

complications of simultaneous contrast and other brain-related misperceptions.

## Value

The best way to assess accurately the lightness or darkness of a color is to construct a gray scale that can also be used as a tool to gauge the value levels of specific colors. As with Newton's color wheel, we are going to "roll up" our gray scale into a value wheel. Values are traditionally shown arranged in a linear scale from white to black, as in **Figure 6-2**. Circular scales, however, are much easier to see in the mind's eye, therefore making it easier to visualize *opposite* values, which are important in harmonizing color. Therefore, we will again use the clock face as our mnemonic for identifying the value levels of colors (**Figure 6-3**).

### Exercise 5. Shades of Gray— Constructing a Value Wheel/Hue Scanner

1. Use your template to draw a wheel on a 9" × 12" piece of illustration board. This time, cut out the wheel from the board by cutting along the outside rim of the circle with your mat knife or scissors. With your mat knife, cut out the small square in the center of the wheel.
2. Set up your palette with white and black pigments only. Paint the 12 o'clock segment with pure white, making sure that you paint right up to the circular edge, or, better still, *off* the edge, of the wheel.
3. Next, paint the 6 o'clock segment with pure black.
4. Mix white and black to achieve a gray that is just midway between white and black. Eyeball your mixture to make sure it is middle value gray, and then paint the 3 o'clock segment. (Save the mixture on your palette because you will use it again on the way up from black to white, from 6 to 11 o'clock.)

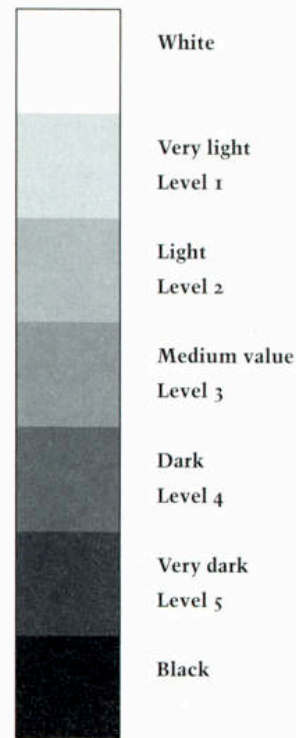


Fig. 6-2.

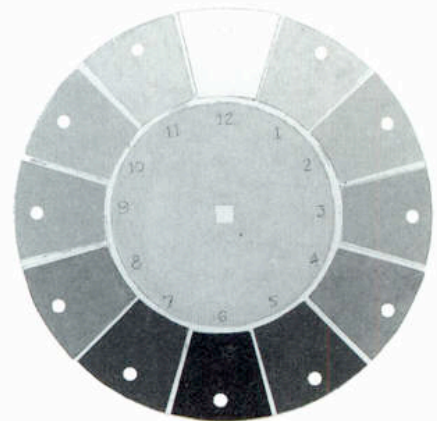
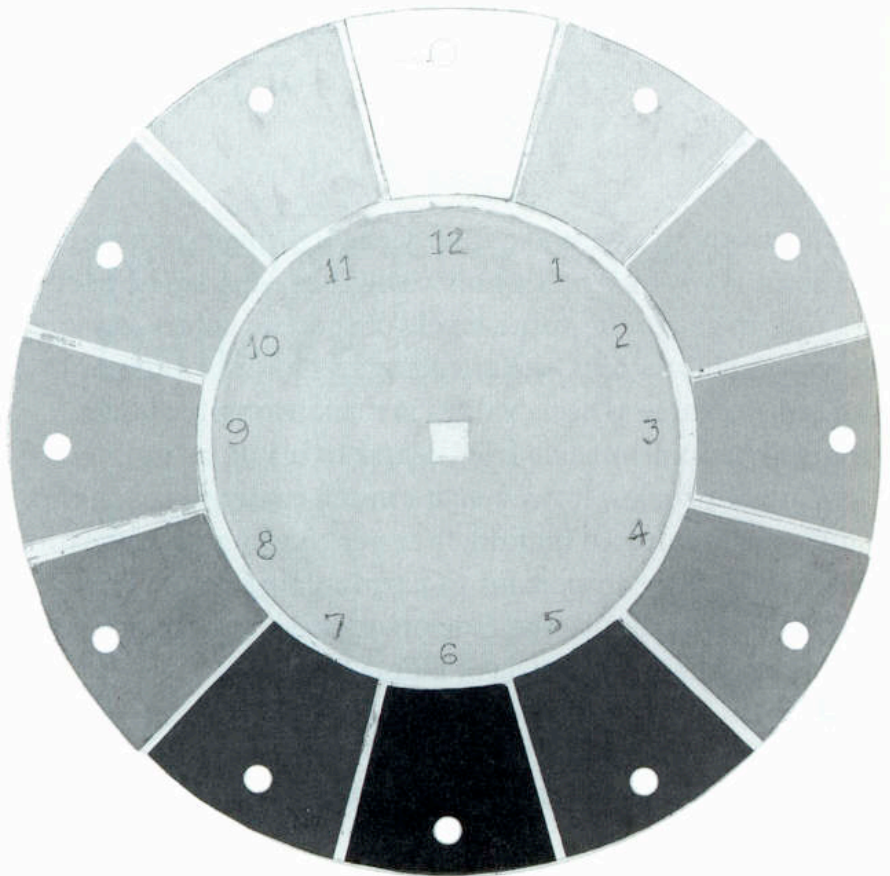


Fig. 6-3.



“When the steps are equal, the eye senses that all is in order and in proper balance. The gray scale itself is harmonious.”

Albert Munsell, *A Grammar of Color*, 1969

5. Now add white to your middle value gray to “step up,” or lighten, the value in equal increments at 2 and 1 o’clock, going toward white at 12 o’clock (see the value wheel above). Paint these segments and eyeball the values again to make sure that you have equal steps up from middle value gray at 3 o’clock up to white at 12 o’clock. Again, save the mixtures.
6. Next, mix two grays that “step down,” or darken, in value by adding black to your middle value gray. Paint these darker grays at 4 o’clock and 5 o’clock, again making sure the steps between middle value and black are equal steps.



One-half of your value wheel clock face is now complete. Check to make sure you have equal steps from white to black by squinting your eyes to see if there is an even flow of steps from white to black. If any level seems too dark or too light, adjust the mixtures and repaint if necessary.

7. Using the gray mixtures already on your palette, complete the clock face by painting 7, 8, 9, 10, and 11 o'clock on your value wheel, this time "stepping up" from black to white. Middle value gray will again appear at 9 o'clock.
  - a. Paint the large inner circle of the wheel a pale gray—a value just between level 1 (very light) and level 2 (light). You will use this central area with its small cutout square as a hue scanner, as I explain below.
  - b. The last step is to use a hole punch to make a hole in each value step from 1 to 12 o'clock and to print the clock-face numbers on the wheel, using either pencil or pen. See the completed value wheel on page 62.

### How to Use Your Value Wheel/Hue Scanner

You will use this wheel in three ways:

- First, as a *hue scanner* to name the source hue of a color, its first attribute.
- Second, as a *value finder* to name the color's second attribute, its lightness or darkness.
- Third, as an *opposite-value finder* for one of the exercises to come. The arrangement of values on the wheel—from white to black and then, in reverse order, from black to white—makes finding opposites very easy.

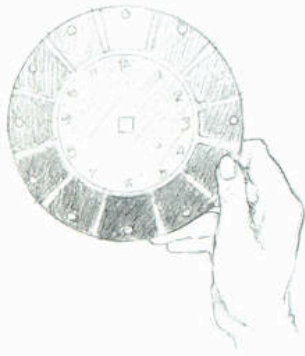


Fig. 6-4. Use the square center to determine the source hue.



Fig. 6-5. Use the outer punched holes to determine the value level.

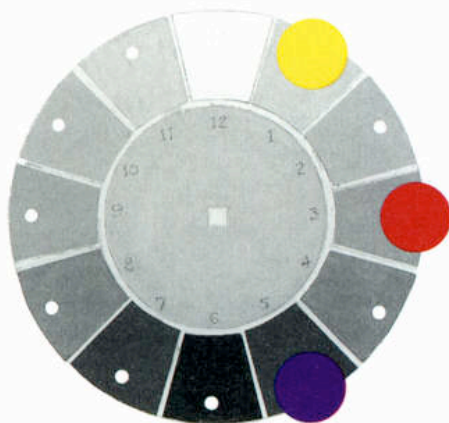


Fig. 6-6.

For now, practice using your value wheel/hue scanner by doing the following:

1. Hold up the wheel at about arm's length, close one eye, and look at a color in the room through the square hue scanner opening in the center of the wheel (Figure 6-4).
2. Name the source hue of the color—one of the twelve color wheel hues.
3. Then, look at the same color through the punched holes of the gray scale, turning the wheel to compare the color to several values in your gray scale until you find the value that "fits" the color (Figure 6-5).
4. Name the value level according to its clock number 12 to 6. Note that the wheel also enables you to find the opposite value (6 to 12). For example, the opposite of value level 2 is value level 8.

With the help of this tool, you have thus named the first two attributes of color (hue and value) as preparation for mixing it (leaving the third attribute—intensity level—still to be determined, a skill you will learn in chapter 7). The next step in your exploration of value is to learn how to make colors lighter or darker.

### How to Lighten and Darken Colors

Each pure pigment that you buy in tubes or jars has its own value level. Cadmium yellow pale, for example, is at about value level 1 on your value wheel, whereas cadmium red is about midvalue or value level 3, and cobalt violet is inherently darker at about value level 5 (Figure 6-6). Each of these pure colors can be made lighter or darker by adding either white or black, but each pure pigment will react differently to these additions, depending on the inherent value level of each pigment. For example, to lighten yellow to almost white, only a small amount of added white is