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Tips & Demos

Watercolor and watermedia
painting tips and demonstrations
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The content of these tips and demos pages are copyright 1997-2010. **However, please feel free to print them out for personal use only.** This section will continue to grow, so I suggest a loose-leaf notebook—that way you can organize the pages as you wish. To contact me with questions or comments, just click [here](#)

Topic: Learning to Mix Colors

If you bought the six basic tube colors I recommended in my Basic Supplies tip, this topic will help you learn to mix these six colors effectively. I recommend starting with a small number of colors and using and mixing those for a while to get completely familiar with what they can do; you can always add more colors to your palette as you get more experienced. Below are the six colors (with their alternates) that I recommend as starter colors. (WN) stands for Winsor & Newton Artists' watercolors, (GRA) stands for Grumbacher Academy watercolors. The first color listed is my first choice and are better quality paints overall, but because my viewers have asked for less expensive alternatives, I am including the Grumbacher Academy colors. However, please be aware that Golden Yellow and Vermilion Hue are not as lightfast as the Winsor & Newton alternates.

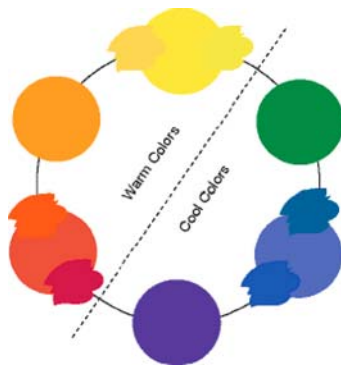
	<p>When choosing paints, go online to www.handprint.com and look up the particular manufacturer's paint you are considering to compare pigments used, transparency, staining etc. You may also consult either Michael Wilcox's <i>Guide to The Best Watercolor Paints</i>, or Hilary Page's <i>Guide to Watercolor Paints</i>.</p> <p>You cannot go by the common name (Sap Green, for example). You need to look for the pigment formulation so that you can compare one brand of paint to another accurately. This formulation is represented by the letter P (pigment), plus the letter R, Y, B, G, V, O, Bk, Br, or W. These letters stand for Red, Yellow, Blue, Green, Violet, Orange, Black, Brown and White respectively. Following the letters will be a number that represents a specific pigment. So, the formulation for a red paint color might be PR108, or for a blue paint color PB29.</p> <p>Updated November 2004 I am recommending Daniel Smith watercolors.</p> <p>The site  recommend starting with are: ultramarine blue or french ultramarine (PB29), hansa yellow light (PY3), carmine (PR176), phthalo blue GS (PB15), nickel azo yellow (PY150) <i>or</i> hansa yellow medium (PY97), and organic vermillion (PR188). The nickel azo yellow is a little more transparent than the hansa yellow medium - important if you intend to do a lot of glazing.</p> <p>Optional colors you may wish to add (for mixing darks and a wider variety of neutral grays and browns) are shown at the right, and include cerulean blue (PB35), transparent red oxide (PR101), Phthalo Green BS (PB7) and Quinacridone Magenta (PR202). The green and magenta in a saturated mix make a dark that is nearly black. The transparent red oxide with any blue or green will make a good gray or brown.</p>	
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Most of you are familiar with the color wheel. It consists of the primary colors—red, yellow and blue, and the secondary colors—green, orange and purple(or violet).

Reds, oranges and yellows are warm colors; Greens, blues and purples are cool colors.

Color mixing isn't complicated if you stop and think first about what color you want to mix. For example, if you want a "pure" vibrant purple, mix it from a red and blue that both share or are biased toward purple—permanent alizarin or thalo crimson and french ultramarine or ultramarine (permanent blue). If you want a slightly duller, less intense purple, use the orange-biased red (organic vermillion) and purple-biased ultramarine. If you want a *very greyed* purple (hardly purple at all!) use the orange-biased red with the green-biased blue.

This same theory applies to all your other hues. **The purest, most intense mixture**



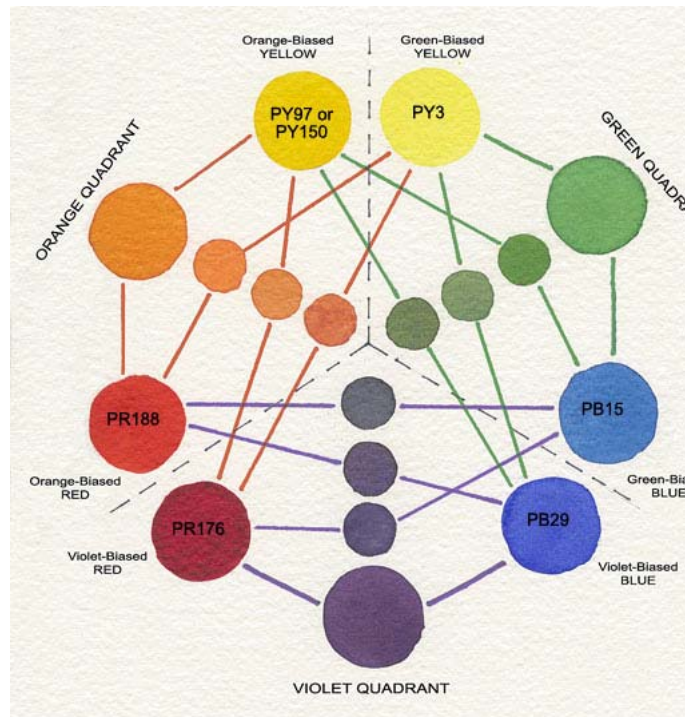
come from combining two primary colors that lean toward (are "biased" toward) the same secondary color.

The more colors you mix together, the grayer (duller) and less pure your mixtures will become as you can see from the mixtures below. The lines connect the two primary colors that were mixed in each case. Notice that when you cross the black dotted line into an adjacent color quadrant that the mixtures are duller.

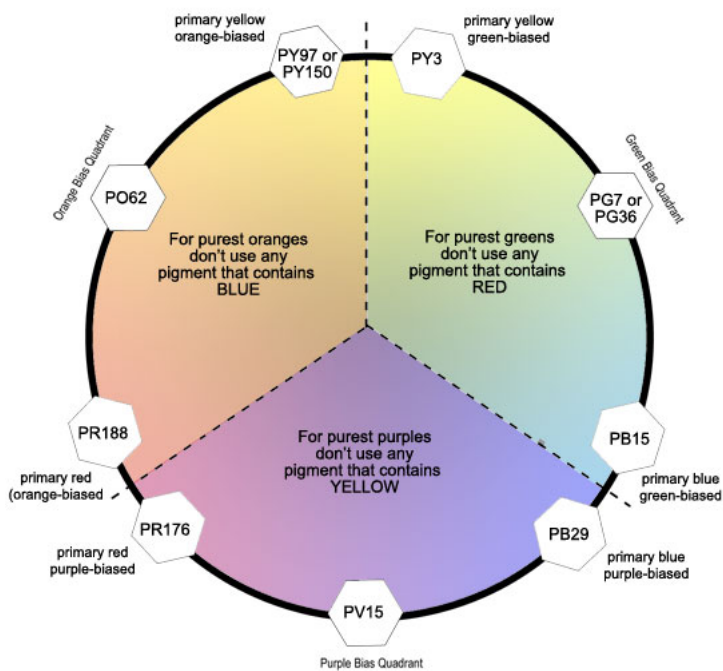
Colors that are opposite each other on the color wheel (like red and green, for example) will also neutralize each other when mixed, and make a grayish, brownish color. Try mixing the color you want using no more than three colors. Start with the lightest of the colors, and add the darker one to it, a little at a time, until you get the result you want. Remember that watercolor dries lighter, so what you see in your palette should be a deeper, more saturated mix to compensate for this drying shift.

Part of the difficulty in mixing watercolor paints arises from the fact that there isn't a "hue neutral" tube color for each of the primaries—red, yellow and blue (represented by the circles on the diagram above). Some are close, but most have a color bias, or leaning, toward some other color.

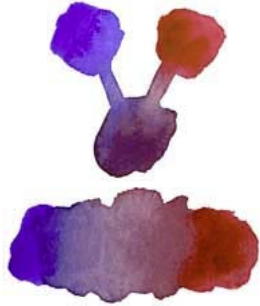





The six tube colors I suggest for beginners consist of two reds, two blues and two yellows. There is an orange-biased red (PR188), and a purple-biased red (PR176), a purple-biased blue (PB29) and a green-biased blue (PB15), a green-biased yellow (PY3) and an orange-biased yellow (PY97 or PY150).



The SPLIT PRIMARY COLOR WHEEL for Watercolor



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<p>Above: French ultramarine or ultramarine blue (PB29) mixed with permanent alizarin crimson, thalo crimson, carmine or any purple-biased red (PR176 or similar). These two colors both lean toward violet, so will give you the 'purest' purple mixtures.</p> <p>Below: Thalo blue GS (PB15) and bright red, vermilion hue, organic vermilion, scarlet lake (PR188 or similar). Because the blue leans toward green and the red leans toward orange, both of these pigments have some yellow in them, so the mix won't make violet, but more of a gray color. This is, in fact, one of my favorite mixtures for making near <i>black</i> (a very saturated wash) or <i>gray</i> (more water, less paint). You can make the gray warmer or cooler by adjusting the blue/red ratio.</p>	<p>Above: French ultramarine or ultramarine blue (PB 29) mixed with (PY3) Hansa Yellow Light or Lemon Yellow. These two colors will give you good greens, but because the blue leans toward purple (has a little red in it), the greens aren't 'pure'.</p> <p>Below: The thalo blueGS (PB15) mixed with Transparent Yellow or Nickel Azo Yellow (PY150) results in good rich greens, but again, not the purest mix, because the yellow leans toward orange.</p> <p>The purest greens would be from PB15 Winsor Blue GS or Thalo blue GS and PY3 (Hansa Yellow Light or Lemon Yellow) because they both lean toward green.</p>	<p>Above: Winsor Newton Permanent alizarin crimson or Daniel Smith carmine (PR176 or similar) mixed with PY3 (lemon yellow or hansa yellow light). These two colors give you the least pure oranges because they lean toward completely different color families (the red towards violet and the yellow towards green). If a quieter, duller orange is what you want, use these two pigments.</p> <p>Below: Scarlet lake or organic vermilion (PR188) and transparent yellow (PY 150) make good clean oranges because both of these pigments lean toward orange.</p>
		

Mixing more than two pigments, or mixing two pigments that are biased toward completely different colors will always result in more "neutralized" (less intense or pure) mixtures. These less intense mixtures can be wonderful colors, and you need to know how to mix them to play them off against brighter, purer colors.



In the example at the right, you can see that using duller, more neutral reds and blues around the brighter colors in the center (bottom, right) helps the bright colors stand out more than they do in the top right example, where the blue and red are used in their more pure, state.



Mixing color is a matter of proportion. How much of each color that goes into the mix determines the

How to Mix colors in watercolor



outcome. Always start your mix with the lightest of the pigments you are using, and add the others to it. Some pigments are much more "powerful" (that is, they have greater tinting strength), and it will only take a very small amount of them to change another color. In the sample at the left, I'm making a brown. The swatches on top approximate the proportion of color that would go into the mix. In the first sample, much less blue is used because it is thalo blue, and has much greater tinting strength than ultramarine blue.



Finally, colors will look different if you mix them on your paper rather than in your palette. Some artists like to only mix their colors on the paper, not completely blending them together. Others like the control of color that mixing in the palette gives. Experiment with both methods to find the way that suits you. **Whichever way you go, don't OVERMIX your pigments.** Just lightly swish them together. Let them retain a bit of their individuality...even in mixtures.

The little sample at the left uses color temperature (warm to cool) to move us from one side of the building to the other, and from the warm reflected light from the ground to the cooler reflected light from the sky. It also shows how using neutralized colors (in the building, shadows and ground) can set off purer, brighter colors (the red flowers and bright green bushes).

Want more help with this topic? Volumes 3 and 4 from my five-volume set of watercolor instructional videos for beginning painters covers this topic in depth.
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