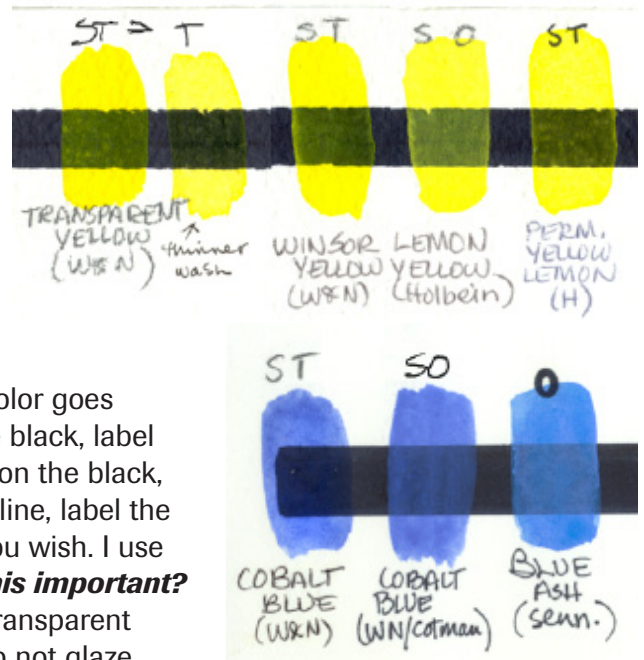# Introduction to Watercolor - Paint Characteristics

There are several characteristics of watercolors that the painter needs to be familiar with in order to make an informed decision about which palette or group of colors to use for a particular painting. These properties are: *transparency/opacity, tinting strength, staining quality, granulation/sedimentary quality, and color temperature (warm/cool bias).*

You can use inexpensive, lightweight (90 lb) watercolor paper or "scrap" watercolor paper for all color tests/ exercises, but it is suggested you do these test on the paper that you intend to paint on most of the time, as paper influences the results due to differences in sizing, surface and other factors.

Exercise 1:
Make a 1/2" wide line on cold press or rough watercolor paper with a permanent, waterproof (Sanford "Sharpie" or El Marko) felt-tip pen (or with waterproof India Ink). Make sure the line is completely dry.

Paint a saturated* color swatch of paint over your black line and let it dry. Label each swatch with the color name and manufacturer as you paint them. Do this for each color on your palette. Let each swatch dry. Then look at where the color goes over the black line. If you see no "color" where it goes over the black, label that swatch "Transparent". If there is just a little color showing on the black, label it "Semi-Transparent". If the color nearly covers the black line, label the swatch "Opaque". You may add a "semi-opaque" category if you wish. I use the abbreviations T, ST, SO and O to label my paints. ***Why is this important?*** If you want to glaze or layer watercolor, you want to use only transparent or semi-transparent colors. The opaques and semi-opaques do not glaze successfully, nor do pigments that contain a large amount of granulating particles.

Exercise 2:
This test gives you information on how staining a particular color is. ***Why is this important?*** If you want to lift out white or light areas from parts of your painting after the paint is dry, then you want to use the least staining pigments you can. Staining pigments do not lift easily or completely. They will also stain all other hues below them when used as a glaze, particularly if the glazed layer is at all saturated with pigment.

Again paint a saturated swatch of each of your colors on watercolor paper. Label each swatch as you go with the color name and manufacturer and let the swatches dry completely. Then using a synthetic bristle brush or toothbrush moistened with clean water, scrub back and forth over each swatch. Blot each swatch with paper towel or kleenex and rinse your brush between color swatches. Use the same number of scrubbed back and forth strokes for every swatch, so the test will be consistent (I count out 20 strokes). Note that if you soak and stretch your watercolor paper prior to painting, any surface sizing will be diluted or removed, and your paints will not lift as easily when dry.

* Saturation has to do with the pigment to water ratio. ANY pigment will appear transparent if there is a lot of water relative to the pigment, so make your swatches with enough pigment so that the mix is more like espresso, not weak tea.

Introduction to Watercolor: COLOR PROPERTIES

The **properties of color** include HUE, VALUE and INTENSITY.
HUE is the name of a color, like red or blue
VALUE is the relative lightness or darkness of a color (tints are light values; shades are dark values)
INTENSITY—sometimes called chroma—is the relative brightness or dullness of a color.

The **uses of color** in painting include:
• Creation of deep or shallow spacial illusions
• Creation of a particular "mood" or "feeling"
• Creation of symbolism or cultural associations
• Possibilities for personal expression and visual impact
• Identification of objects through use of local, descriptive color
• Pictorial organization through manipulations of color value, intensity, hue, dominance, etc.

How we use color in painting:
We work with color in the following ways, all of which have to do with CONTRASTS:
• We use a change in *hue* to contrast one color with another (red & blue for example)
• We use a change in *value* to contrast a light color with a dark one
• We use a change in *color temperature* to contrast a warm color with a cool one
• We contrast *intensity* (bright/saturated vs. dull/unsaturated)
• We contrast a color with its *complementary (opposite) color*
• We contrast the *relative appearance* between colors
• We contrast the *quantity* of one color with another

The first 5 of these contrasts are fairly straightforward, easily discernable and fairly easily manipulated. The last 2 are mainly of concern to painters whose primary interest in their work is the relationship between colors, although they can also be used to fine tune a painting that doesn't quite achieve harmony or unity.

Color Harmony
Color harmony or unity is achieved when the colors in your painting work well together, when the greatest contrasts help highlight your focal point, and when your color choices relate to the subject matter.

There are limitless possibilities for choosing and mixing colors, so it is up to you to limit your choices to the colors that will work best for the idea that you have in mind, and that reflect your own preferences in terms of how the painting looks, and the feeling the color generates. Some people prefer strong, saturated colors with strongly contrasting color schemes. Others lean toward "color neutral" schemes, using lots of earth colors in almost a monochromatic way. And some watercolorists prefer "close value" paintings, with all their values in a similar range whether light, medium or dark.

Color Keying and Pigment Compatibility
Beginners should probably limit themselves to 3-5 colors per painting. Doing so will guarantee a more harmonious color result, and force the artist to use a more complete range of values and intensities for each of the three or four colors chosen.

Introduction to Watercolor: NEUTRALIZING COLORS

To orchestrate your paintings, you will usually have one area that contains the purest, most intense colors, surrounded by other colors that have been subdued in intensity, or neutralized. You neutralize a color by adding some of its complementary color (the one opposite it on the color wheel). The more of the complement you add, the more neutral the color becomes until it is either a grayish or brownish hue.

Generally, these are the basic color complements:

Red & Green	Blue & Orange	Yellow & Violet
Red Orange & Blue Green	Blue Violet & Yellow Orange	Yellow Green & Red Violet

Why is this important?
Most beginners don't have any difficulty making muddy colors, so you are probably wondering why it's important to learn to make these low intensity, neutralized hues. And the answer is: Neutral doesn't mean muddy, chalky or necessarily opaque. Neutrals can be wonderful, subtle colors, and can serve as a foil to the brighter, clear, intense ones in your paintings. Learning to make "good" neutrals will help you orchestrate your colors, and as a result, create stronger paintings.

PURE COLOR		NEUTRAL		PURE COLOR
Hansa Yellow Lt. or Winsor Lemon				Perm.Aliz.Crimson + Ultramarine Blue
New Gamboge or Transparent Yellow				Perm.Aliz.Crimson + Ultramarine Blue
Quinacridone Red or Perm.Alizarin Crimson				Thalo Blue GS + Hansa Yellow Lt. or Winsor Lemon
Organic Vermillion or Scarlet Lake				Cerulean Blue
Organic Vermillion or Scarlet Lake				Thalo Blue GS

Note that the strongest darks are made from colors that are already darker in value right out of the tube. The difference is apparent when you compare the neutral made from cerulean and organic vermillion with the one made from the same red, but using thalo blue.

Exercise 3:

Make a chart similar to the one on the previous page, using your six primary colors. Where Cerulean Blue is used in the example, you are to use French Ultramarine Blue, and your mixtures will look different than the ones shown. The goal of this exercise is to begin to get comfortable with estimating the proportion of each color to use in the mix.

ALWAYS start any mixture with the lightest of the two colors, and add the darker one to it a little at a time. For example, the first row starts with Winsor Lemon or Hansa Yellow Light in your palette - a small puddle of fairly saturated color. In a SEPARATE puddle, mix a clear purple by starting with Quinacridone Red or Permanent Alizarin Crimson and adding the Ultramarine Blue to the red until you have a clean purple. Then you will start adding the purple to the yellow, a little at a time. For this exercise, you only have to make three mixtures - many more steps between yellow and purple are possible. Try to get your middle swatch halfway in between the yellow and purple, both color wise and value wise.
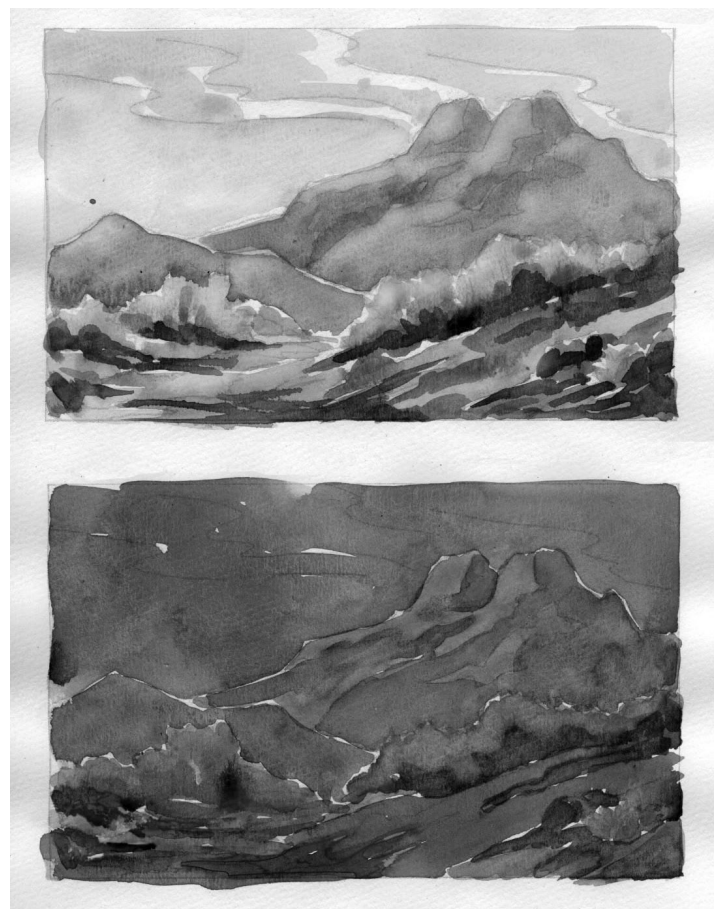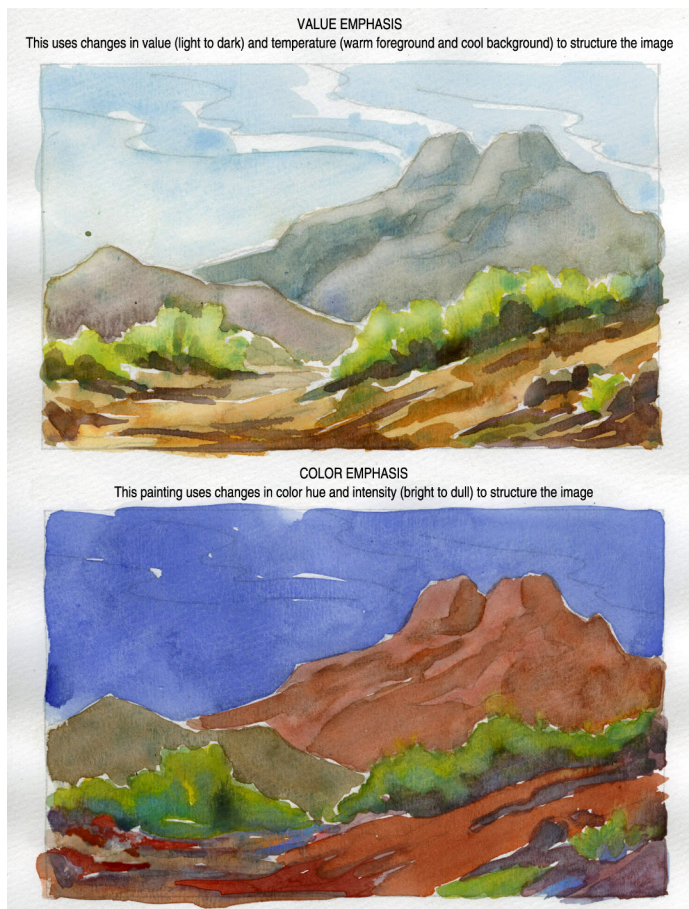
Repeat the exercise with the other color combinations.

What did you notice?

Too much water dilutes both value (light/dark) and intensity (bright/dull). Make sure you have enough pigment in your mixtures.

Some colors are stronger than others in mixtures (we call this tinting strength). You need far less of them in any mixture to affect a noticeable change in hue/value/intensity.
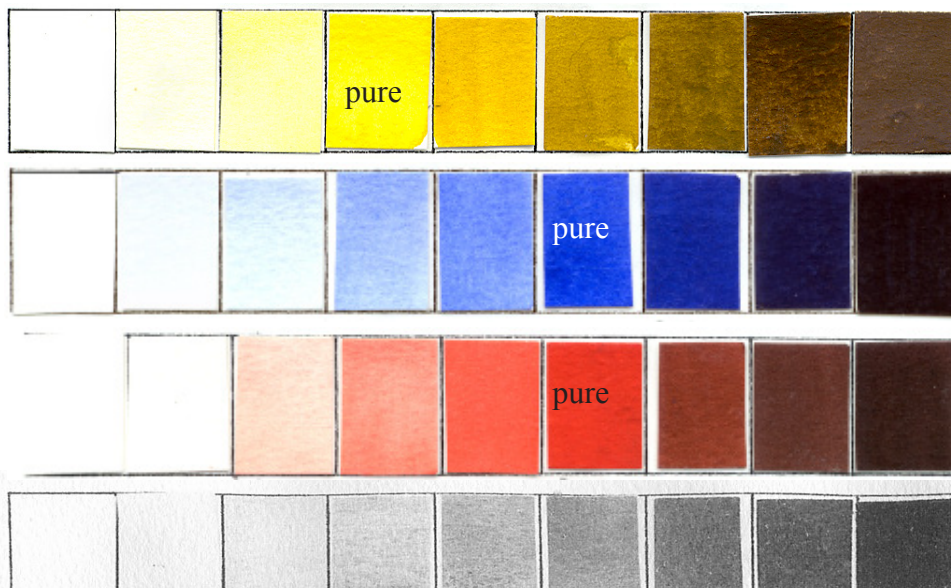
Value and intensity matter just as much as hue does when working with watercolor (see the examples below and their equivalent B/W versions) Your intent, as the artist, helps you decide which will dominate – hue, value or intensity.

VALUE EMPHASIS
This uses changes in value (light to dark) and temperature (warm foreground and cool background) to structure the image

COLOR EMPHASIS
This painting uses changes in color hue and intensity (bright to dull) to structure the image

Exercise 4:

Every color has a corresponding value. Learning to *see* that value, regardless of color, will help you or-chestrate your paintings to take full advantage of both the white paper, and all the values between light and dark. Use or paint a 5-7 step white to black value scale, and then, for each of your 6 primary colors, create a corresponding value scale. Paint your swatches on scrap paper so you can choose the ones that best match up to the gray scale. *Hint: You can use black to darken many, but not all colors. If you add black to any pigment with yellow in it, the results will be "greenish". Try a darker color in the same family or the color's complement. Use clean water to lighten the pure colors for the steps toward white paper.*

Note that the pure hues aren't in the same place on the value scale.

pure

pure

pure

We use the strongest light/dark contrasts of value to help focus attention where we want it to be (center of interest), to define or lose/blur edges of objects, and to make many small shapes/areas "read" as a single large shape.

Exercise 5:

Use this drawing, or lightly draw one of your own with the same simplicity of form (just outlines). Using only three primary hues (a red, a yellow and a blue), paint the image, mixing any secondary or tertiary colors you need from your primaries. Leave some part of your painting unpainted white paper (for the lightest light). Vary the pigment to water ratio with the rest of your mixtures so that some areas are very dark, some mid-value and some light-value.