▲ **FIGURE 6.1** Notice the variety of colors used in this painting. Where in your environment do you find colors like these? Are these calming colors? If not, how would you describe them?

Wassily Kandinsky. *Tension in Red*. 1926. Oil on board. 66 × 53.7 cm (26 × 21 1/8"). The Solomon R. Guggenheim Museum, New York, New York. Gift, Solomon R. Guggenheim, 1938. © 2003 Artists Rights Society (ARS), New York/ADAGP, Paris.

CHAPTER 6

Color

Color is everywhere. We see it in the blue of the sky and in the yellows, reds, and oranges of the changing autumn leaves. The expressive qualities of color are so powerful that they can create instant emotional reactions. The color green can be soothing; the color red, exciting.

In this chapter, you will:

- Identify hue, value, and intensity as the properties of color.
- Compare and contrast the use of color and value in different artworks.
- Demonstrate effective use of color art media in drawing, painting, and design.
- Analyze the use of color in the artworks of others to express meaning.

Focus on Art History

Figure 6.1 was painted by the Russian artist Wassily Kandinsky (1866–1944). Kandinsky was a founder of the "Der Blaue Reiter" (The Blue Rider) movement. The group followed the art style known as Expressionism. Its goal was to express raw emotion, mainly through composition. Kandinsky, an innovator, created abstract compositions at a time when most artists were producing lifelike subjects. He also stood out by using bold, brash colors as a unifying element.

Interpret. Study the bright colors and sharp, angular lines of Figure 6.1. Read the title. Do you think the title captures the mood of this work? Do you experience tension and unrest in this work, or do you find it peaceful and calm?

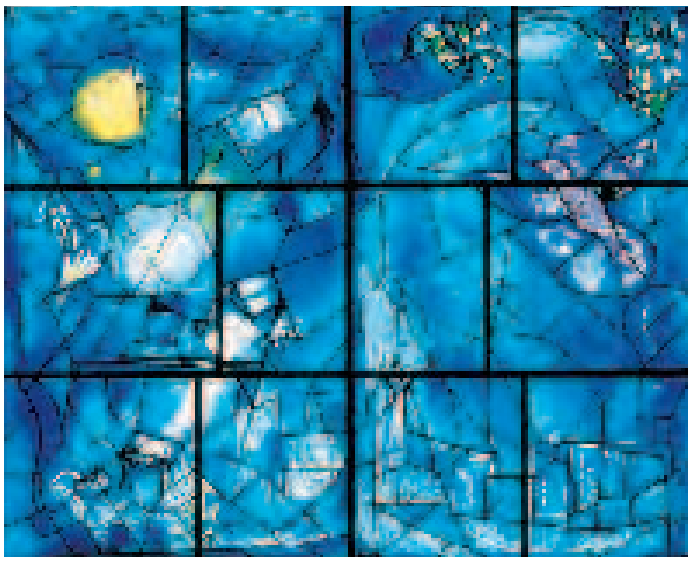
Hue, Value, and Intensity

Vocabulary

color
color spectrum
hue
color wheel
value
tint
shade
intensity
complementary colors

Color is the most expressive element of art. It shares a powerful connection with emotion. That relationship is why we hear people say, "I'm feeling blue," or, "She was green with envy." The connection of color to emotion is also illustrated in a question we often ask friends—"What's your favorite color?" Almost everyone has a favorite color. It might remind us of a favorite childhood toy or a piece of clothing that we love to wear. Our appreciation of color affects many of the choices we make.

In this lesson you will learn what color is and how you see it. You will learn the properties of color. You will also learn how to mix colors to create shades you might use in your artwork.



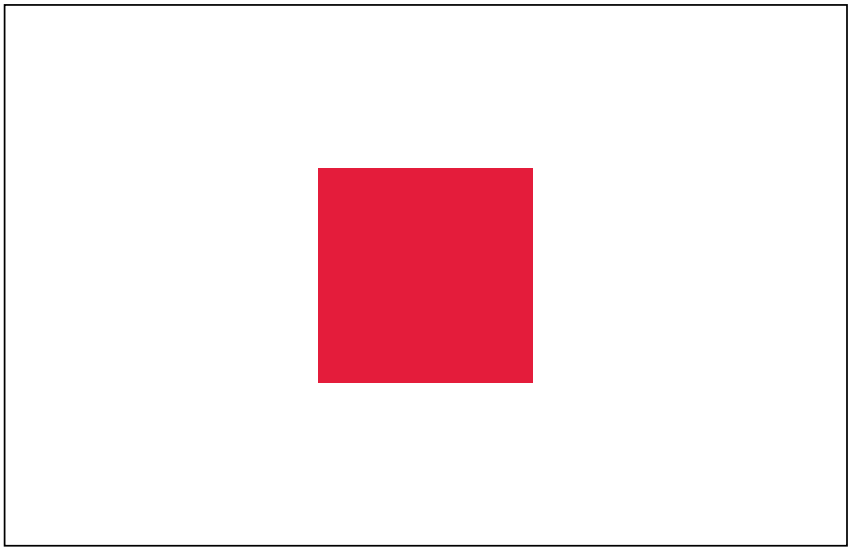
▲ ▶ **FIGURE 6.2** Chagall has used many different tints and shades of blue. He has also used a few other colors for emphasis. Identify some of the objects he has emphasized this way. As the light outside changes throughout the day, how do you think the artwork changes? What if the day were stormy or rainy? How do you think the artist planned for this?

Marc Chagall. *The American Windows.* 1977. Stained glass. The Art Institute of Chicago, Chicago, Illinois. Gift of the Auxiliary Board of The Art Institute of Chicago in memory of Richard J. Daley, 1977. 938. © 2003 Artists Rights Society (ARS), New York/ADAGP, Paris.

How We See Color

Color is *an element of art that is derived from reflected light.* You see color because light waves are reflected from objects to your eyes **(Figure 6.2).** White light from the sun is actually a combination of all colors.

When light passes through a wedge-shaped glass, called a prism, the beam of white light is bent and separated into bands of color, called the **color spectrum.**



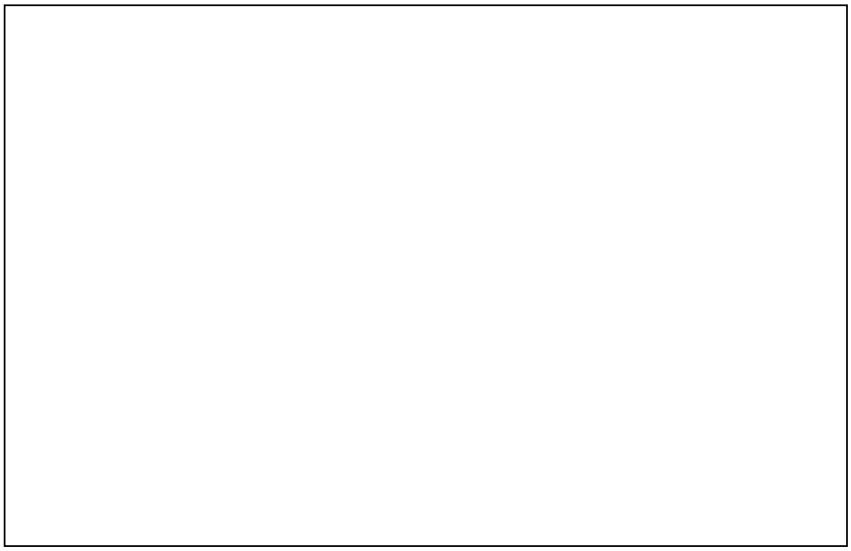


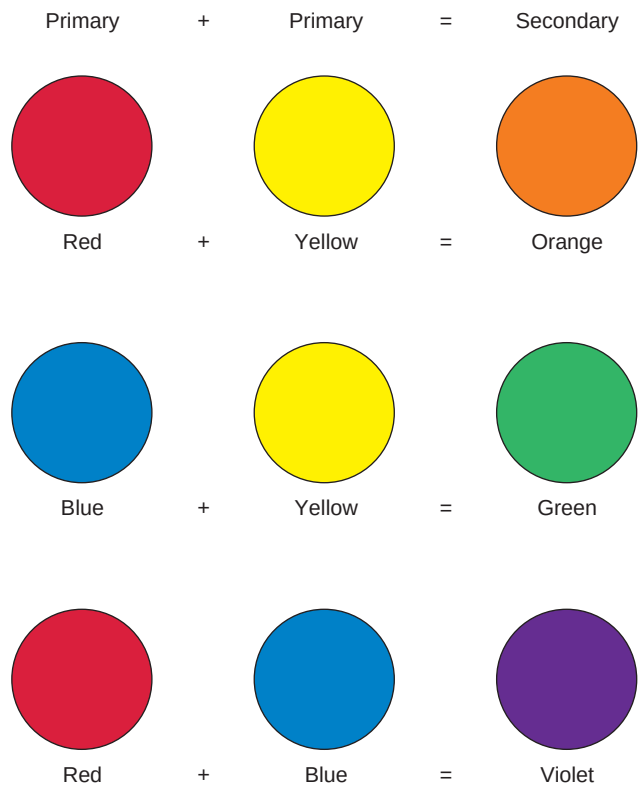
FIGURE 6.3 What color do you see when you shift your gaze from the red to the white area? Your eyes can fool you about color.

The colors of the spectrum always appear in the same order: red, orange, yellow, green, blue, and violet.

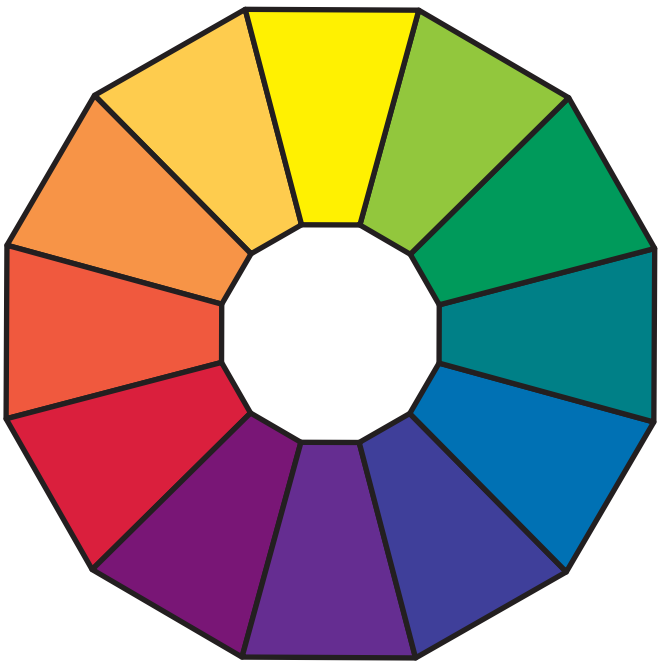
A rainbow is a natural example of a spectrum. Rainbows occur when sunlight is bent by water, oil, or a glass prism. You can find rainbows in the sky after a storm, in the spray from a garden hose, or in a puddle of oil.

We see color because objects absorb some of these light waves and reflect others. A red apple looks red because it reflects red waves and absorbs the rest of the colors. Special color receptors in your eyes detect the color of the reflected light waves. Another type of receptor detects the lightness or darkness of the color. Colors don't change. Your ability to distinguish between them does. That is why your eyes have trouble seeing colors in dim light. Not enough light is reflected off of objects for you to see their color.

When you are looking at colors, your eyes can sometimes fool you. For instance, stare at the bright red shape in **Figure 6.3** for 30 seconds; then quickly shift your gaze to the white area below it. Did you see a green shape on the white surface? This is called an *afterimage*. It occurs because the receptors in your eyes retain the visual stimulation even after it has ceased. Your brain creates the afterimage as a reaction to the color you stared at originally.



▲ **FIGURE 6.4** Primary and secondary hues.



▲ **FIGURE 6.5** The color wheel.

The afterimage of a color is the opposite of that color. Green is the opposite of red. So the afterimage of green is the color red. The afterimage of black is white, and the afterimage of blue is orange. An afterimage isn't a strong color—it is only the ghost of a color. Some artists make use of the way your eyes work when they create optical illusions of color and movement.

Three properties of color work together to make the colors we see. These properties are *hue, value,* and *intensity.*

Hue

Hue is *the name of a color in the color spectrum,* such as red, blue, or yellow. Red, yellow, and blue are the *primary* hues. You cannot make primary hues by mixing other hues together. However, by combining the three primary colors and black and white, you can produce every other color.

The *secondary* hues are made by mixing two primary colors **(Figure 6.4).** Red and yellow make orange; red and blue make violet; and blue and yellow make green. Orange, violet, and green are the secondary hues.

The six *intermediate* colors are made by mixing a primary color with its secondary color. For example, red and orange make red-orange, red and violet make red-violet, blue and violet make blue-violet, and so on. You can make many additional variations by combining the intermediate colors.

A **color wheel** is *the spectrum bent into a circle.* It is a useful tool for organizing colors. The color wheel in **Figure 6.5** is a twelve-color wheel showing the three primary, three secondary, and six intermediate hues.

Other Color Systems

The three primary hues—red, yellow, and blue—are specifically the primary hues of pigment found in paints, pastels, or colored pencils. There are different color systems that apply to the colors seen on computer screens and those printed in magazines and photographs.

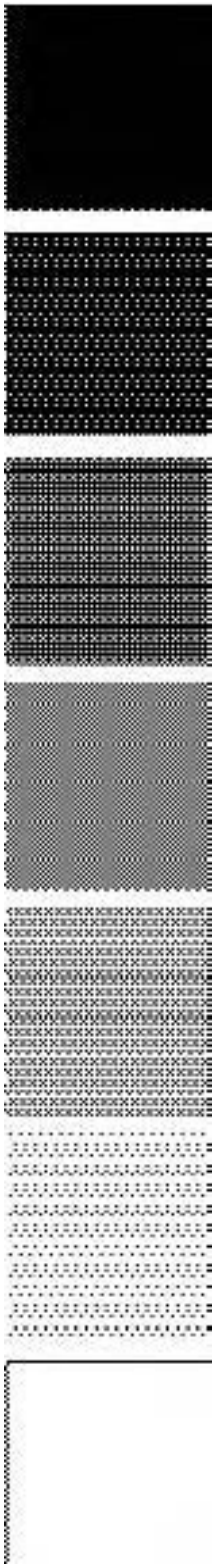
The primary colors of light, as on a computer screen, are red, green, and blue, commonly referred to as RGB. Because these colors are created by adding light, the pigment color system does not apply.

Another color system is used by printers—the CMYK color system. CMYK is short for the four primary colors of this system—cyan (also called process blue), magenta, yellow, and black. If you have worked with computer graphics software, you have probably seen references to CMYK color.

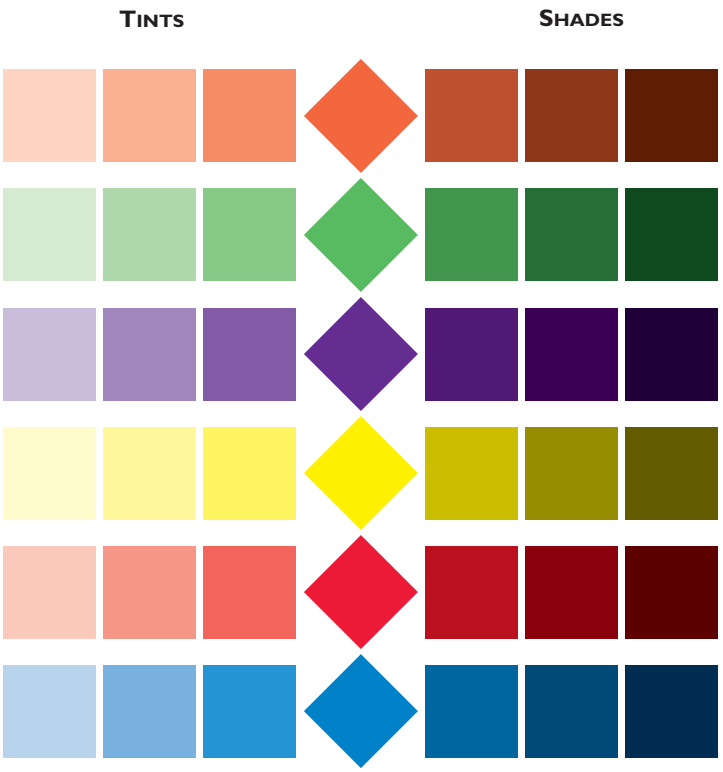
Value

Value is *the art element that describes the darkness or lightness of a color.* The amount of light a color reflects determines its color value. Not all hues of the spectrum have the same value. Yellow is the lightest hue because it reflects the most light. Violet is the darkest hue because it reflects the least light.

Black, white, and gray are *neutral colors* **(Figure 6.6).** When white light shines on a white object, the object reflects all of the color waves and does not absorb any. As a result, you see the color of all the light, which is white.



▲ **FIGURE 6.6** Neutral colors: black, gray, and white.



▲ **FIGURE 6.7** Color value scales.

A black object absorbs all of the color waves. Black reflects no light; black is the absence of light. Gray is impure white—it reflects an equal part of each color wave. The more light that gray reflects, the lighter it looks; the more it absorbs, the darker it looks.

You can change the value of any hue by adding black or white **(Figure 6.7).** *A light value of a hue* is called a **tint,** and *a dark value of a hue* is called a **shade.** The term *shade* is often used incorrectly to refer to both tints and shades. A tint is created by adding white; a shade is created by adding black.

When artists want to show a bright, sunny day, they use tints **(Figure 6.8).** Paintings having many tints are referred to as *high-key* paintings. Cassatt's *Margot in Blue* is an example of a high-key painting. *Low-key* paintings have shades,

▶ **FIGURE 6.8** Everything except Margot's eyes and hair are painted with tints of color. Even the shadow in the upper left corner of the picture has been softened with gray. The white highlights shimmer and create the effect of a sunny day.

Mary Cassatt. *Margot in Blue.* 1902. Pastel. 61 × 50 cm (24 × 19⅝″). The Walters Art Gallery, Baltimore, Maryland.

or dark values, which are used when the artist wants to represent dark, gloomy days, nighttime, and dusk. Dark values can add a feeling of mystery to a work. They can also be used to create a sense of foreboding or danger **(Figure 6.9).**

If the change in value is gradual, the design produces a calm feeling. If the values take large leaps up and down the scale, from almost white to almost black, the artwork has an active, even nervous, effect.

◀ **FIGURE 6.9** The dark values in this work enhance its ominous mood. Every hue in this work has been darkened with the addition of black except one. Which hue has not been changed? Why?

Rufino Tamayo. *Girl Attacked by a Strange Bird.* 1947. Oil on canvas. 177.8 × 127.3 cm (70 × 50 1/8″). Museum of Modern Art, New York, New York. Gift of Mr. and Mrs. Charles Zadok.

Activity Creating Values

Demonstrating Effective Use of Art Media and Tools in Painting. Select a hue. Draw a row of three equal shapes. If you are using an opaque paint, such as tempera, add only a small amount of the hue to white with a brush or palette knife. Fill the first shape with the light value. Paint the second shape with the pure hue. Add a small amount of black to the hue to create a dark value, and paint this in the third shape.

If you are using a transparent watercolor paint, make a light value by thinning the paint with water to let more white paper show through. Make a hue darker by adding a small amount of black. Fill the three shapes as in the above directions.

Computer Option. Look at the color palette of your software program. Choose only the tints and shades of one hue to create a computer drawing of a simple cityscape or underwater scene. Colors do not have to be used realistically. Your software program will determine the number of tints and shades that you can use. If your software has the capabilities, mix your own tints and shades for use in this assignment.

Intensity

Intensity is *the brightness or dullness of a hue* **(Figure 6.10).** If a surface reflects only yellow light waves, for example, you see an intensely bright yellow. If a surface reflects other light waves, the color will appear duller. A pure or bright hue is called a *high-intensity color.* Dull hues are called *low-intensity colors.*

Complementary colors are *the colors opposite each other on the color wheel.* The complement, or opposite, of a hue absorbs all of the light waves that the hue reflects **(Figure 6.11).** Red and green are complements. Green absorbs red waves and reflects blue and yellow waves. (Blue and yellow waves combine to appear green.) Red absorbs blue and yellow waves and reflects red waves.

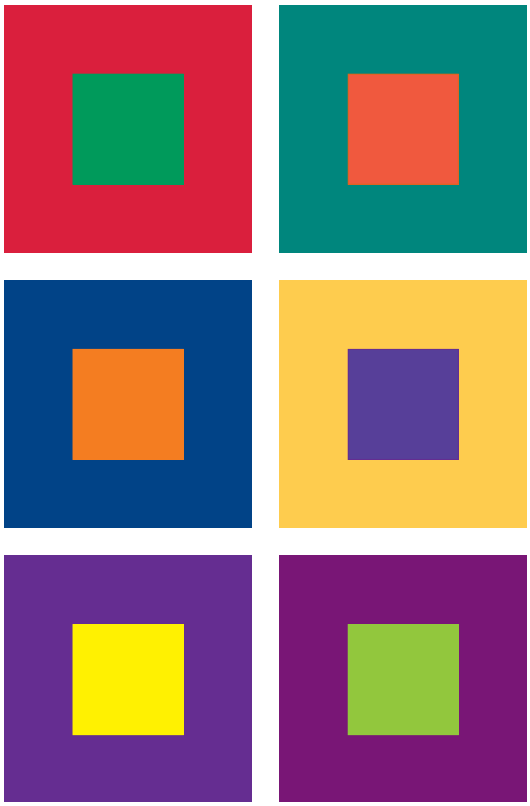
Mixing a hue with its complement dulls the hue, or lowers its intensity. The more complement you add to a hue, the duller the hue looks. Eventually, the hue will lose its own color quality and appear a neutral gray.

The hue used in the greatest amount in a mixture becomes dominant. For this reason, a mixture might look dull

▲ **FIGURE 6.10** Intensity scale. This scale shows how the intensity of one hue changes as you add its complement to it. The first box is pure, high-intensity green. Each time you add more red, the green becomes duller. Eventually the even mix of green and red creates an interesting, low-intensity gray.

orange or dull blue, depending on the amount of color used. Orange and blue mixtures usually yield brownish results.

Hue, value, and intensity do not operate independently. They rely on one another to create all of the colors that you see around you. When you observe colors, you will see dull tints and bright tints, dull shades and bright shades, light hues and dark hues. Knowing the three properties of color helps you to understand and use color.



▲ **FIGURE 6.11** Sets of complements. The left column are sets of primary and secondary complements. The right column are sets of intermediate complements.

Activity Working with Intensity

Applying Your Skills. Contrary to what you may have thought, tree trunks are not really brown. They reflect a variety of light and dark low-intensity grays. Draw seven or more bare trees on a large sheet of white paper. Use real trees as models, if possible; if not, find photographs. Combine varying amounts of one primary color and its complement as well as white and black to create a number of different, low-intensity light- and dark-valued colors. Then use these colors to paint each tree a different color.

Computer Option. Design a simple motif using only two solid colors. Use Copy and Paste options to make five copies of the motif. Fill each motif with one primary color or intermediate color and its complement. If your software has the capabilities, mix the two complements together to create a dull or low-intensity version of each. Label each set of complements and mixture sets.

Check Your Understanding

1. What are the three properties of color?
2. Define *color wheel*. What does a color wheel show?
3. Describe the difference between tint and shade.
4. Compare and contrast the use of value in Figure 6.8 on page 140 and Figure 6.9 on page 141.