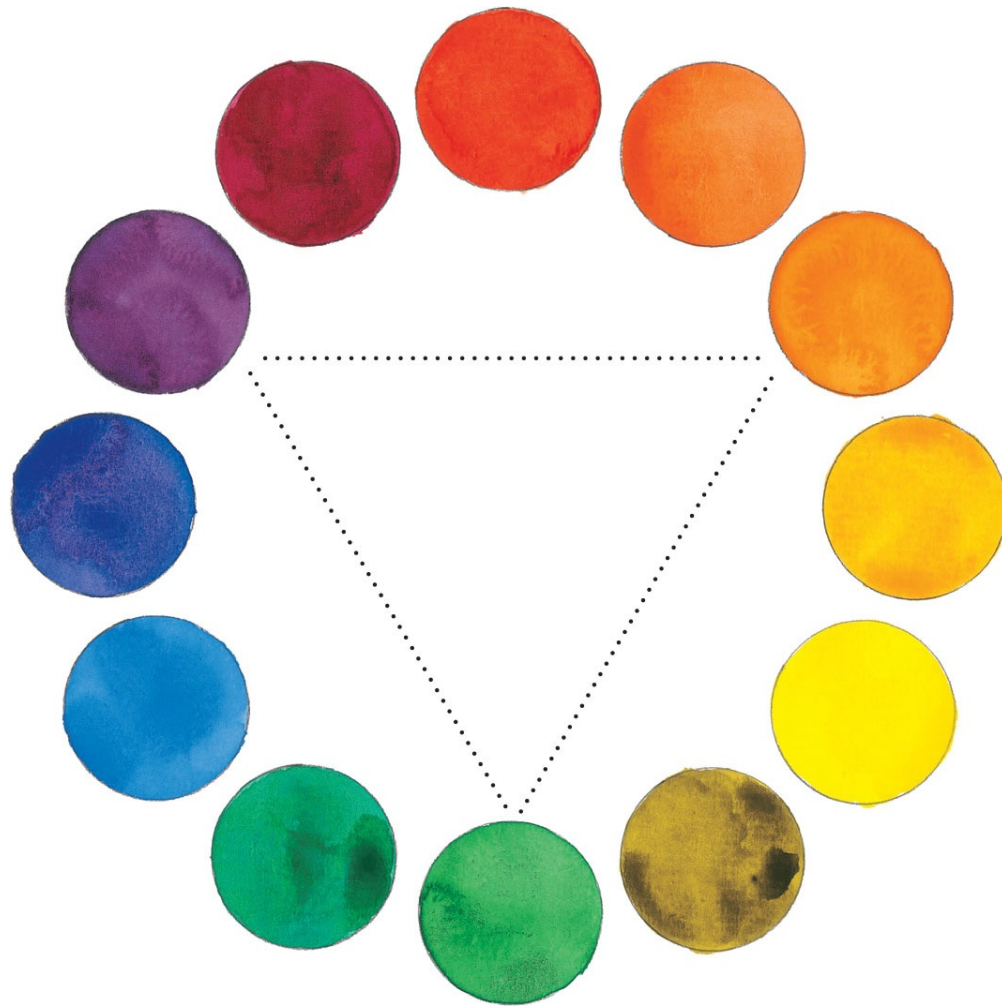
Tertiary Colors

If you mix a primary color with its adjacent secondary color, you get a tertiary color. These colors fill in the gaps and finish the color wheel. Tertiary colors are red-orange, red-violet, yellow-orange, yellow-green, blue-green, and blue-violet.
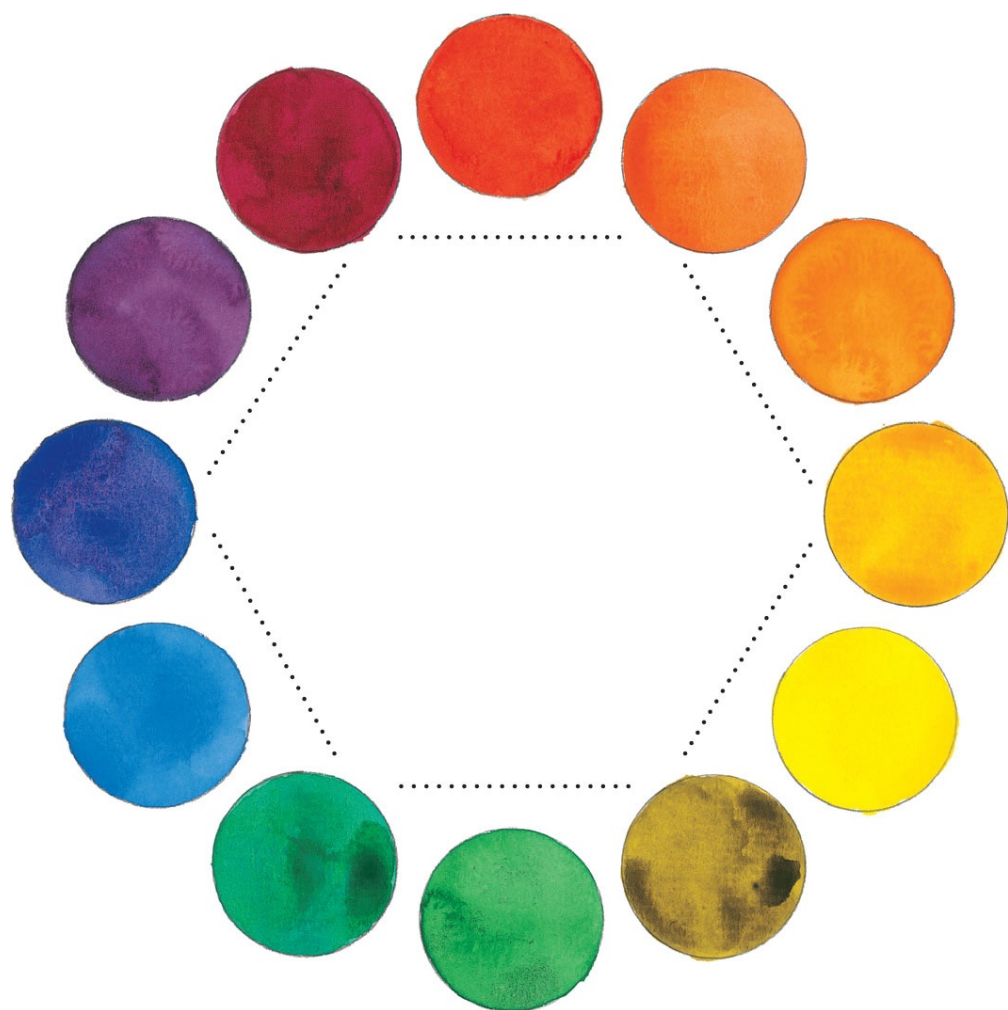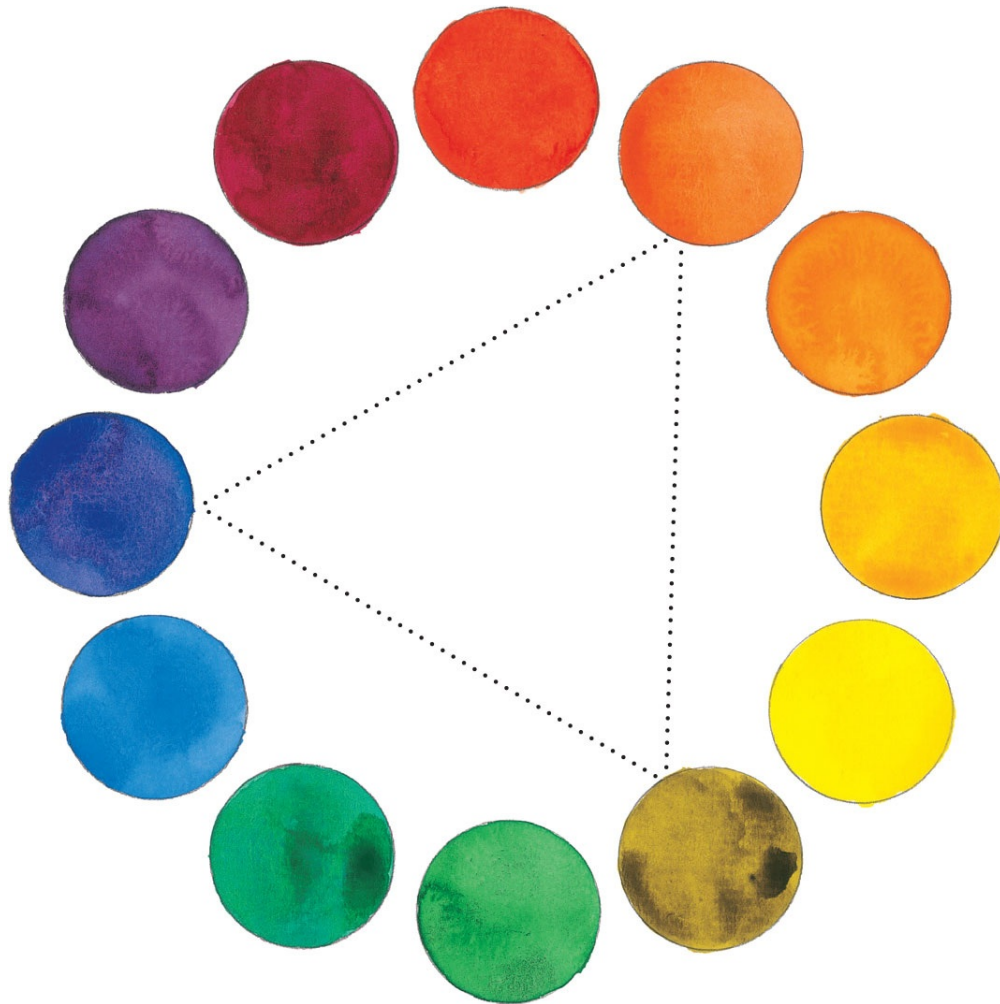
COLOR SCHEMES

Choosing and applying a *color scheme* (or a selection of related colors) in your painting can help you achieve unity, harmony, or dynamic contrasts. This page showcases a variety of common color combinations. Explore these different schemes to familiarize yourself with the nature of color relationships and to practice mixing colors.

Complementary Color Schemes Complementary colors are opposite each other on the color wheel. Red and green (shown above), orange and blue, and yellow and purple are examples of complementary colors. When placed adjacent to each other in a painting, complements make each other appear brighter. When mixed, they have the opposite effect, neutralizing (or graying) each other.

Triadic Color Scheme This scheme consists of three colors that form an equilateral triangle on the color wheel. An example of this would be blue-violet, red-orange, and yellow-green (shown above).
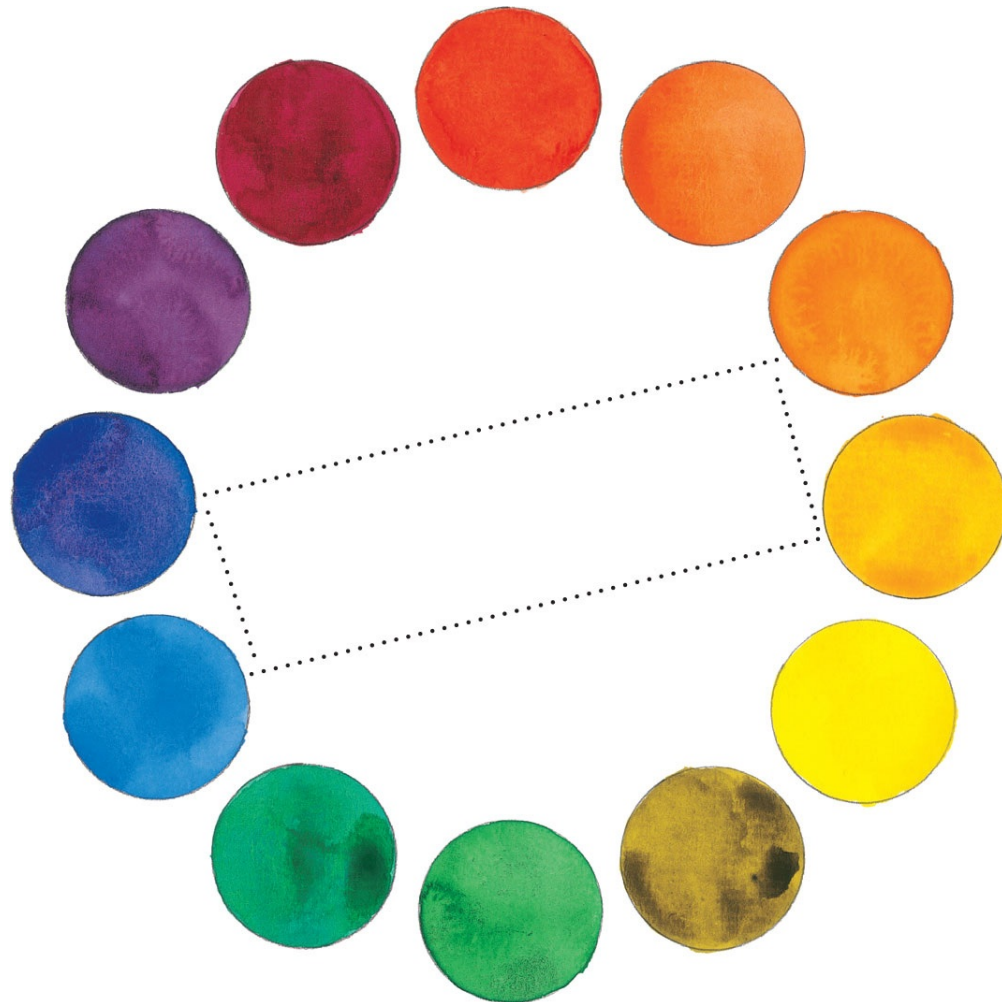
Tetradic Color Schemes Four colors that form a square or a rectangle on the color wheel create a tetradic color scheme. This color scheme includes two pairs of complementary colors, such as orange and blue and yellow-orange and blue-violet (shown above). This is also known as a "double-complementary" color scheme.
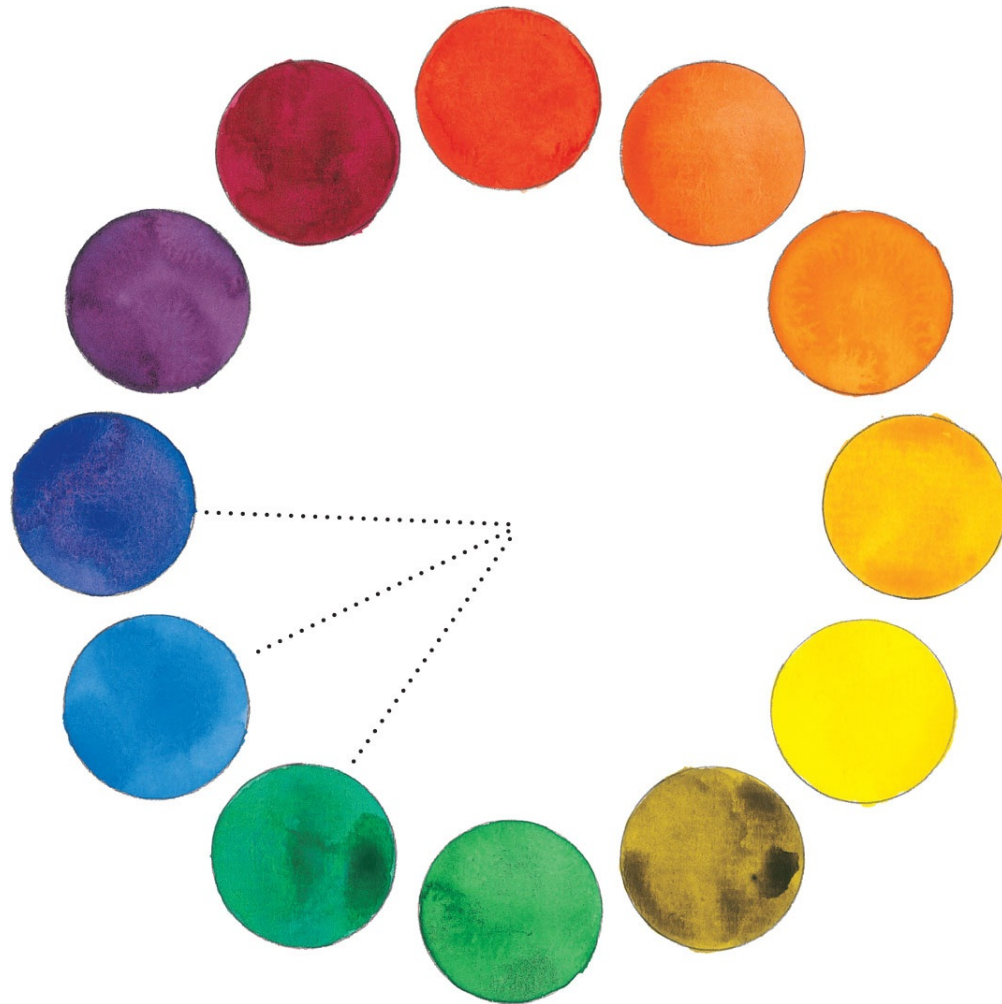
Analogous Color Schemes Analogous colors are adjacent (or close) to each other on the color wheel. Analogous color schemes are good for creating unity within a painting because the colors are already related. You can do a tight analogous scheme (a very small range of colors) or a loose analogous scheme (a larger range of related colors). Examples of tight analogous color schemes would be red, red-orange, and orange; or blue-violet, blue, and blue-green (shown at left). A loose analogous scheme would be blue, violet, and red.
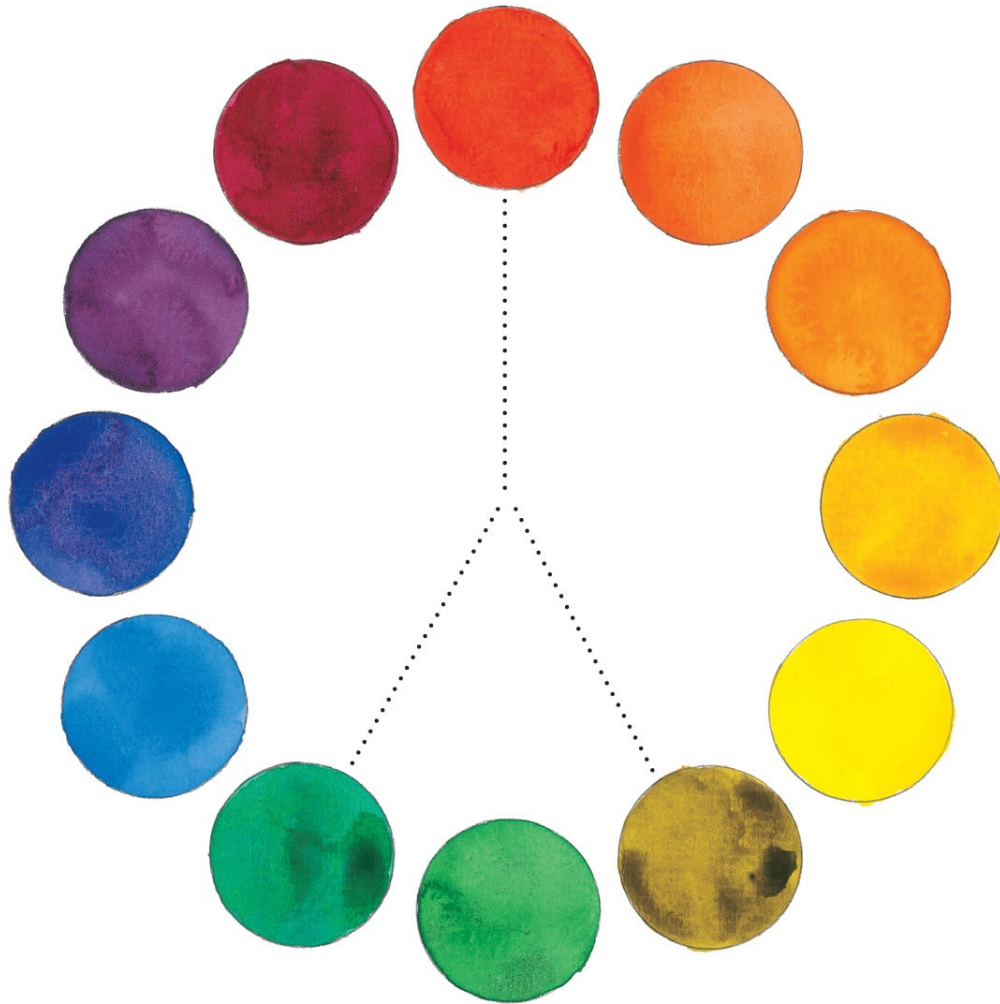
Split-Complementary Color Schemes This scheme includes a main color and a color on each side of its complementary color. An example of this (shown at left) would be red, yellow-green, and blue-green.

COLOR PROPERTIES

Hue, saturation (or intensity), and value are the three characteristics that help us describe and categorize a color. For instance, if we say an object is red, we can more specifically describe the color by answering the following questions: Is it an orangey red or a crimson red? Is it brilliant or muted? Is it light or dark? With this understanding, you can identify and describe any color.

HUE

The term "hue," which is often used interchangeably with the word "color," refers to the family to which a particular color belongs. Rose, burgundy, magenta, and candy apple are all in the red hue family. Chartreuse, leaf green, and sea-foam are all in the green hue family, and so on. In essence, when one uses the word "color," one is referring to its hue. Below are five swatches of blue that show different hues within the same color family.
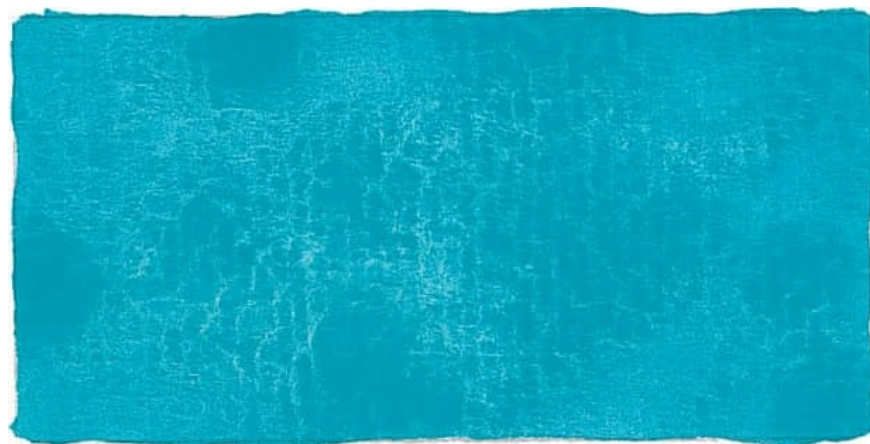
Phthalo blue:
a greenish blue
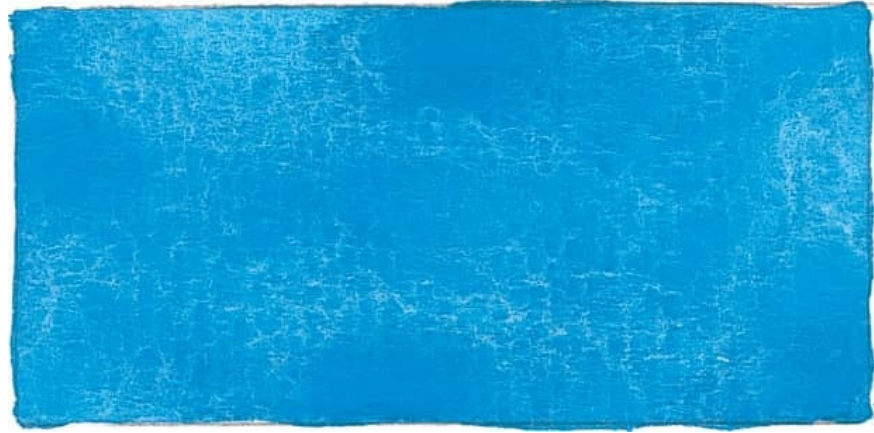
Cobalt turquoise light:
a bright, greenish blue
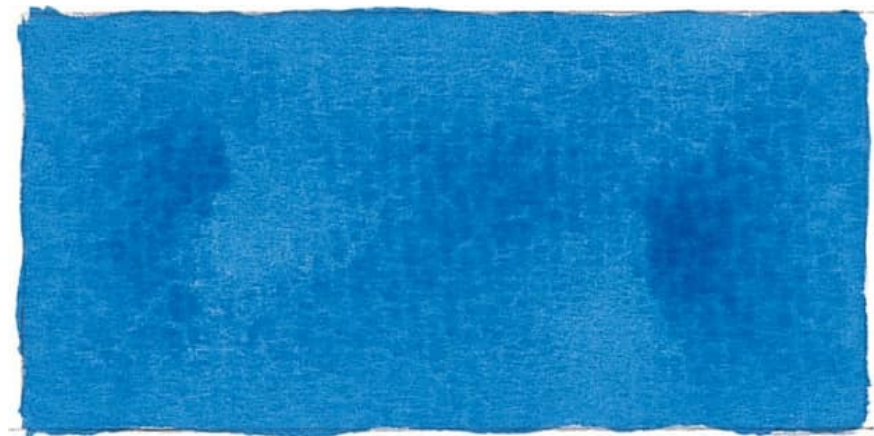
Cerulean blue:
a bright, grayish blue
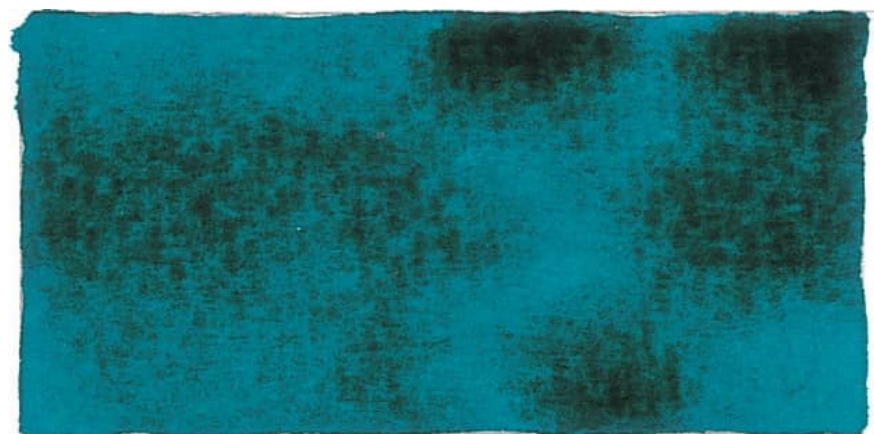
Ultramarine blue:
a cool, reddish blue
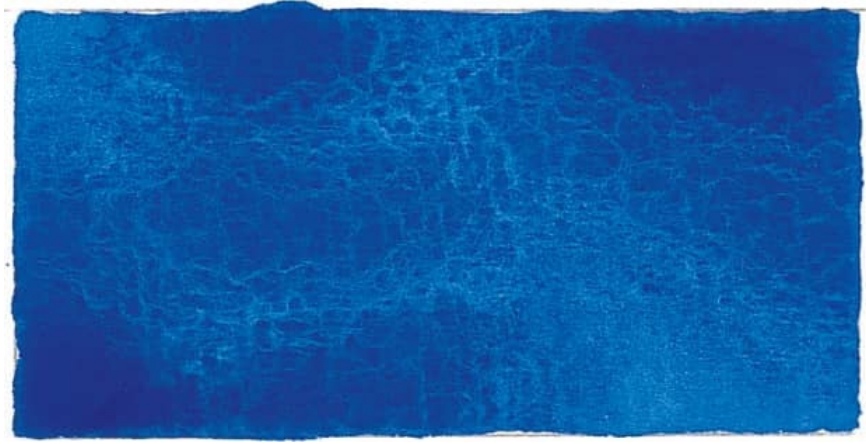
Cobalt blue:
a pure blue

VALUE

Within each hue, you can achieve a range of values—from dark shades to light tints. However, each hue has a value relative to others on the color wheel. For example, yellow is the lightest color and violet is the darkest. To see this clearly, photograph or scan a color wheel and use computer-editing software to view it in grayscale. It is also very helpful to create a grayscale chart of all the paints in your palette so you know how their values relate to one another.
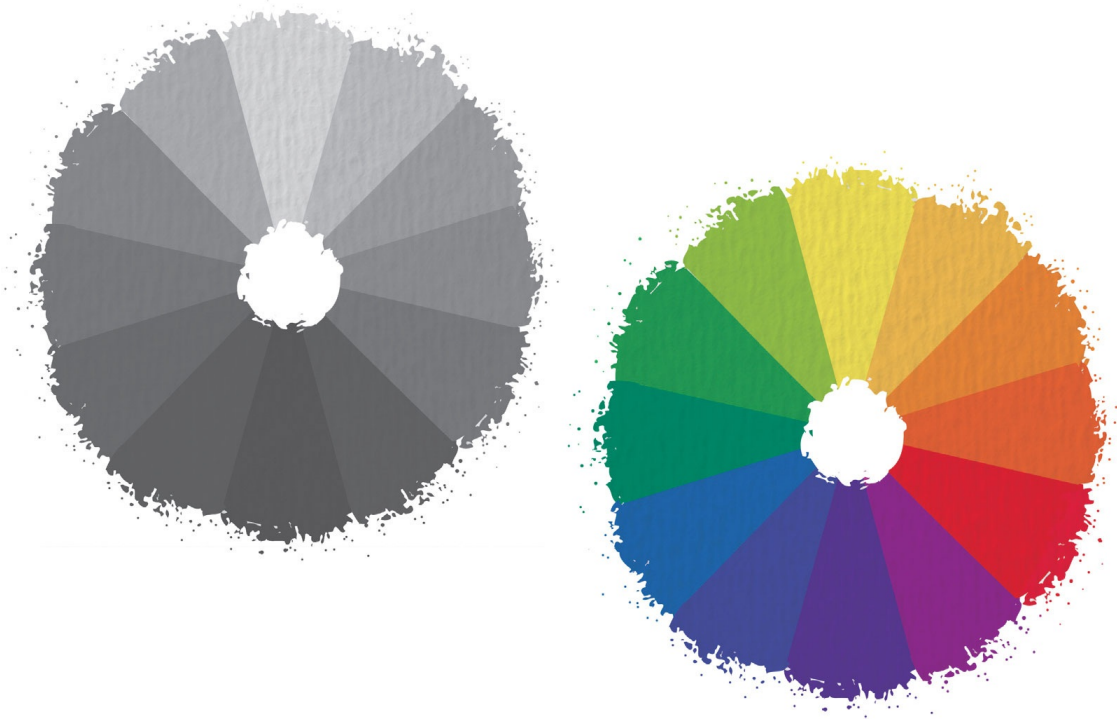
Besides a color's inherent value on the wheel, a hue itself can vary in value. The simplest way to explore a color's range of value is to create a value scale. In this example, work from left to right in watercolor, starting with a very strong wash and adding more water for successively lighter values.

SATURATION & INTENSITY

A color's saturation, also called its "intensity" or "chroma," refers to its level of brilliance or dullness. A highly saturated color is very vibrant. Many beginners who strive to create brilliant, colorful paintings work with a palette of only—or mostly—highly saturated colors. This can defeat their purpose, however, because when too many brilliant colors are placed together in the same painting, each color competes for the viewer's attention. An effective way to use saturated color is in conjunction with unsaturated color (or *neutrals*), so that some parts of the painting demand the attention while others fade back and play supportive roles.

Brilliantly saturated colors (A) and muted tones (B) can be lovely on their own, but often the key to a successful work is a balance of the two (C).

NEUTRAL COLORS

Neutral colors are low in saturation. Although they are not on the color wheel, these beautiful tones appear frequently in nature and can have a calming effect in art. Neutrals include browns and grays, both of which contain all three primary colors in varying proportions. Neutral colors are often dulled with white or black. Artists also use the word neutralize to describe the act of dulling a color by adding its complement.

In this painting, acrylic artist Varvara Harmon employs mostly neutrals within the composition to keep the viewer's focus on the more colorful macarons.

COLOR & VALUE

For most paintings to be successful, there should be a good value pattern across the painting, which means a clear and definite arrangement of dark, middle, and light values. This will create an effective design, which is pleasing to the eye. It also helps communicate the point of your painting in a clear and uncluttered manner. Keep in mind that these values should not be equal in a painting but rather predominantly light or dark. Equal amounts of light and dark result in a static image that lacks movement, drama, and—most important—interest.

Predominantly light painting

Predominantly dark painting

To demonstrate the importance of value, the same painted scene appears three times (see below). The first of three paintings uses the appropriate colors and values. The middle painting uses the correct colors, but its values are similar to one another. The last of the three paintings uses the correct values, but all the wrong colors. Which of these makes a better painting—the image in the middle or the last image? (Hint: The one with the correct values, last).

Correct colors, correct values

Correct colors, incorrect values

Incorrect colors, correct values

APPLE VALUE STUDY

Follow this exercise to get in the habit of assigning three values—black, white, and gray—to depict your subject and composition. Experiment with various value combinations and see which arrangement creates the most pleasing light, middle, and dark shapes. Pay attention only to the "big areas" of your subject. Once you have value "maps" to work from, experiment with color options. Use whatever colors you want—just make sure they are the correct values.

1
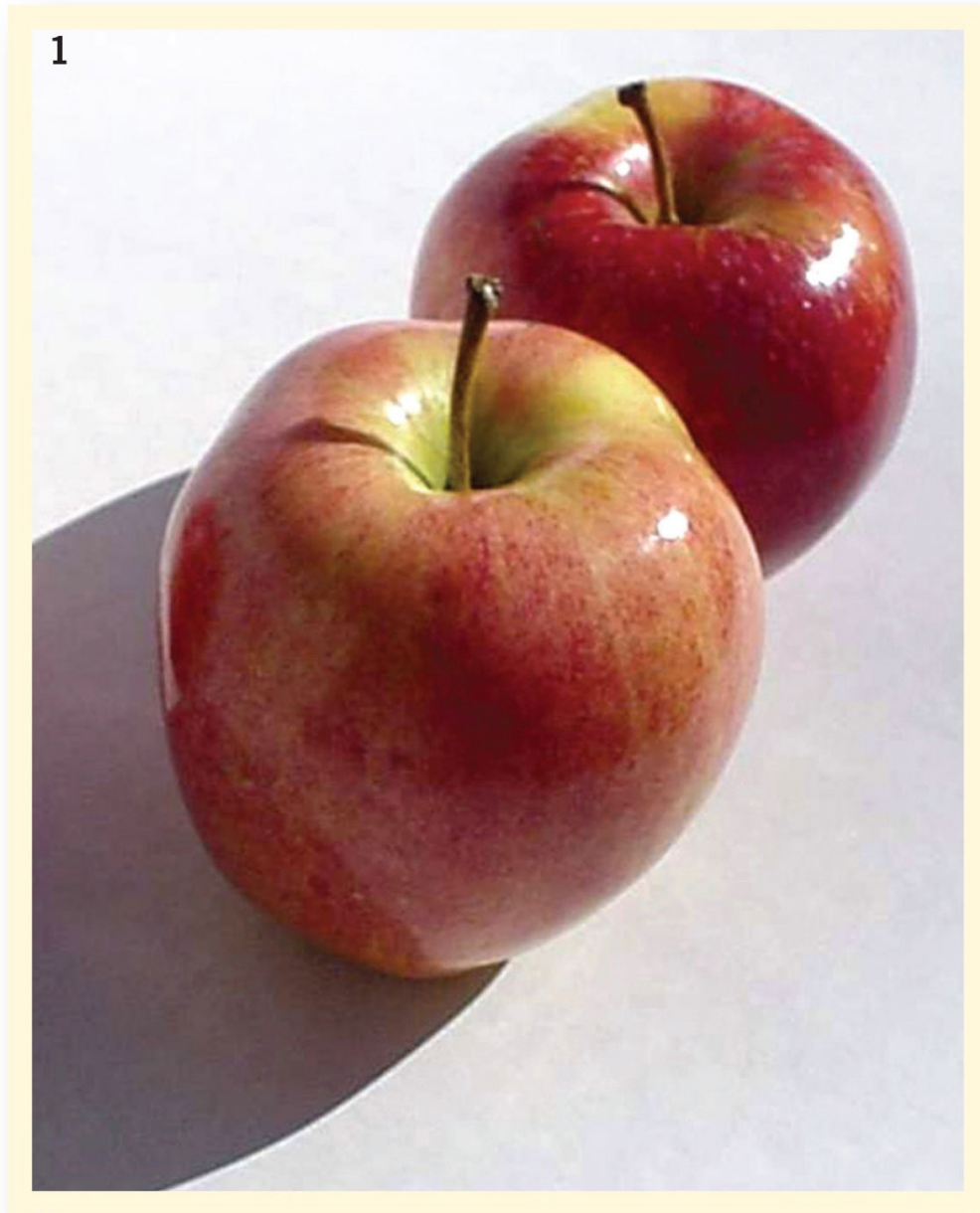
1. Choose a simple subject, such as apples. Make sure your subject is partially in light and partially in shadow.
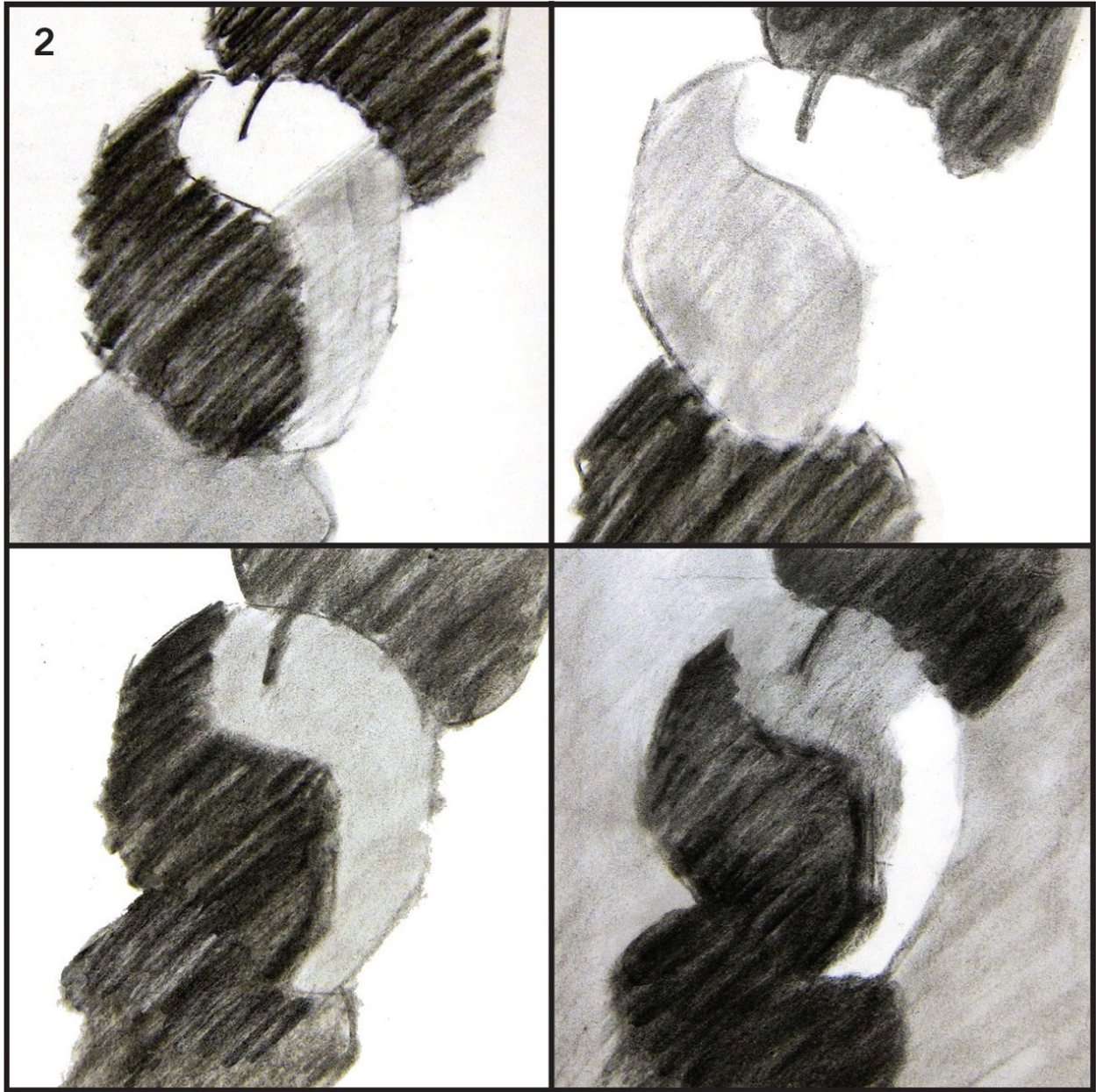
2. Interpret the values of your composition in four different ways to create a "value map," swapping middle and dark values to create pleasing arrangements.

Four Apples, acrylic

3. Following your value sketches like a map, paint your subject four times using the colors of your choice. Squint often and compare the values of your colors to the values of your sketch. Bright, vibrant colors can seem to be lighter than they actually are; squinting will help you see value more clearly. Another method for judging color values involves mixing on a middle-gray palette. This will help you see whether a color leans light or dark.

COLOR TEMPERATURE

Color temperature refers to the feeling one gets when viewing a color or set of colors. Generally, yellows, oranges, and reds are considered warm, whereas greens, blues, and purples are considered cool. When used within a work of art, warm colors seem to advance toward the viewer, and cool colors appear to recede into the distance. This dynamic is important to remember when suggesting depth or creating an area of focus.

Divide the color wheel in half by drawing a line from a point between red and red-violet to a point between yellow-green and green. This makes a visual distinction between the warm and cool colors.
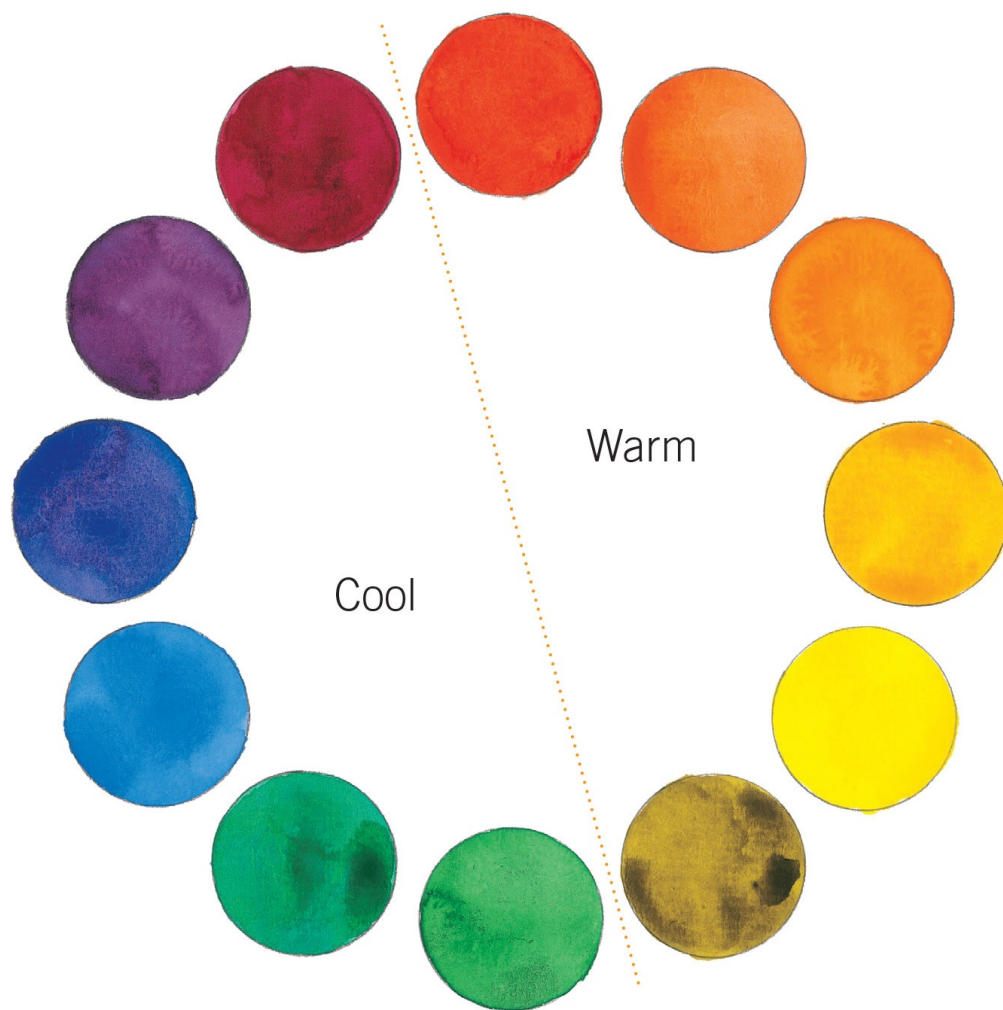
Warm

Cool

RELATIVE TEMPERATURE

Within individual colors exist warm and cool varieties. If a color leans toward red on the color wheel, it is considered warmer than a version of the color that leans blue. Relative to each other, cadmium yellow leans red and lemon yellow leans blue; therefore, cadmium yellow (far left) is warmer than lemon yellow (near left).
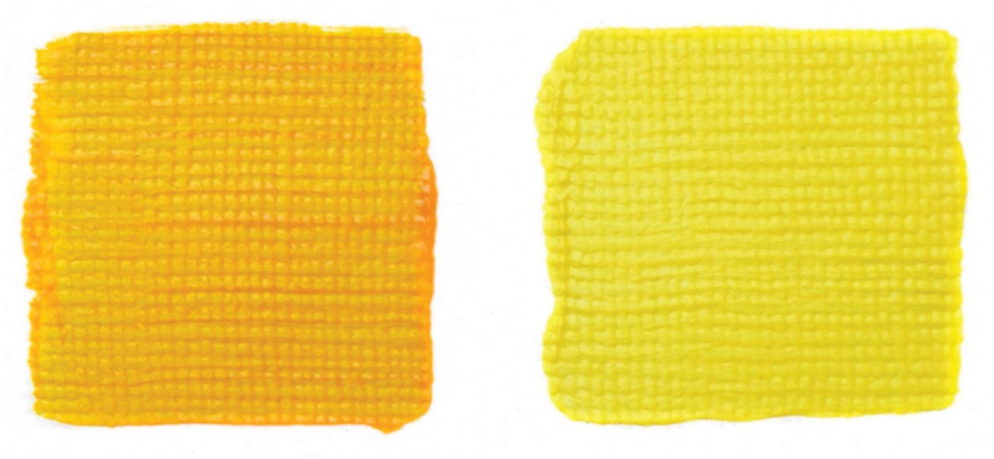
COLOR RELATIVITY

While colors are generally classified as warm or cool, they can also be relatively warm or cool within their hue. Although red is considered the warmest color, there are cool reds and warm reds. A cool red contains more blue (such as magenta), and a warm red contains more yellow (such as coral). By virtue of the relative warmness or coolness of a color, artists can manipulate space and influence how the viewer perceives a color. This leads us to the importance of color relationships. The way we perceive a color's characteristics is relative to its surroundings. By using contrasts in temperature, value, and chroma, we can make colors appear warmer or cooler, lighter or darker, and brighter or duller simply by the colors we place next to them.

A

B
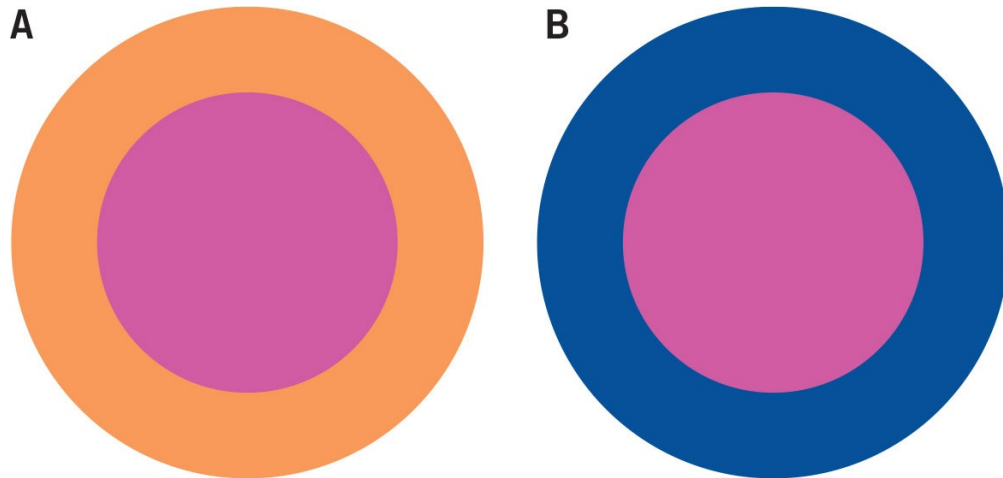
Relative Temperature A color's temperature is influenced by surrounding colors. Note how the same pink circle appears cooler set against orange (A) than blue (B).

C

D
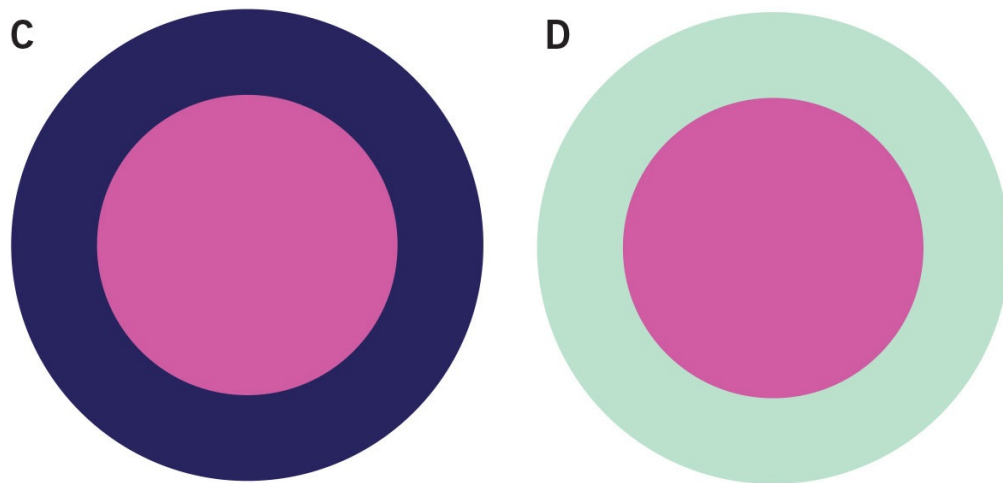
Relative Value Our perception of a color's value depends on its surrounding color. Note how the same pink circle appears lighter in example C than in example D.
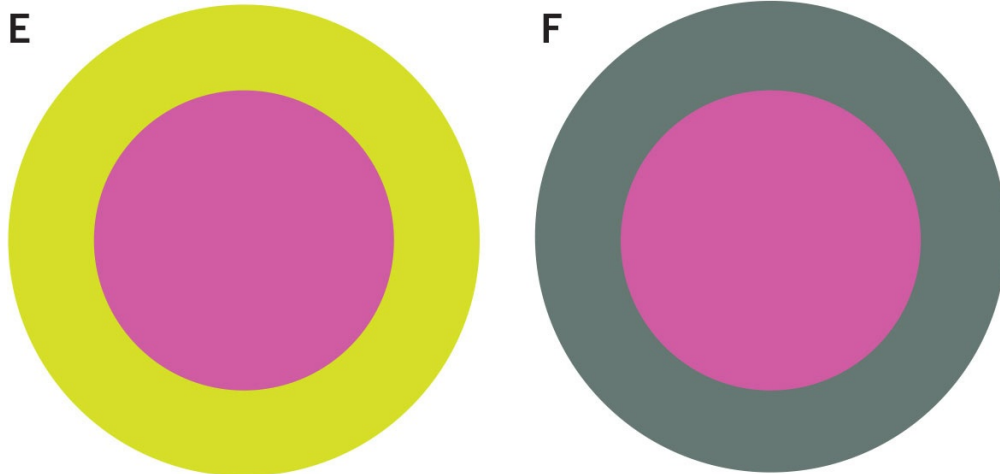
Relative Chroma A color's chroma can appear different depending on nearby colors. Note how the same pink circle appears dull against yellow (E) and bright against gray (F).

To summarize:

- How do you make a color appear warmer? Place a cooler color adjacent to it.
- How do you make a color lighter? Place a darker color adjacent to it.
- How do you make a color appear brighter? Place a duller color adjacent to it.

COLOR, LIGHT & SHADOW

The interplay of light and shadow is a common area of focus for artists, as this can heavily influence the mood, drama, and realism of a painting. To begin understanding how light affects an object, think of it as though it is made up of three basic parts: lights, local color, and shadows.

The local color of an object refers to its actual or natural color, without taking lights and shadows into account. The lights are illuminated by a light source, whether it's the sun, moon, artificial light, or candlelight. A bright, sunny day warms an object with a yellow cast, while creating cool areas of shadow. In contrast, a gray, wintery day illuminates the lights with cool tones, and its shadows appear warmer. Simply stated, the general rule is this: Warm light yields cool shadows; cool light yields warm shadows.

This pear is painted in warm light coming from the upper left, which produces cool shadows.

Highlight

Warm light source

Cool shadow

This pear is painted in cool light coming from the upper left, which produces warm shadows.

Highlight

Cool light source

Warm shadow

VISUAL INTEREST WITH LIGHT & SHADOW

Besides creating the illusion of form and dimension, the interplay between light and shadow also can be used to pique a viewer's interest in a scene. Because contrasting values attract the eye, incorporating subtle, natural contrasts between light and dark can add vitality and drama to a painting. For example, sunlight filtering through the leaves of a tree forms a variety of fascinating shapes that engage the viewer's interest. And sometimes patterns of light and shadow can be so compelling that they become the focus of the painting in lieu of the physical elements of the scene!

Engaging the Viewer The irregular patches of sun and a range of warm values make this scene compelling and inviting.

Focusing on Shadows This snapshot captures the natural, delicate balance between light and shadow. For the painting (see next image), simplify the shadows but try to retain the delicate lace-like quality that makes them so interesting.
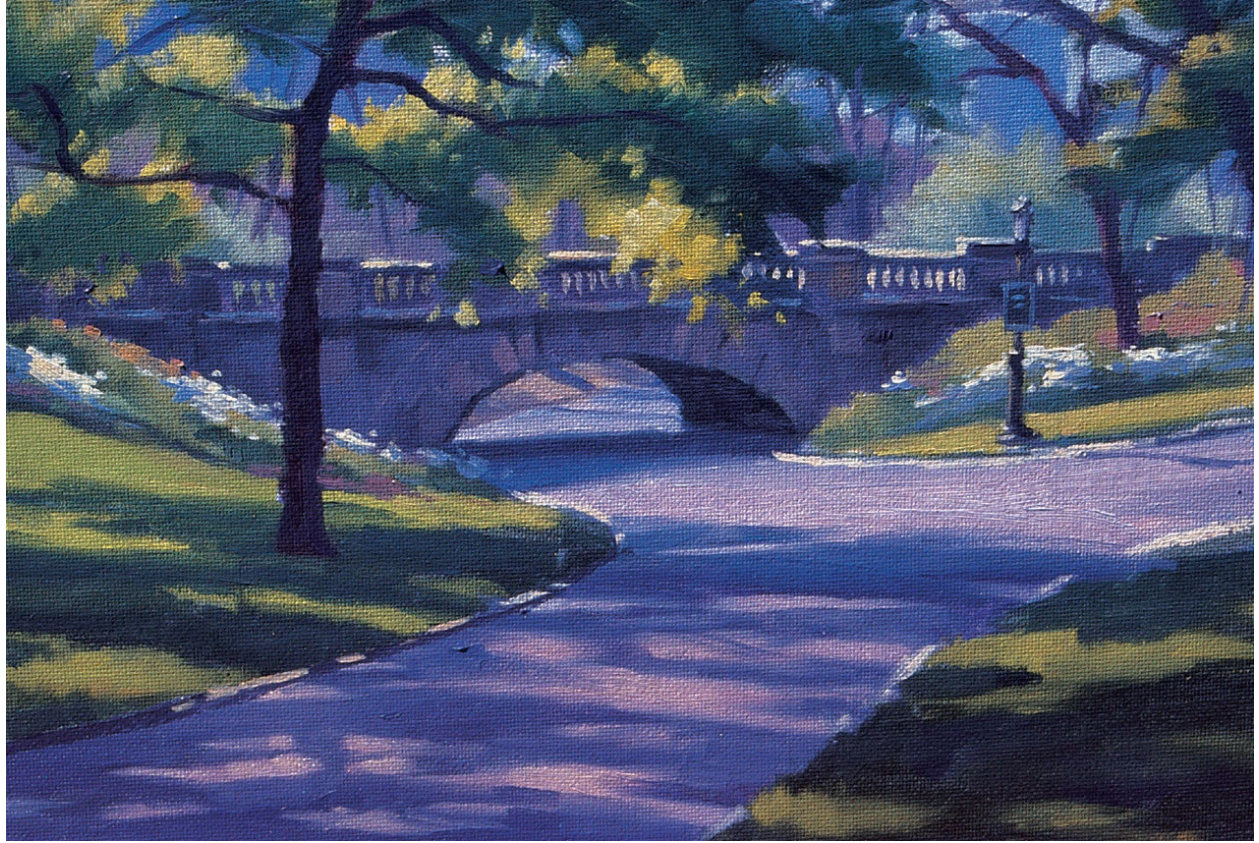
COLOR SCHEMES

Over time, certain color combinations have been established as especially agreeable to viewers. These combinations consist of two or more colors that have a fixed relationship on the color wheel and are pleasing when viewed together (creating "color harmony"). This includes tints, tones, and shades of the colors within a scheme; simply be aware of the balance of warm to cool hues, as well as saturated to neutral colors. In this section, explore the most commonly used color schemes through a selection of paintings by artist Patti Mollica.

MONOCHROMATIC SCHEME

The monochromatic color scheme uses a single color throughout, along with variations of the color's shades, tints, and tones. While it's not known to be the most exciting color scheme, a monochromatic palette is elegant, easy on the eyes, and soothing. This is the easiest color scheme to create; just use a chosen color, black, and white paints.

Chrysler Building by Patti Mollica, **acrylic**

ANALOGOUS SCHEME

The analogous scheme is made of colors that sit adjacent to one another on the color wheel. Most often, one color serves as the dominant color, with others used to accent and enhance the overall scheme. Although the lack of contrasting colors yields a simplistic look, this scheme—like the monochromatic—has a simple elegance that is pleasing to the eye.

Orange on Pink by Patti Mollica, **acrylic**

TRIADIC SCHEME

The triadic color scheme uses three colors equally spaced around the color wheel (for example, red-orange, blue-violet, and yellow-green). Many artists enjoy using this scheme because, unlike the previous two, there is ample color contrast and a natural color balance. One color serves as the dominant color, while the other two act as subordinate hues.
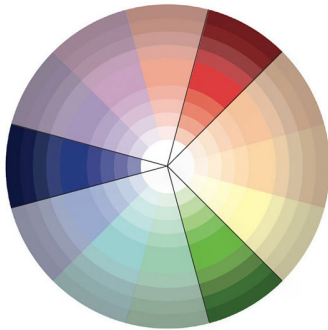
Deli & Pizza by Patti Mollica, **acrylic**

COMPLEMENTARY SCHEME

The complementary scheme offers the most visual contrast because it is made up of two colors that sit opposite each other on the color wheel. It is most successfully used when one color acts as the dominant color with the other in a supporting role. The two colors should not be of the same saturation intensity and must be visually balanced. For example, in the painting at left, the subdued purple takes up the most space of the painting but is balanced by the more saturated yellow of the flower.

Daffy by Patti Mollica, **acrylic**

SPLIT COMPLEMENTARY SCHEME

The split complementary scheme uses a color and the two colors adjacent to its complement (for example, red, yellow-green, and blue-green). This scheme still features good color contrast, but it conveys less tension than the complementary scheme.

Moonshine Mama by Patti Mollica, **acrylic**

ANALOGOUS COMPLEMENTARY SCHEME

This scheme combines the analogous and complementary schemes, incorporating three side-by-side hues plus the complement of the center color (for example, red, blue-green, green, and yellow-green).

Vernazza Colors by Patti Mollica, **acrylic**

TETRAD SCHEME

The tetrad color scheme uses two hues that are separated by one color on the wheel, plus the complement of each hue (for example, red, green, orange, and blue). Because this scheme can overwhelm with visual tension, it's a good idea to choose one dominant color and accent with the rest.

Field and Sky by Patti Mollica, **acrylic**

NEUTRAL SCHEME

As the opposite of the saturated scheme, the neutral scheme uses colors that have been grayed down. This diffused palette is perfect for foggy landscapes, white-on-white subjects, and scenes with a soft, mellow mood.

White Teapot by Patti Mollica, **acrylic**

PIGMENT TYPES

Pigments are classified into two groups based on their origins. Pigments are either derived from the earth (called "inorganic" or "mineral" pigments), or they are created synthetically in a chemical laboratory (called "organic" or "modern" pigments). Although they share some similar characteristics, the makeup and behavior of mineral and modern pigments are very different. Knowing their unique characteristics will help you make more effective color mixing choices.

When using oil or acrylics, use mineral colors to completely cover the surface or color beneath, and use modern colors to glaze and allow the surface or color beneath to show through. Artists are not limited to choosing one or the other; they can mix mineral and modern paints together to achieve greater color subtleties and nuances.

Mineral pigments have earthy-sounding names like sienna, ochre, cadmium, cobalt, and ultramarine. They are generally characterized by

• high opacity (very opaque)
• low chroma (less vibrant)
• low tinting strength (do not strongly change the colors they are mixed with)

Modern pigments have names that allude to their chemical origins like quinacridone, phthalo, hansa, dioxazine, and anthraquinone. They are generally characterized by

• high translucency (very transparent)
• high chroma (very vibrant)
• high tinting (strongly change the colors they are mixed with)

This acrylic paint chart illustrates the difference in opacity between mineral pigments (top row) and modern pigments (bottom row). Paint names on top, left to right: ultramarine blue, cobalt teal, cobalt violet hue, yellow ochre, cadmium red light, and burnt sienna. Paint names on bottom, left to right: phthalo blue (red shade), green gold, dioxazine purple, nickel azo gold, napthol red, and transparent pyrrole orange.

STAINING VS. NONSTAINING

Pigments are classified as staining or nonstaining. Staining pigments, such as alizarin crimson and the phthalocyanines, immediately absorb into the paper's surface and are impossible to lift or dab away completely. Nonstaining pigments, such as burnt umber and the cadmiums, sit on the surface of the paper and lift away easily. This pigment quality is most relevant to watercolor, particularly when working with techniques that call for dabbing away the pigment. If you want to use staining colors but need the ability to lift them away, you can apply watercolor lifting preparation medium to your paper before applying paint, which makes lifting possible with any pigment.
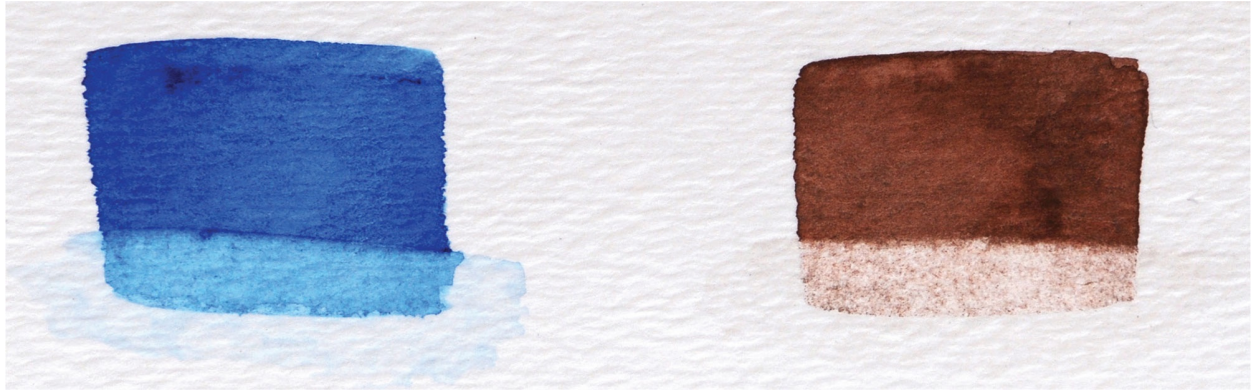
To test the staining quality of a paint, apply a rich stroke of the color to paper and allow it to dry. Use a wet brush to loosen an area of pigment and dab with a paper towel. The more color that remains, the higher the staining quality. Above is a staining test performed with phthalo blue (staining) and burnt umber (nonstaining).

MASSTONE VS. UNDERTONE

When assessing a paint, artists often refer to its masstone and undertone. Masstone is the paint as it appears in a thick scoop from the tube, whereas undertone is the paint as it appears thinly over a white support. A pigment's masstone and undertone can vary quite a bit in hue and value.

Permanent rose (acrylic)

Phthalo green (acrylic)

Lightfastness refers to the ability of pigment to resist fading over time, particularly when exposed to UV light. Lightfast pigments are not prone to fading and are considered to be more

permanent than nonlightfast pigments. Nonlightfast—or fugitive—pigments lighten and lose their intensity quicker. The American Society for Testing and Materials (ASTM) has developed a rating system for lightfastness; a paint's rating is visible on its tube. It is measured on a scale of I to V, with I and II being the only acceptable ratings for professional artists.

COLOR MIXING

Bold and basic, the primaries are the fundamental colors of the color wheel. Using predominantly primary colors to create a work of art yields dynamic and accessible results. Because they are equidistant on the color wheel, they create a triadic color scheme.

USING PRIMARIES TO CREATE SECONDARIES

We may know that red and yellow make orange, blue and yellow make green, and blue and red make purple, but the actual possibilities are a little more complex! We can blend them to create secondary colors, tertiary colors, and neutral colors, but you cannot create primaries using other colors. Below are a few basic guidelines for creating secondaries, along with a few sample mixes to get started.

Oranges Mixing cadmium yellow, cadmium red, and titanium white produces a wide range of basic oranges.

Greens Blends of cadmium yellow and phthalo blue produce a range of bold and vibrant greens.

Violets A mix of phthalo blue and cadmium red yields a beautiful variety of purples and mauves.

WORKING WITH SECONDARIES

Secondary colors add dimension to the color wheel with three festive hue families—violet, green, and orange. Each of these colors is a mix of two primary colors. Violet is a combination of red and blue, green is a combination of blue and yellow, and orange is a combination of yellow and red. When mixing secondaries for a painting, consider the following: Mixing colors that lean toward each other on the color wheel will create vibrant results. Mixing colors that lean away from each other on the color wheel will create muted results. Both vibrant and muted colors have a place in painting, so it's best to master both styles of mixing to find color combinations that suit a particular subject and style.

COMMON GREEN PIGMENTS

Green is a fresh, cool-leaning color that suggests fertility and nature, ranging from deep, earthy tones to the bright greens of spring. Below are a few common paint colors shown in masstone (with thickness), undertone (spread thinly), and mixed with white. Note that every paint color varies somewhat between manufacturers.

Phthalo green is a cool, blue-leaning green.

Moss green, which is similar to sap green, has a vibrant, orange-leaning undertone. This is a wonderful tool for painting foliage.

Chromium oxide green is cool, earthy, muted, and very opaque.

Cobalt green is a vibrant, blue-leaning green pigment.

For most colors, pushing a mix toward red warms the color, and pushing a mix toward blue cools it. Green, however, is the complement of red, so push warm greens toward yellow and cool greens toward blue.

COMMON VIOLET PIGMENTS

Violet is the darkest hue on the wheel and is quite versatile in its associations; its deepest, richest forms suggest royalty and strength, whereas its lightest tints and muted tones appear dreamy and feminine.

Dioxazine purple is a cool, transparent, staining pigment that has a very dark masstone and an intensely vibrant undertone.

Cobalt violet is a popular medium-violet pigment that creates soft, muted tints.

**Quinacridone magenta** is on the cusp of the purple family near red, resembling the hue of magenta ink.

Working with Violets Create depth and dimension by incorporating a variety of purples. The warm and cool purples work together to excite the eye as they suggest light and shadow. Use dioxazine purple for the deepest colors, cobalt violet for the highlights, and ultramarine blue to deepen and shape the flower clusters.

COMMON ORANGE PIGMENTS

Orange is a bold, warm, and invigorating color often associated with fire and autumn. Its hues can be deep and fiery or pale and delicate, like apricots or light skin tones.
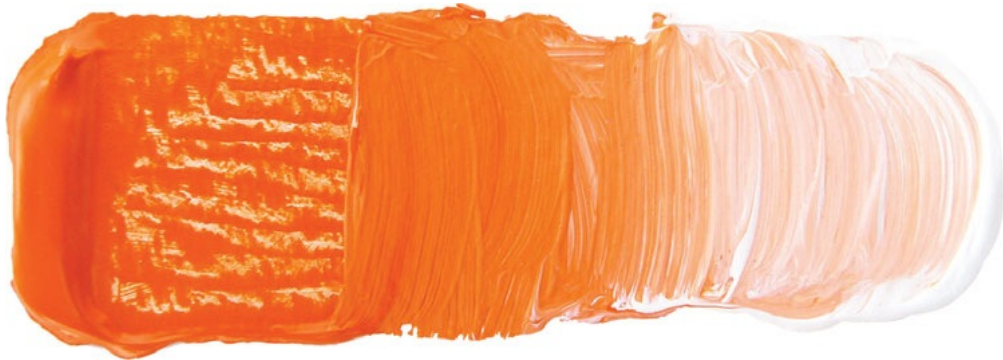
Cadmium orange is a premixed paint color of cadmium red and cadmium yellow pigments.

Perinone orange is an intense, red-leaning orange that thins to produce beautiful, transparent washes for florals or skin-tone mixes.

Quinacridone burnt orange is a transparent, deep, rich orange that resembles a neutral reddish brown.

Working with Oranges In this palette knife painting, a wide range of oranges is used to suggest the landscape. A complementary blue is used in the sky for a vibrant visual dynamic, and the tree is accented with dabs of bright green to complement the deep red-oranges of the tree.

Mixing Neutrals Neutrals are blends of all three primaries: red, yellow, and blue —plus white when desired for softening and lightening. To create neutrals that lean warm or cool, simply adjust the proportions of pigments. Red-and orange-leaning neutrals appear much warmer than blue-or green-leaning neutrals. Experiment with the pigments on the palette to discover the wide range of neutrals at your fingertips.

Cadmium red medium, cadmium yellow medium, and ultramarine blue combine to create a range of rich neutrals.

Using the same primary colors, add white for a range of softer tones. Add more blue for darker, cooler mixes, and add more yellow and white for lighter mixes.
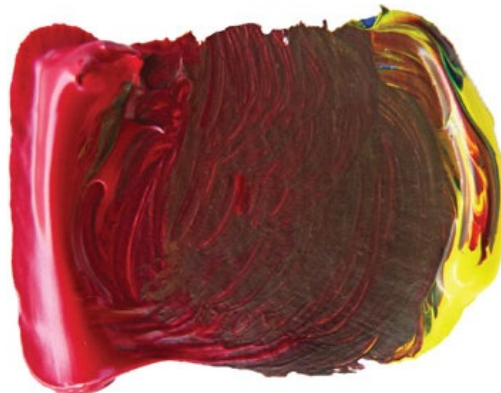
For a warm brown, try mixing red and yellow with just a touch of blue in the bristles.

In this example, the top mix contains more yellow, whereas the bottom mix contains more red.

For cool browns and grays, blend yellow, blue, and white with just a touch of red in the bristles.

Working with Black Not considered a hue on the color wheel, black is just black—right? Not exactly, There are differences in appearance, consistency, and mixability among black pigments. Some artists choose to avoid blacks and grays altogether by mixing them for a more natural look (see below).

TIP

Using black to deepen or neutralize a color can overwhelm and deaden the other pigments in a mix. Remember, a little dab goes a long way.

Mixing Blacks Black pigments tend to look unnatural and flat set against the rest of a color palette. However, mixed blacks (or deep, dark colors) often suit the overall color balance of a painting. Mixed blacks have a subtle sense of color and depth, which help create deep, lively shadows with dimension.
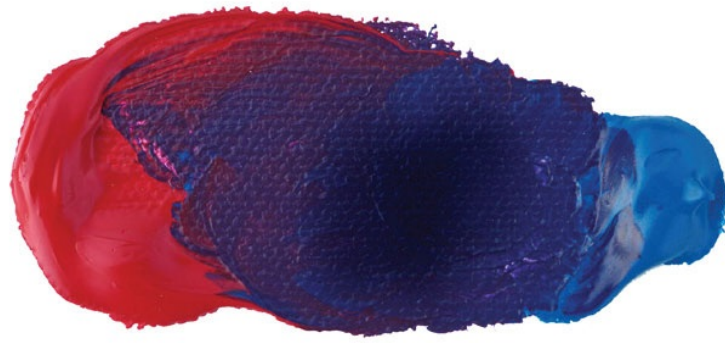
Mixing equal parts burnt sienna and ultramarine blue yields a dark, earthy black with a slight hint of blue.

Blending cadmium red medium with dioxazine purple yields a red-leaning black, which can be used for tree branches and trunks.

Cobalt violet and phthalo green creates an effective cool black for the deepest ocean colors in seascapes.

Mixing equal parts cerulean blue and crimson red gives a deep, purple-leaning black. As more red is added, the mix becomes more of a dark brown.

MIXING FOR VIBRANCE

We've learned that mixing complementary colors together yields neutrals, grays, and browns. Now we need to learn the basic ideas behind mixing secondary and tertiary colors according to our needs, whether vibrant or muted. To achieve the most saturated, brilliant secondary and tertiary colors, mix colors that *lean* toward each other. For example, mix a vibrant purple using ultramarine blue (which leans red) and quinacridone magenta (which leans blue). Mixing phthalo blue and cadmium red yields a completely different result, as they both *lean* yellow. Because yellow is the complement of purple, the mixture is naturally muted.

Note the differences in chroma between the secondary acrylic mixes at right. On the opposite page is a color wheel to help create the cleanest, most vibrant mixtures of primary colors based on the direction they lean.
The acrylic mixtures below show an example of vibrant mixing and an example of dull mixing for each secondary color—purple, green, and orange.

Vibrant

Quinacridone magenta (leans blue) + ultramarine blue (leans red)

Less Vibrant

Cadmium red light + phthalo blue (both lean yellow)

Vibrant

Phthalo blue (leans yellow) + cadmium lemon yellow (leans blue)

Less Vibrant

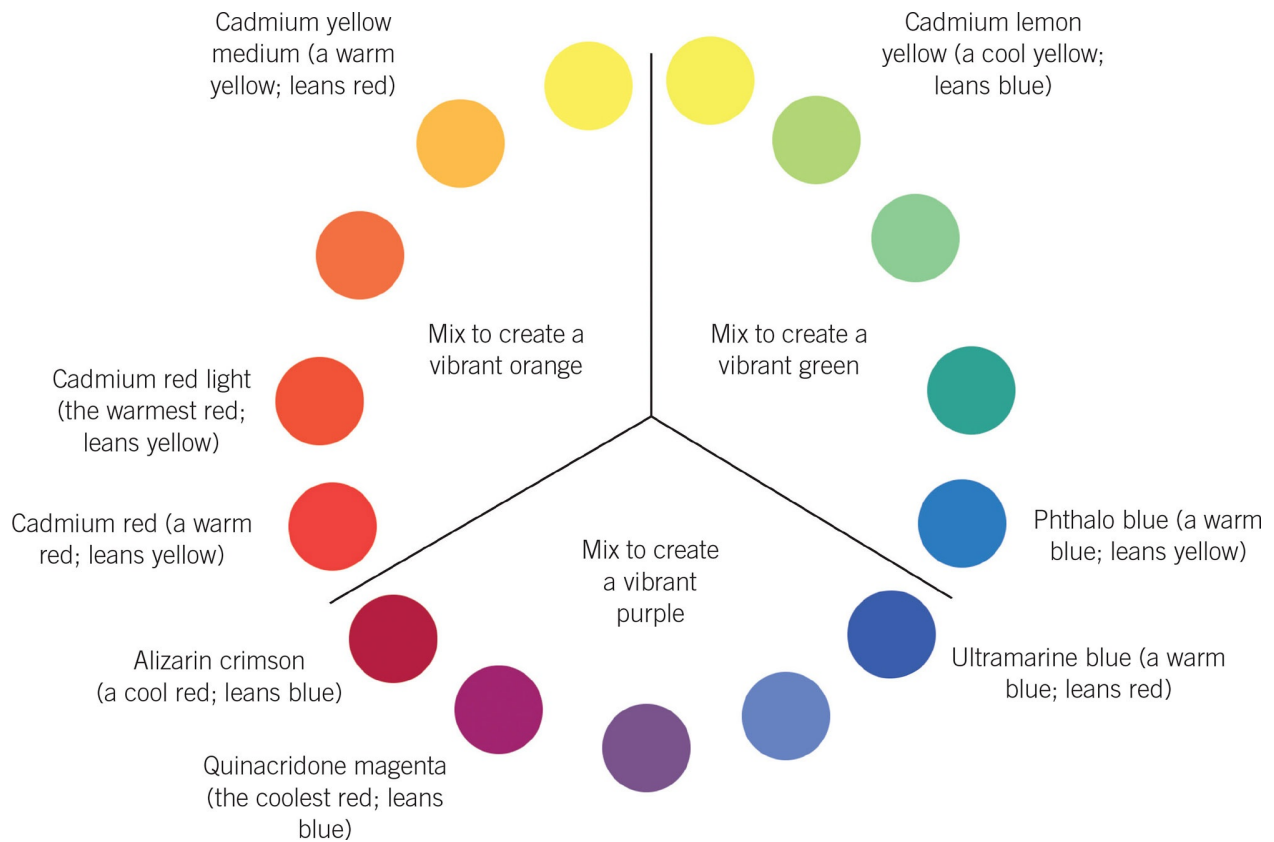Ultramarine blue + cadmium yellow medium (both lean red)

Vibrant

Cadmium red light (leans yellow) + cadmium yellow medium (leans red)

Less Vibrant

Alizarin crimson + cadmium yellow medium (both lean blue)

Vibrant Mixing Chart

Cadmium yellow medium (a warm yellow; leans red)

Cadmium lemon yellow (a cool yellow; leans blue)

Mix to create a vibrant orange

Mix to create a vibrant green

Cadmium red light (the warmest red; leans yellow)

Cadmium red (a warm red; leans yellow)

Phthalo blue (a warm blue; leans yellow)

Mix to create a vibrant purple

Alizarin crimson (a cool red; leans blue)

Ultramarine blue (a warm blue; leans red)

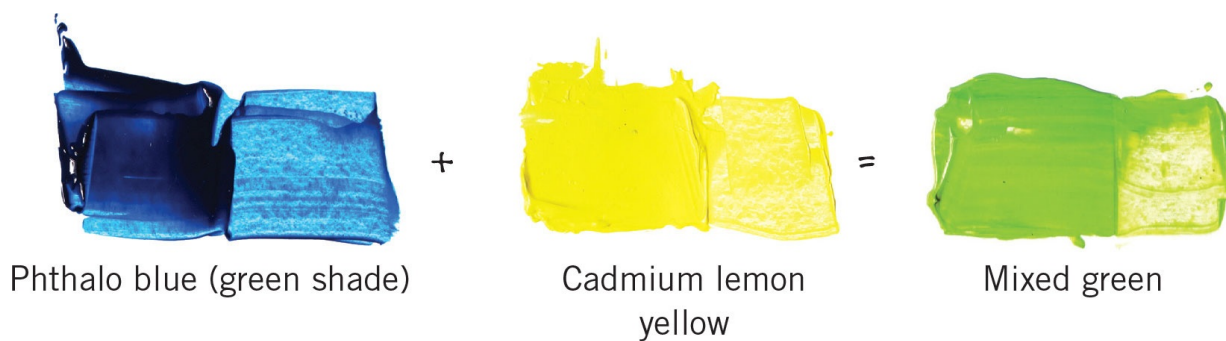Quinacridone magenta (the coolest red; leans blue)

TIP

To mix the most vivid secondary and tertiary colors from primary colors, use colors within the boundary lines of the pie chart above. For less vibrant mixtures, use primary colors that lie outside of the lines.

COLOR MIXING SAMPLES

Below are some of the most vibrant secondary and tertiary color mixes possible. Practice mixing these oil and acrylic colors, and refer to this as a guide when painting.

Phthalo blue (green shade)   +   Cadmium lemon yellow   =   Mixed green

Cadmium red light   +   Cadmium yellow medium   =   Mixed orange

Ultramarine blue   +   Quinacridone magenta   =   Mixed purple

Using a Palette Knife

The palette knife is a useful tool with a handle and a flexible blade that allows artists to scoop, flatten, and mix paint on a palette. A palette knife can also be used to apply paint to a canvas. Many artists create paintings using only palette knives; they apply the paint as if they are frosting a cake. This will result in a thicker, richer application of paint and produces a very different look than a paintbrush does. Some prefer metal palette knives with a diamond shape and point at the tip. This allows the artist to create fine lines and detail, such as branches, sailboat masts, telephone lines, and so on.
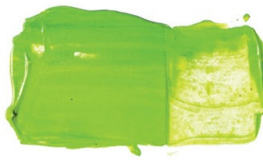
© Shutterstock

Vibrant Tertiaries
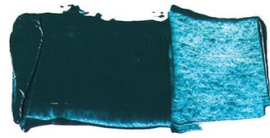
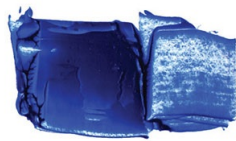Phthalo blue (green shade)   +   Mixed green   =   Blue-green
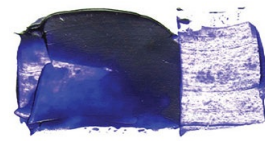
Ultramarine blue   +   Mixed purple   =   Blue-purple

Alizarin crimson   +   Mixed purple   =   Red-purple
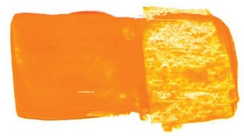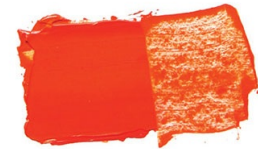
Cadmium lemon yellow   +   Mixed green   =   Yellow-green

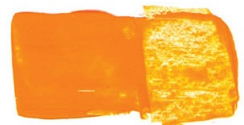Cadmium yellow medium   +   Mixed orange   =   Yellow-orange

Cadmium red   +   Mixed orange   =   Red-orange

COLOR & MOOD

Color psychology refers to the influence of color on our behavior and perception of the world around us. Although we may not consciously think about it, our perception of color is affected by our gender, age, culture, and ethnic background, among other factors. These differences play a part in how each of us responds to color or color groups. However, there are certain similar universal reactions to color that transcend the individual variables.

Yellow is the cheerful color of sunshine. It conveys warmth, happiness, hope, and positivity. It also exudes childlike simplicity and innocence.

Yellow Rose, acrylic

A color commonly associated with fire and blood, red conveys energy, power, passion, and love. It stimulates excitement and has been shown to raise blood pressure and heart rate. It is used often in restaurants because it is considered an appetite stimulant.

Red Macs, acrylic

Pink is a psychologically powerful color that represents the feminine principle and is associated with love and romance. Pink is thought to have a calming effect, although too much of it is physically draining and can be emasculating.

Pink Brigade, acrylic

When used in light, airy pastel tints, blue is associated with the sky, water, and feelings of serenity, relaxation, and calm. Deeper shades, however, are related to sadness and despair.

Rainy Day, Times Square, acrylic

Purple has long been associated with royalty because only aristocrats could afford the expensive pigment. During Roman times, it took 4 million crushed mollusk shells to produce one pound of purple pigment. This royal color conveys elegance, dignity, and sophistication.

Purple Imperial, acrylic

The color black (or lack thereof) is associated with fear, death, evil, negativity, formality, and solemnity. Black can be used alongside other colors to make them stand out, and it contrasts well with bright colors.

53rd and Third, acrylic

As the color of snow, white symbolizes cleanliness, goodness, innocence, and purity. It is considered the color of perfection.

Mimi's Bouquet, acrylic

The color of nature, green symbolizes freshness, fertility, and harmony. It is considered the most restful color to the eye and imbibes the cheeriness of yellow with the calmness of blue.
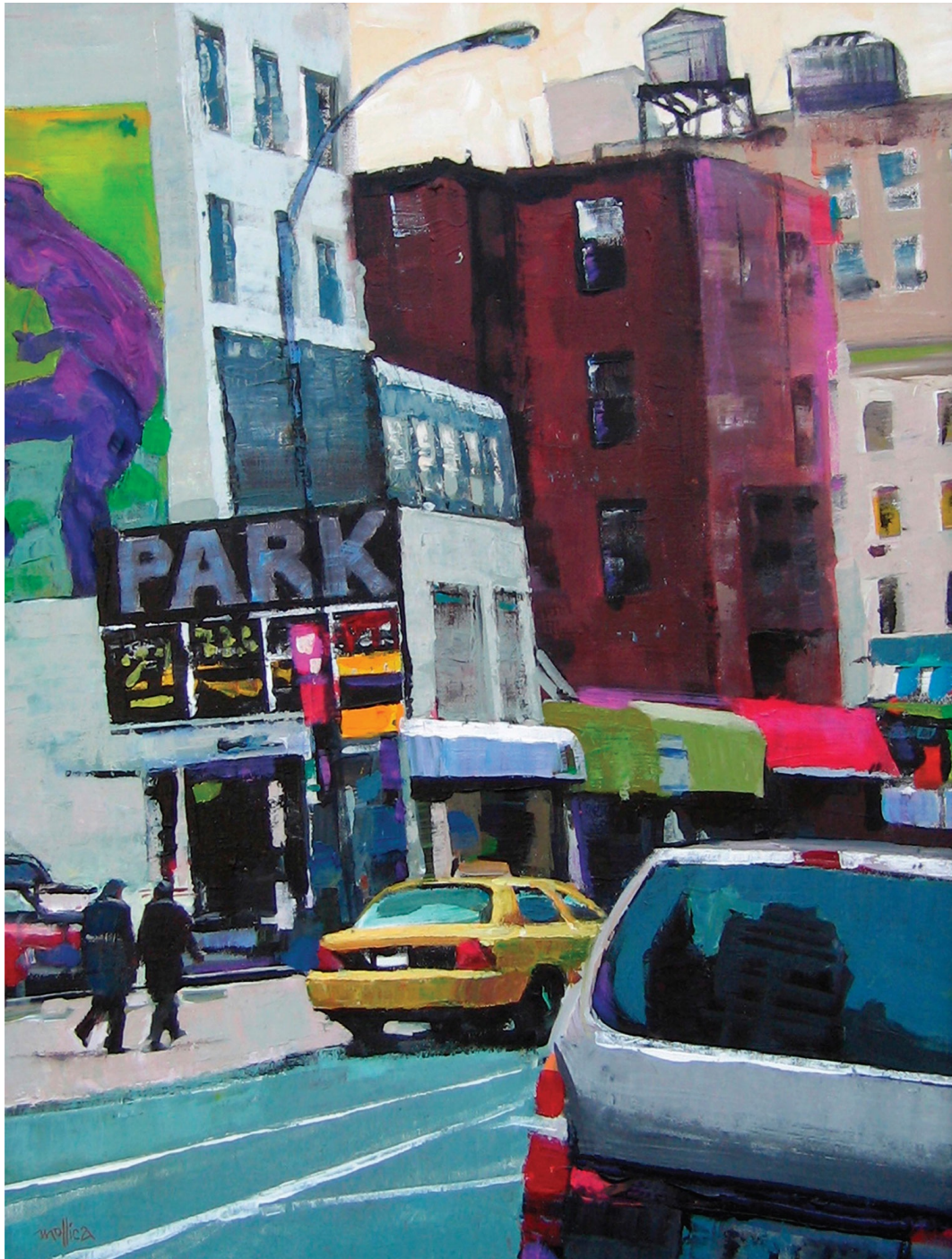

End the War, acrylic

The human eye perceives orange as the warmest color. Orange mimics the heat of a flame and combines the vibrance of yellow with the intensity of red. It represents enthusiasm, creativity, and invigoration.

Red Hot Jazz, acrylic

FINAL THOUGHTS

Color is a broad topic and this book covers the basics, but there is more to discover. Applying an understanding of color is part technique and part intuition; the best way to nurture intuition is to practice. Take ample opportunities to choose color schemes, evoke specific moods, play with color and light, and try new combinations.

Park off Park, acrylic