



**Always make a sample board.** When mixing colors, it is important to test them on scrap-wood before applying them to the workpiece.

## Altering the colors of dyes and stains

All colors are not created equal. How many times have you bought a stain or a dye and been surprised or unhappy with the results? Each manufacturer presents us with its version of a particular color, such as cherry, and the versions can be as different as night and day.

However, with a little knowledge of color theory and how to “read” colors in different ways, you’ll soon be controlling the color and not the other way around.

### Learn to read a color

Before you can adjust the color of a dye or stain, you need to discover what its true color is by applying it on a white background. Oil-based colors can be tested on paper, but because water- or alcohol-based dyes are absorbed quickly by paper, they are best tested on plastic plates. Dab on a small amount of color, then drag some of it out into a thin line. Do the same with a color you think will blend well, and then with the two colors mixed together. When using any pigmented color, be sure to stir the can until all of the pigment is in

suspension; otherwise, you will get an incorrect reading.

### Test the color on sample boards

Once you have created a blend that looks good on a plate, it is time to test it on a sample board. Use a piece at least 4 in. wide and 6 in. long for each sample, and be sure to keep notes on what went into each color mix and how many coats you applied.

Alcohol- or water-based colors dry so quickly that you won’t have the wet finished look you get with an oil-based color. So add a couple coats of clear finish to develop the final look of the piece.

### Adjusting dyes and stains

To help explain the process of adjusting color, I made a few sample boards, using a variety of cherry stains and dyes. The goal was not to produce four identical shades of cherry but to show how each original color can be changed.

**Oil-based stain**—Many penetrating oil stains are a blend of dyes and pigments,

## A COLOR WHEEL HELPS DIAL IN COLORS

The colors on a color wheel are divided into categories: primary, secondary, and tertiary. Primary colors—red, yellow, and blue—combine to create secondary colors—green, violet, and orange. Tertiary colors combine one primary and one secondary color. Colors opposite each other on the wheel are complementary colors. Mixing a color with its complement neutralizes (reduces the intensity of) the color. For example, if a stain is too red, add small amounts of green and watch the red change to a cooler brown.

Using a color wheel, first identify the main color of a stain. Then select stains containing colors adjacent to or opposite the main color on the wheel. Use these additional stains to mix the exact color you want. For a quick preview, you can pick a color on the rim of the wheel and rotate the inner circle to see the results of adding different colors.

The warm cherry and the cool walnut result in a deeper, cooler brown.

The golden oak combines with the cherry to give a brighter tone.

**CHERRY**

**WALNUT**

**GOLDEN OAK**

Adding a color from the opposite side of the wheel will tone down the stain.

**Color Wheel**

**Color Definitions:**  
**Primary Colors:** Red, yellow, and blue cannot be mixed from any other color.  
**Secondary Colors:** Green, cyan, magenta, violet, orange, and red-orange result from mixing two primary colors.  
**Tertiary Colors:** Yellow-green, blue-green, blue-violet, red-violet, red-orange, and yellow-orange result from mixing a primary color with a secondary color.  
**Neutral Colors:** White, gray, and black result from mixing complementary colors.  
**Color Wheel:** A circle of colors used to identify colors and their relationships. The outer ring shows the primary, secondary, and tertiary colors. The inner ring shows the complementary colors. The center shows the neutral colors.

**HOW TO USE A Color Wheel:**  
 1. Select a color on the outer ring.  
 2. Rotate the inner ring to see the results of adding different colors.  
 3. The inner ring shows the complementary color. The outer ring shows the color of the stain.

**Key:** Reduces color for color. The color of the stain. The color of the stain. The color of the stain.

## MORE RECIPES FOR CHERRY

**Bartley, Lockwood, and Solar-Lux each has a different idea of what the color cherry should look like. Using the techniques described, read the color to get a better idea of where it falls on the color wheel. Then, using the wheel, add complementary or adjacent colors to manipulate the original color until you are satisfied with the shade. It is safest to use stains or dyes from the same manufacturer in your recipe.**



### BARTLEY GEL STAIN



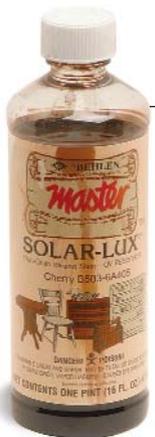
*The Pennsylvania cherry stain (left) has a strong purple hue. Mixing it with Bartley's greenish fruitwood stain in a 50:50 ratio produces a warm brown (center). Substitute Bartley's orange-brown country maple for the fruitwood, and you get a medium brown (right).*



### LOCKWOOD WATER-BASED DYE



*The early American cherry (left) is an orange-brown color. To neutralize the orange, add a small amount of its complementary color, violet, for a deeper brown (center). To create a more golden color (right), add about 20% of Lockwood's light golden oak to the cherry dye.*



### SOLAR-LUX NON-GRAIN-RAISING STAIN



*The original cherry (left) is reddish-brown. Adding 25% of medium-red mahogany deepens the tone (center). If you don't have the complementary color to neutralize red or orange, add black to produce a dark brown (right).*

but Minwax cherry stain is almost all dye with a very small amount of pigment. The Minwax product had a weak, almost neutral tan color, with very little reddish tone, or warmth, to it. For a deeper, warmer shade, I added to the cherry stain 25% of Minwax's special walnut stain. If you want a brighter shade, add 25% of Minwax's golden oak to the cherry stain.

**Gel stain**—In general, because of the density of their pigment-based color, gel stains are best used over wood that has been sealed already. However, in this case I wanted to emphasize the color, so I applied Bartley cherry stain to bare wood.

The stain had a pronounced purplish hue that I wanted to tone down. Bartley's fruitwood gel stain is a greenish brown that resembles raw umber. I combined the cherry and fruitwood stains in a 50:50 mixture, which produced a pleasing, warm brown color. For a neutral, medium-brown color, I blended Bartley's country maple stain, which resembles burnt sienna (orange-brown), with the cherry stain in a 50:50 mixture.

**Water-based dye**—For clarity of color, powdered dyes are the most versatile because you can mix them yourself, which allows you to control the concentration. When handling dye powders, make sure you wear a dust mask.

I selected the Lockwood early American cherry, which produced an orange-brown color. To create a deeper brown, I added a few drops of violet, the complementary color to orange.

**Non-grain-raising stain**—Non-grain-raising (NGR) stains, such as Solar-Lux, are a mixture of water-soluble dyes and solvents that don't include water. They work well as a background color. Some start out unrealistically bright and in strong light fade faster than a campaign promise.

The Solar-Lux cherry is a warm, reddish brown. To bring out the red tones, I added about 25% of medium-red mahogany. If you want to neutralize a color but don't have its complementary color, try adding black in very small quantities, say 2% or 3%.

Color, like food, is a subjective taste. The examples I have shown are a starting point. Don't be afraid to experiment, and don't get stuck using a color you don't like. □

## SOURCES OF SUPPLY

**WATER-BASED DYES**  
866-293-8913  
[www.wdlockwood.com](http://www.wdlockwood.com)

**BARTLEY'S GEL STAINS AND  
SOLAR-LUX NGR STAINS**  
800-645-9292  
[www.woodworker.com](http://www.woodworker.com)

**MINWAX STAINS**  
Available at most home centers  
and hardware stores