

Photoshop



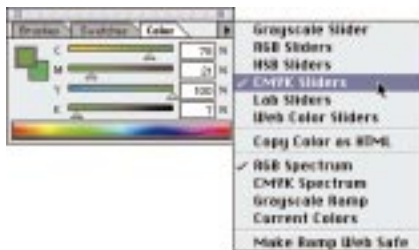
Part II: Photoshop's Color Modes

Photoshop has color picking tools galore, as we began to see in "Part I: Photoshop's Color Modes" (*PEI* February 2000). In Part I, we became acquainted with the various color systems, such as CMYK, RGB, HSB, Lab, and hexadecimal, and we looked at the reasons we would choose one color system over another. We rummaged through the Color Picker dialog box and discussed the importance of using it properly.

Now we'll move on to the Color Picker palette, the Eyedropper tool, the Swatches palette, and the Info palette (this plain looking palette is more useful than you think!). Finally, we'll look at some great ways to use Photoshop's measurement tools.

Color Picker Palette

A compact version of the Color Picker is available in the Color palette (Window>Show Color). In this palette, you can choose a color system from the side menu, then move a slider, enter a number, or click on the color bar at the bottom of the palette to adjust the colors of each



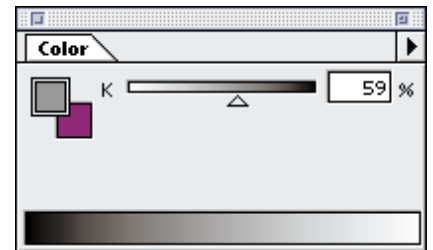
The Color palette is a smaller version of Photoshop's Color Picker dialog box.

channel. You can also change your background color by clicking on it within this palette (the one with the double border will change).

In fact, you can even change the color bar: Choose one of the bottom choices from the side menu (right mouse button in Windows), ctrl-click on the gradient or shift-click on it to cycle through the choices. RGB Spectrum will display the colors reproducible in RGB mode; CMYK Spectrum will display the toned-down colors that are reproducible in CMYK mode; the Grayscale Ramp will show only grays; and Current Colors will show the gradient between the current foreground and background colors. This palette has some real advantages over the Color Picker dialog box.

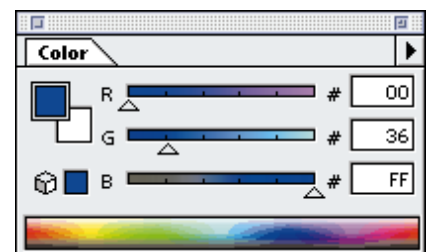
When performing color correction in CMYK mode, it is important to use the correct amount of cyan ink in neutral gray areas. To do this, set the palette to the CMYK sliders, use the Grayscale Ramp, and then click and drag across the gradient at the bottom of the palette. Now you can determine exactly how much cyan is needed for any shade of gray. You can even do that while you are performing color correction in the Curves dialog box!

The grayscale slider is a nice feature of the Color palette, which the Color Picker dialog lacks. This control is essential when working on a grayscale image, channel, or layer mask or performing color correction.



Choose Grayscale Sliders to specify specific shades of gray.

If you create Web graphics, you'll want to choose Web Color Sliders (Version 5.5 only). Photoshop will make the sliders snap to the tick marks on the sliders, which is where all the Web-safe colors are. If you don't want a Web-safe color, just hold the option key as you drag the sliders. If you want to use the same color in an HTML program, choose Copy Color as HTML to supply the code. Then you can paste it into an HTML generation program like Adobe GoLive. You can also choose Make Ramp Web Safe from the side menu to display only Web-safe colors within the bottom color bar.



Choose Web Color Sliders and Make Ramp Web Safe to get the most Web-friendly color picker you have ever seen.

One more color palette goodie before we move on: With default settings, the colors that appear in the sliders change as you move the sliders, to show you what would happen to a color if you moved one of the sliders to a specific position. At that point, you can simply look at the color in the slider to see what you'd get. You can turn off this feature if you'd like, and then the sliders will indicate only the color you are controlling (R, G, B or C, M, Y, K). I never turn it off, but you can, by choosing File>Preferences>General, then turning off the Dynamic Color Sliders checkbox.



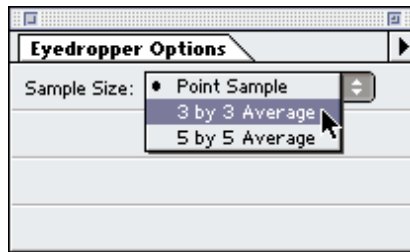
Left: Dynamic Sliders option turned on.
Right: Dynamic Sliders turned off.

Eyedropper Tool

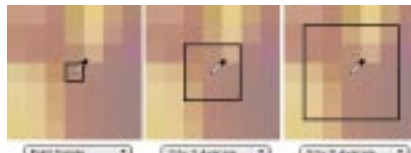
There is still one more method of choosing a color—the Eyedropper tool. With the Eyedropper, you just click anywhere within any open image and the foreground color will change to the color you click on. You could also hold down the option key to change the background color. When you use the Eyedropper, it usually looks at only the exact pixel you click on, but you can change it so that it takes an average of a 3x3- or 5x5-pixel area. This change is made by changing the settings in the Options palette, or control-clicking (right mouse button in Windows) and choosing from a similar menu.

I usually have the Eyedropper set to 3x3 pixels to average in any noise or imperfection in the image. Otherwise, I might accidentally get a whisker color when what I wanted to select was a flesh tone. If you have trouble figuring out exactly what part of the image you are clicking on (because you get an Eyedropper

cursor), press the caps lock key to bring up a crosshair cursor.



The Sample Size setting determines how many pixels Photoshop will average when using the Eyedropper tool.



The black boxes above indicate how many pixels Photoshop would average when using the Eyedropper tool.

Swatches Palette

Now that you're completely armed when it comes to choosing colors, let's figure out how to store the colors you like for quick retrieval. That's the purpose of the Swatches palette. If it's not already open on your screen, choose Window>Show Swatches. Click on any of the open spaces at the bottom of the palette to add the current foreground color to the palette. If you use up all the spots, resize the palette to make room for more by pulling on the lower right corner. You can also hold down the shift key and click on one of the existing colors to replace it, or hold down the command/control (cmd/ctrl) key and click on a color to remove it from the palette.

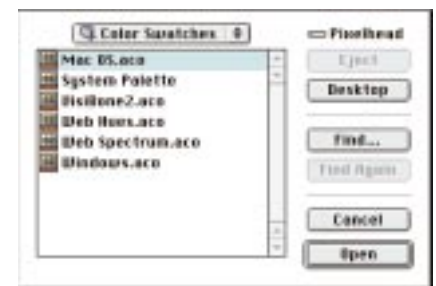
No, you can't drag them around to rearrange them, though I wish you could. When you have assembled the colors you would like to use, click on a swatch to change the foreground color. You can also opt/alt-click to change the background color. If you've played around until the colors are all mixed up, choose Reset Swatches from the side menu

of the palette to return to the default colors. Be careful—if other people use your computer, they might quickly wipe out all of those colors you so carefully picked. Once your colors are nicely organized within the Swatches palette, choose Save Swatches from the side menu so you can retrieve them any time with the Load Swatches command.



Use the Swatches palette to store commonly used colors.

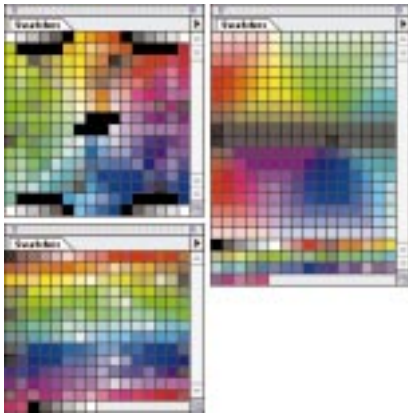
You're not stuck creating your own colors—Photoshop comes with a bunch of preset swatches. You just have to know how to get to them. Click on the side menu and choose Load Swatches if you want to add to what's already in the palette, or click Replace Swatches to get rid of the current ones. You should see a standard Open dialog box. Navigate your hard drive to the Photoshop>Goodies>Color Swatches folder, where you will find the presets. Let's see what we have to choose from.



Choose Replace Swatches from the side menu of the Swatches palette to access Photoshop's preset swatches.

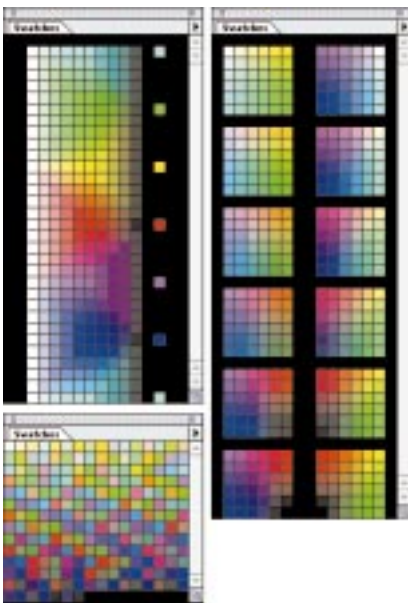
The Macintosh OS and the system palette files are identical. They are used mainly in the design of interface elements, such as the icons that appear on your hard drive.

VisiBone, Web Hues, and Web Spectrum are all ways to organize the Web-safe colors we discussed.



Clockwise from top left: VisiBone2, Web Spectrum, Web Hues.

Adobe didn't stop there. You can access extra goodies that are not loaded on your hard drive with the default install. Go grab the CD-ROM that Photoshop came on and plunk it into your computer. You'll notice another Goodies folder on the disc that contains even more Web-safe swatch presets. These were created by Lynda Weinman and they look like this:

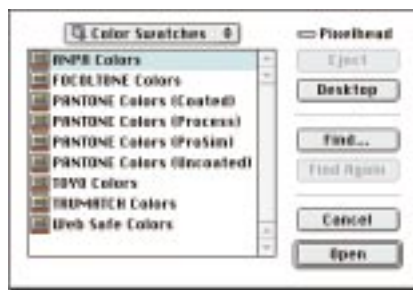


Clockwise from upper left: full saturated range, 216 browser-safe colors, 216 by luminosity.

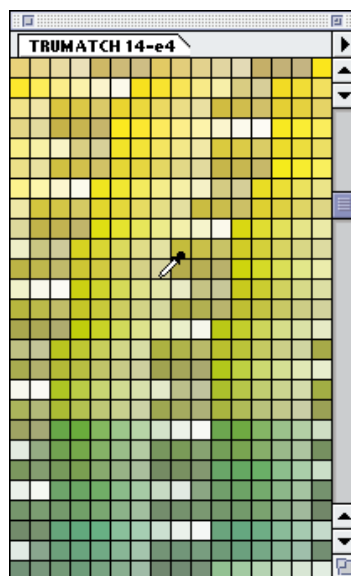
Lynda was crazy enough to create more than 30 versions of these palettes—if you enjoy them, be sure to check out her Web site: www.lynda.com.

Let's get back to the normal

presets. The Windows palette is used in the same way as the Mac palette, and has even more preset palettes available if you know where to look. In Version 5.5, Adobe moved some of the swatches files from the Color Swatches folder to another file. Inside the Goodies folder, notice the folder called Adobe Photoshop Only. Inside that folder is another one called Color Swatches, where you'll find another list of preset palettes. All of these choices are special (except Web Colors). When you open one and move your cursor over the swatches, the name of the Swatches palette will change to display the name of that particular color. These are the same choices you had when we were in the custom version of the Color Picker dialog box.



The Photoshop>Goodies>Adobe Photoshop Only>Color Swatches folder contains custom color swatches.

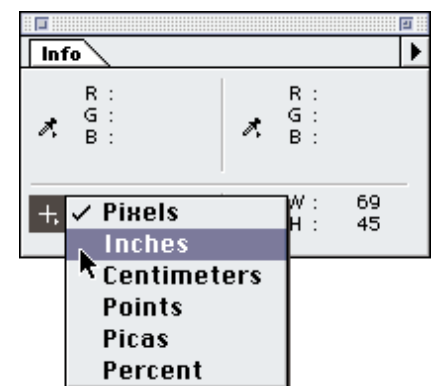


When using a custom setting, the name of the swatches palette changes to indicate the color your cursor is over.

Now that you know how to get an array of colors in the Swatches palette, you might want to use it all the time. You can even use the colors in the Swatches palette when you are in a dialog box. For instance, create a new layer, paint in it, and then choose Layer>Effects>Bevel and Emboss. You should notice a small square to the right of the highlight settings. Click on this square to bring up a Color Picker. When it's open, move your cursor to the Swatches palette and click on one of them (you can even click on your image instead). If the Swatches palette is collapsed at the bottom of your screen to conserve space, you won't be able to open it without choosing its name from the Window menu (double-clicking the palette's name earns you only a beep from Photoshop).

Info Palette

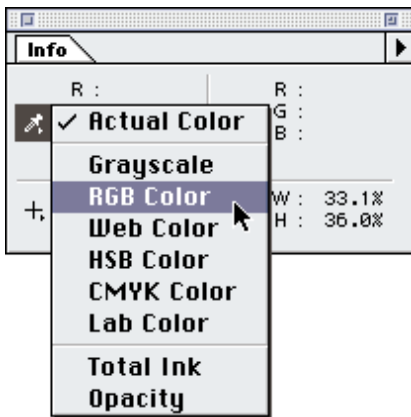
Now you should know your way around the Swatches palette, but there's even more to know about describing colors. If you've already used a color in your image, then you might want to use the Info palette to see what it's made of. Open the Info palette (Window>Show Info) to see the composition of the color directly under your cursor.



The Info palette describes the color that is currently under your cursor.

With default settings, the Info palette is smart enough to know the color mode your image is in, and it

will make the upper left readout reflect that mode. Just because you happen to be working in RGB mode at the time, it doesn't mean you want Photoshop to define your colors that way. You can always change the mode by clicking on the little Eyedropper icon next to any of the readouts in the Info palette and choosing from a number of methods for defining a color.



Click on the Eyedropper icon to change the method Photoshop uses to describe colors.

Some of these choices are less than obvious. Actual Color means the readout will reflect the color mode your image is in. There are some special ones at the bottom of the menu, too. Total Ink will add up the percentages of cyan, magenta, yellow, and black to indicate the total amount of ink coverage in an area, which is useful if the job will be printed on a press. The kind of paper you use dictates how much ink you can apply without causing drying problems.

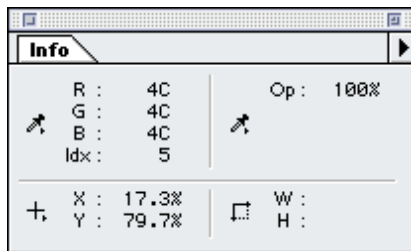
So, for example, if a friend gives me an image in CMYK mode, I could use this setting to find out if he exceeded the recommended percentages of each ink for the kind of paper I'm printing it on. You can find out this kind of information if you have a good relationship with your printing company.

Some RGB colors can't be reproduced using CMYK inks. Since you

can't change a color using the Info palette, Adobe decided not to include the same type of warning (that triangle thingie) that you find in the Color Picker. Instead, they added exclamation marks (!) next to the CMYK numbers to indicate that the color you are looking at is not reproducible with process color inks.

The Opacity option indicates the opacity of the area below your cursor. Rather than looking at a single layer, the Opacity option looks at the entire image, as though you had merged all of the layers together. I use this in unusual instances, like when I work with an image from a CAD program. These often arrive with an opacity of about 20%; you can't simply increase the opacity setting in the Layers palette—it's already at 100%. So I duplicate the layer multiple times, until I see the opacity in the Info palette reach 100%, and then I merge the layers together. (It's hard to see the difference between 95% and 100% opacity.)

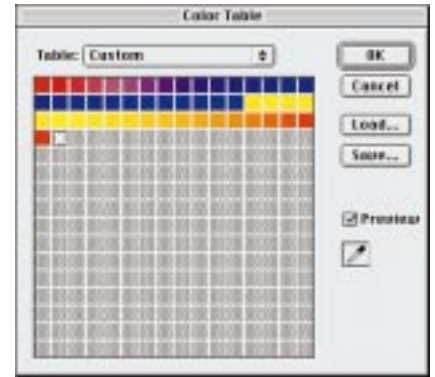
Another choice new with Photoshop 5.5 is Web Color. In this mode, Photoshop will show you the hexadecimal values of the color under your cursor.



Choose Web Color to display the RGB values as hexadecimal values.

If the image is in Indexed Color mode, Web Color will also indicate which color in the color table is in use (Idx). You can take a look at the color table by choosing Image>Mode>Color Table when you are in Indexed Color mode. The Idx readout tells you the color your cursor is

on top of. It's a bit confusing because Photoshop designates the first color in the palette as zero. You can also use the Color Table dialog box to create a file that is compatible with the Swatches palette—just click the Save button.



When an image is in Indexed Color mode, you can choose Image>Mode>Color Table to view the color table in use.

If you forget that you can click on the Eyedropper icons within the Info palette, there is one more way to change the settings for the different readouts in the Info palette. Choose Palette Options from the side menu of the palette and Photoshop will present a dialog box for those options.



Choose Info Options from the side menu of the Info palette to see the settings in use.

The only problem with the Info palette is that it indicates the color of the single pixel under your cursor, which is not always terribly useful. Sometimes you want to monitor other areas as you adjust your image. In Version 5.5, Adobe added a more useful feature for the job: Color Sampler. To access it, click on the

normal Eyedropper tool in the Tool palette, but don't release that mouse just yet—if you hold the button down, you will find a new tool hiding under there. When you click on your image with the Color Sampler tool, a new readout will appear in the Info palette! You can add up to four of these samplers (conveniently labeled 1-4) to your image, and the Info palette will indicate what's currently under them. Check this out: Choose one of the controls under the Image > Adjust menu and watch what happens over in the Info palette.



You can use up to four color samplers at one time.

You get two sets of numbers! The numbers on the left indicate what was in the image before the adjustment and the numbers on the right tell you what will happen if you actually apply the adjustment. It's a wonderful feature to use when color correcting because it's usually exactly four areas in your image that you adjust (highlight, shadow, neutral gray, and flesh tone).

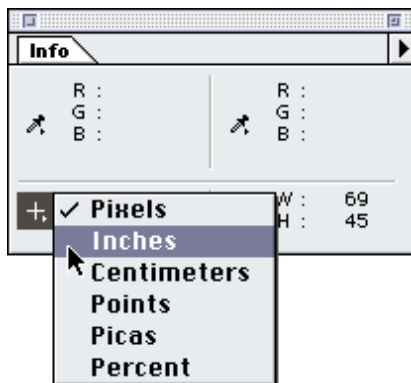
You can hide these color samplers if they get in your way by choosing Hide Samplers from the side menu of the Info palette. You can always bring them back by choosing Show Samplers from the same menu.

These color samplers are even saved in your file so you can return to them later. When you want to rid your document of them, then either drag them off the edge of your screen, or opt/alt-click on them while you are in the Color Sampler tool.

Two final things about the color samplers. I find I want to add them while I'm in the middle of an adjustment, but that doesn't work unless you hold down the shift key while clicking on your image. Occasionally, I want to use the Eyedropper to grab the color under one of the Color Samplers, but I find it hard to tell when they are aligned. The solution is to press the caps lock key to get a crosshair; you'll know the Eyedropper is aligned with the Color Sampler when the cursor disappears completely.

The Beauty of the Zero Point

As long as we're on the topic of the Info palette, I can't resist a side trip to the bottom part of the palette, even though it doesn't deal with describing colors. The number in the lower left of the Info palette indicates the position of your cursor relative to the "zero point" of your document. If you haven't messed with the rulers yet, then the zero point is always in the upper left corner of your document. With default settings, I believe the numbers are measured in inches, but you are welcome to change the measurement system by clicking on the crosshair next to the numbers.



Click on the crosshair in the lower left of the Info palette to change the measurement system in use.

I use inches, centimeters, points, and picas for print work; pixels for Web work; and percentages when I'm dividing my image into equal areas.

Here's a refresher course on measurements used in publishing: 6 picas=1 inch; 1 pica=12 points; 72 points=1 inch. The publishing industry loves this measurement system because it doesn't deal with many fractions; instead, you might hear measurements stated, for example, as 6p3, meaning 6 picas and 3 points.

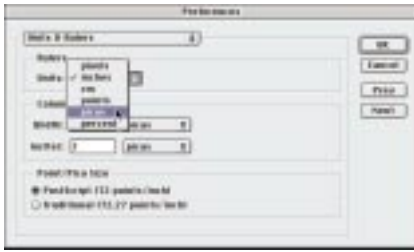
Most of the choices are self-explanatory, but Percent can be puzzling. This choice can tell you the exact center of your image: Set the measurement system to Percent, then move your cursor until the numbers in the Info palette read 50%—and eureka!

Back to the zero point. Turn on the rulers by either choosing View > Show Rulers, or by typing cmd/ctrl-R, then clicking in the upper left corner of the rulers where the little dotted lines appear. Now drag onto your image and the zero point will be defined for the Info palette to use. It will tell you how far your cursor is from the spot where you moved the zero point. To set it back to normal, double-click in the upper-left corner of the rulers. The zero point also affects where the rulers start.



Drag from the upper left corner of the rulers to change the zero point of the rulers.

Let's check out a few tricks you might find useful. First, double-click on one of the rulers and see what happens.



Double-click on the rulers to quickly access the Unites & Rulers settings.

That's a quick way to change the measurement system in use. Ok, now click on one of the rulers and drag onto your image—that should give you a guide. Before you let go, press the opt/alt key and your guide should reverse direction (from horizontal to vertical, etc.). Now, if you haven't let go, hold shift as you drag the guide around the screen and it should snap to the tick marks of the ruler.

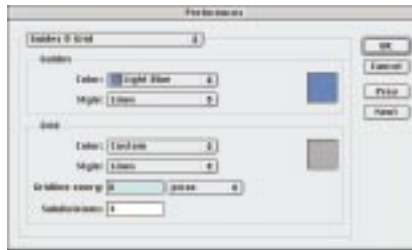
Set the measurement system to Percent, zoom out of your image so there are just a few tick marks, and now it should be pretty easy to put guides in the center of the image. Once you've placed a guide on your image, it might take you a while to figure out that you need to use the Move tool to reposition it, but that can mess you up when you're attempting to move a layer and your cursor just happens to be near a guide—you might move the guide instead. In that case, choose Lock Guides from the View menu so the Move tool won't affect that guide.

You've got the basics, so let's check out some interesting features. You can choose Snap to Guides from the View menu (default setting), and then when you move something on a layer close to the guide, it will cling to that guide. You can make this even easier by zooming out of your image, because Photoshop will only have a layer cling to a guide when it is so many screen pixels away from the guide. The more zoomed out you are, the fewer screen pixels Photoshop will

use, so the more likely that layer will snap to something.

Let's say you want to scale your image up or down, but you have a guide placed perfectly at one-half inch away from the left edge of the image. With default settings, the guides would stay at the same place relative to the content of your picture, so if you scale down your image 50%, the guides would be one-quarter inch from the edge. All you have to do is choose Lock Guides from the View menu; then when you scale your image up or down, the guides will stay exactly where they were relative to the rulers.

If you find it a bit hard to see your guides, then choose File> Preferences>Grids & Guides and change the options.



Choose File>Preferences>Grids & Guides to change the color of the Photoshop guides.

Finally, you can choose Clear Guides from the View menu to get rid of all those guides.

We haven't really finished talking about the Info palette. The Info palette is your best friend when it comes to precision measurements and definitions. The lower right part of the Info palette is useful when making selections because it will indicate the width and height in the measurement system of your choice. Unfortunately, you cannot type numbers into this area to change the width and height, but you can always choose Select> Transform Selection, then control-click (right mouse button in Windows) on your image and choose Numeric to do that.



Choose Select>Transform Selection, then cmd/ctrl-click and choose Numeric to numerically transform a selection.

If you're using the Line tool, you'll find a bunch of helpful info. The numbers next to the triangles indicate how far you've moved your mouse horizontally (X) or vertically (Y). You can find the angle of the line (A), or its length (D for distance). This used to be of great use when you wanted to rotate a image, but Adobe made that much easier in Photoshop 5.0.

Adobe added the Measurement tool when it released Photoshop 5.0. It looks like a ruler and sits directly above the Paint Bucket tool in the Tools palette. It gives you an efficient way to control angles. In fact, that's what I used to rotate the text up on the "Instant Expert" heading. With the Measurement tool, when you click and drag across your image to add a measurement line, the Info palette will pop open to show you the angle (A) and length (D) of the line. Then you can choose Edit>Transform>Numeric and Photoshop will enter the rotation angle needed to display your layer at the same angle as the line (it rotates only the layer that is active). Or, if you choose Image> Rotate Canvas>Arbitrary (which rotates the entire document), Photoshop will assume your entire document is crooked and straighten it so the area where you placed the measurement line will

become straight. It's even smart enough to check whether the line you drew is closer to being horizontal or vertical, and it will rotate your image accordingly. There is only one problem with using the Measurement tool—after you use it, the Info palette starts acting like it's spring-loaded, popping open at odd times when you least expect it to.

You'll also find these numbers showing up when you use the Move tool to reposition a layer. Some people use this info to move more than one layer by the same amount, but you can do that by linking the layers together instead. If you needed to move just a portion of multiple layers, you'd first make a selection. Then instead of staring at the numbers in the Info palette, choose Edit>Free Transform (or command/control-T), then move the layer. Now you can click on another layer, make another selection, and choose Edit>Transform>Again (or shift-cmd/ctrl-T) to move that one by the same amount. You can even add the opt/alt key to duplicate the info and then transform it.

Here's a situation where the Info palette becomes literally essential. What if you had two portraits and you wanted to make sure both faces were the same size? You could choose the document with the larger face, use the Marquee tool to make a selection that starts at the top of the subject's head and ends at the bottom of the chin, then (while still using the Marquee tool), click in the middle of that selection and drag it on top of the second document.

Position it so the top edge of the selection lines up with the top of the second head. Make sure the Info palette is open, then choose Select>Transform Selection and drag the bottom edge of the

selection until it touches the second person's chin. Now look over at the Info palette and the percentage readout (H stands for height) will tell you how much you need to scale that picture to make the heads the same size.

After this detailed and colorful lesson, let's quit until next time. While you're waiting for the next issue of *PEI* to arrive, check out all

the free tips I provide on my Web site at www.digitalmastery.com. ◀

Ben Willmore is the author of the best-selling book *Official Adobe Photoshop 5 Studio Techniques* (Adobe Press) and the founder of Digital Mastery, a training and consulting group based in Boulder, Colorado. Find out if Ben is coming to your area with his "Master Photoshop In 3 Days" seminar by visiting www.digitalmastery.com.

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