A guide to the fundamentals of watercolor
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BASIC MATERIALS FOR WATERCOLOR PAINTING

It takes a minimal number of items to paint in watercolor - paint, paper and brushes along with a palette which will hold the paint and provide an area to mix paint and water together. A few additional supplies will make things easier but in all, one does not need to invest in a great deal of material, especially at first.

“Restraint is the key, especially if you are diving into watercolor for the first time.”

Most artists love browsing art supply stores and art catalogs for all the wonderful supplies and materials. However, restraint is the key, especially if you are diving into watercolor for the first
A relative few colors, a small handful of brushes and a single brand of professional quality paper will serve you well for a very long time.

**Paint**

Simplicity should be the guiding principle in the selection of colors, especially for beginners. Working with a limited number of colors from the start will help you develop a sensitive eye for color and lead to exceptional color mixing skills.

**Grades of Watercolor Paint**

Watercolor paint comes in two grades - Student and Professional. The biggest difference between the two is that there is more pigment and less binder (usually gum arabic) in professional grade paint.

There is one other important difference - student grade paint colors are often manufactured with less expensive pigments. Because of this, student grade paints with familiar names often look and work very differently from their professional grade counterparts. Many student grade paints will be labeled with the word “Hue”. What this means is that a manufacturer has created a color with a similar look and similar working characteristics, but with less expensive chemical pigments.

The pigment industry has created an index to the pigments and dyes used in commercial applications. This list is extensive and contains far more information than is really needed to understand the colors you are using. The most important piece of information is the **Color Index Generic Name** or CIGN.

Each pigment can be universally identified by its Colour Index Generic Name (CIGN). As an example: Cobalt Blue is Pigment Blue 28, abbreviated to PB28. The Color Index Generic Names of individual pigments to allow you to cross reference the working properties of particular paints, e.g. lightfastness, opacity, toxicity. More importantly, it is necessary to fully identify some modern formulations of traditional paint colors.
Every manufacturer names the colors they sell. These names are meant to be descriptive but they are not necessarily comparative.

The exact composition of a color with the same name can vary from one manufacturer to another. For instance, there are at least six different formulations of professional grade Permanent Alizarin Crimson among different manufacturers. They all look different and work differently with other colors. Knowing the actual pigment components by their CIGN codes will you avoid unpleasant surprises.

**Suggested Basic and Expanded Palettes of Color**

There are literally hundreds of different watercolor paints available. Even though we want to buy every color we see, it is not necessary. Below are lists of basic watercolors in both student and professional grades. The lists include the common, comparative name, suggested student and professional grade brand along with the CIGN code.

A recommended list of colors will vary greatly from one artist to another. I prefer using a very limited number of colors and mostly only versions of the Primary colors – red, yellow and blue. A palette that consists of only these basics is extremely versatile. Using a limited number of colors on the palette will help develop your ability to both see and accurately mix practically any color you need.

The Lists of Eight Basic Colors, below and on the next page, include two of each Primary Color and a couple useful neutrals. These will serve you very well as you learn and gain experience. The list on this page is a list of Student Grade colors. They are high-quality and work well but are considerably less costly than the equivalent Professional Grade colors on the next page.

“The exact composition of a color with the same name can vary from one manufacturer to another. For instance, there are at least six different formulation of professional grade Permanent Alizarin Crimson among different manufacturers.”

“Simplicity should be the guiding principle in the selection of color, especially for beginners.”
The list of Useful Additions to the Basic Palette, on the next page, are all professional grade colors that will add some additional range and flexibility, to the palette.

List of Eight Basic Colors – Student Grade
High-quality, but considerably lower in cost than the equivalent Professional Grade.

<table>
<thead>
<tr>
<th>Palette Color</th>
<th>Brand/Color</th>
<th>CIGN Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool Red</td>
<td>Grumbacher Academy / Alizarin Crimson</td>
<td>PR83</td>
</tr>
<tr>
<td>Warm Red</td>
<td>Grumbacher Academy / Cadmium Red Light Hue</td>
<td>PY65/PR188/PR97/PR178</td>
</tr>
<tr>
<td>Cool Yellow</td>
<td>Grumbacher Academy / Lemon Yellow</td>
<td>PY3</td>
</tr>
<tr>
<td>Warm Yellow</td>
<td>Grumbacher Academy / Cadmium Yellow Medium Hue</td>
<td>PY65/PY3</td>
</tr>
<tr>
<td>Cool Blue</td>
<td>Grumbacher Academy / Thalo Blue</td>
<td>PB15:4</td>
</tr>
<tr>
<td>Warm Blue</td>
<td>Grumbacher Academy / Ultramarine Blue</td>
<td>PB29</td>
</tr>
<tr>
<td>Light Neutral</td>
<td>Grumbacher Academy / Raw Sienna</td>
<td>PBr7/PY42</td>
</tr>
<tr>
<td>Dark Neutral</td>
<td>Grumbacher Academy / Burnt Sienna</td>
<td>PBr7</td>
</tr>
</tbody>
</table>

List of Eight Basic Colors – Professional Grade
Very high-quality, great working quality and light-fastness.

<table>
<thead>
<tr>
<th>Palette Color</th>
<th>Brand/Color</th>
<th>CIGN Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool Red</td>
<td>Winsor Newton / Permanent Alizarin Crimson</td>
<td>PR206</td>
</tr>
<tr>
<td>Warm Red</td>
<td>Daniel Smith / Cadmium Red Medium Hue</td>
<td>PY53/PR254</td>
</tr>
<tr>
<td>Cool Yellow</td>
<td>Cheap Joe’s American Journey / Aureolin</td>
<td>PY40/PY3</td>
</tr>
<tr>
<td>Warm Yellow</td>
<td>Daniel Smith / Cadmium Yellow Deep Hue</td>
<td>PY53</td>
</tr>
<tr>
<td>Cool Blue</td>
<td>Cheap Joe’s American Journey / Cobalt Blue</td>
<td>PB28</td>
</tr>
<tr>
<td>Warm Blue</td>
<td>Winsor Newton / French Ultramarine Blue</td>
<td>PB29</td>
</tr>
<tr>
<td>Light Neutral</td>
<td>Cheap Joe’s American Journey / Raw Sienna</td>
<td>PBr7</td>
</tr>
<tr>
<td>Dark Neutral</td>
<td>Cheap Joe’s American Journey / Burnt Sienna</td>
<td>PBr 7</td>
</tr>
</tbody>
</table>
Expanding The Palette of Colors

With a little experience, most watercolorists desire to expand their palette of colors. The table below suggests some useful additions to the basic palette. All of these are professional grade colors.

Useful Additions to the Basic Colors – Professional Grade

Very high-quality, great working quality and light-fastness. Adds additional range to the palette.

<table>
<thead>
<tr>
<th>Palette Color</th>
<th>Brand/Color</th>
<th>CIGN Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool Red</td>
<td>Cheap Joe’s American Journey / Permanent Rose</td>
<td>PR206</td>
</tr>
<tr>
<td>Secondary Orange</td>
<td>Daniel Smith / Cadmium Orange Hue</td>
<td>PY53/PO73/PY83</td>
</tr>
<tr>
<td>Secondary Violet</td>
<td>Cheap Joe’s American Journey / Royal Amethyst (Thalo Violet)</td>
<td>PV23</td>
</tr>
<tr>
<td>Light Cool Blue</td>
<td>Winsor Newton / Cerulean Blue</td>
<td>PB35</td>
</tr>
<tr>
<td>Dark Cool Blue</td>
<td>Winsor Newton / Indigo</td>
<td>PBk6/PV19/PB15</td>
</tr>
<tr>
<td>Intense Neutral Yellow</td>
<td>Daniel Smith / Quinacridone Deep Gold</td>
<td>PO48/PY150</td>
</tr>
<tr>
<td>Intense Neutral Red</td>
<td>Daniel Smith / Quinacridone Burnt Scarlet</td>
<td>PR206</td>
</tr>
</tbody>
</table>

Palette

Any large – at least 10” x 12”- sturdy, deep welled, white plastic palette with a cover will do. There are many manufacturers that produce good, low-cost plastic palettes that will perform well for many years.

Fill those empty wells with the paint from the tubes. It will make it easier to pull the large amounts of color you’ll need to create paintings with bright, rich color and a range of light and dark values.

The John Pike palette – large wells for paint and a large area for mixing colors. Fill those wells with paint!
**Brushes**

A handful quality synthetic or synthetic/natural blend brushes are really all that are needed to do the trick. There are many quality brushes made by many different manufacturers. The most important characteristics in watercolor brushes are water absorption, springiness and, for rounds, coming to a fine point at the tip. Brushes called “white sable” (which is really synthetic white nylon) or “golden nylon” are good choices to start with, as they generally combine the best characteristics of natural hair brushes at moderate cost. Whatever brand you chose there are five brushes to start with – a #8, #14 and a large – at least #20 - round, along with one 1” and one 2” wide flat.

This is all you need for brushes – 2” Flat, 1” Flat, a #20, and one or two #14 Rounds, a #4, or #5 Rigger. The squirrel hair dagger liner (second from right) is useful but optional.

**Paper**

There are many brands of watercolor paper on the market. Some are lower quality student grades and others are higher quality professional grades.

As it is with watercolor paint, the working properties of watercolor paper can vary widely from one manufacturer to another.

Watercolor paper is the one area to NOT try and save money!

If you are just beginning, a moderately absorbent paper with a cold press surface is best. It will help you manage the wet and fluid washes that are absolutely necessary in watercolor painting.

HIGHLY RECOMMENDED! Arches 140lb Cold Press or Kilimanjaro 140lb Cold Press paper.
Many beginning watercolor painters start out working on those rather popular watercolor paper pads found in most art supply shops. While relatively inexpensive, readily available and convenient, their surfaces have a heavy application of sizing that seriously affects the papers’ working properties. On these papers, the sizing keeps most of the water and color on the surface. For someone new to watercolor, the results can be surprising, unpredictable, and frustrating.

There are two watercolor papers that will work with, rather than against you when learning watercolor. These are Arches or Cheap Joe’s Kilimanjaro 140lb Cold Press paper. Both of these brands have excellent working characteristics and are not only great to start on, are great for those accomplished works you will create as you progress! They are both moderately absorbent – an important factor in wash and fluid control – and will stand up to a good bit of work and re-work. The best way to minimize the cost is to buy paper by the full sheet (22” x 30”) and cut or tear them to a workable size – 11” x 15” (quarter sheet) or smaller.

**Mounting Board**

Watercolor paper needs to be supported while painting. There are a number of different options for supporting the paper. A product known as “Gatorboard” is popular these days because it is both light and sturdy.

There are a number of other choices including, tempered masonite, plywood or luan. These boards need to be sealed with several coats of varnish before using them as paper supports, or else they will absorb water and warp.

Sheets of clear plexiglass work well for support but are a bit on the heavy side and will not accept staples when stretching paper.

While painting, the paper needs to be held securely on the board. If you plan ahead, you can stretch the paper and then attach it to the support with tape or staples. The simplest and quickest way is to simply clamp the paper to the support board with “bulldog” clips.

“Paper is the one area to NOT try and save money!”
Other Related Materials

Besides paint, palette, paper and brushes, there are a number of other supplies that are handy — some are even necessary - when painting in watercolor. These supplies and materials are listed below.

A pencil sketch book – 11 x 14 or smaller; couple 2B drawing pencils; and two erasers – one “kneaded” eraser (soft and pliable gray in color) and one “plastic” eraser (white in color). These are used preliminary drawings and studies and compositional thumbnail sketches.

You’ll also use the pencils to draw your composition on the watercolor paper.

[Image: A pencil sketch book, two 2B drawing pencils, one plastic and one kneaded eraser.]

You’ll also need some rags for blotting and cleanup. Paper towels are popular and absorbent but old T-shirts, sheets or bath towels cut into rectangles is the more environmental friendly way to go! I recommend using two water containers – one for clean water and one for dirty rinse water. Again, you can purchase water containers, but it’s easier on the environment if you re-purpose used plastic containers.

[Image: A 9”x 12” sketchbook, two 2B drawing pencils, one plastic and one kneaded eraser.]
SETTING UP THE PALETTE

The main idea is to set up the palette in somewhat of a color wheel arrangement. That is, to arrange the palette so that it flows like a rainbow from red to yellow to blue. Within in that arrangement, the colors will also be arranged so that colors that relate to, or lean toward, its neighboring color are placed near them – creating a palette arranged by both color and color temperature. The diagram below shows the way to place color in your palette.

The example below includes the colors from the tables on page 4. This basic set of eight colors will serve even the most experienced watercolor painter well, and will certainly work for those with less experience.
To be sure, you don’t want to drink your painting water! But, you do want to have “water, water everywhere”!

It is common among watercolor painters to use too little water in their washes. Even experienced painters will often fall into this trap. The main reason is that they fear losing control of the medium and ending up with a watery, unrecognizable mess.

I’m here to tell you that you are more likely to end up with an unrecognizable mess by using too little water!

Why?

Unlike gouache, another type of opaque watercolor,

There are only three basic washes available to the watercolor painter. Each requires different technique, but the key success for all of them is to use plenty of water and plenty of color in the mix.

When painting in watercolor, it is good practice to paint with your paper at a slight tilt - 15 to 20 degrees. If you do, and your washes have enough water, you should see a bead of “extra” water form at the bottom of the wash. Don’t forget to pick up this bead with the tip of a “dry” brush, or else you WILL get a bloom!
**Flat Wash**

This wash is a simple field of color which does not vary in color or value (degree of lightness or darkness). It is an easy wash to create simply by placing a large puddle of color on your palette, mixing it well so that the pigment disperses evenly, and then brushing color from the puddle onto the paper.

**Graded Wash**

This wash is one which changes, or gradates, from one edge or corner to its opposite. The change can be in value, color, intensity, temperature or a combination of two or more of these. The wash to the right gradates from darker and more intense at the top to lighter and less intense at the bottom. It was painted by laying in the darker stroke at the top, adding water to the palette puddle, placing the next stroke and so on.

When used in a painting, graded washes add subtle visual cues that promote a look of “realism” to the viewer.
**Variegated Wash**

The variegated wash is the easiest and most fun to create. The reason that it is the easiest is that it can and will come out somewhat randomly. Creating a variegated wash is a matter of placing touches of pigment with various amounts of water, to an overall clear or light wash. As long as there is enough water in the passage, the varying proportion of pigment and water will mix and combine on the paper creating a wash with a variety value, color, intensity, temperature or a combination.

**Four Ways to Apply Paint**

There are four ways to apply paint to paper. Each one creates a different effect and has a different application in painting.

The easiest way to think about each is to first think in terms of *wet* and *dry*. When we are about to place a wash or make a mark, both the brush and the paper can be either wet or dry.

In creating the three washes shown above, we’ve applied a very wet and fluid wash onto dry paper. In other words, we used a **WET** brush and placed our wash on **DRY** paper – so we were working **WET ON DRY**.

At right is another example of the WET ON DRY paint application.

Keeping that in mind, it is easy to understand the other three possibilities:
**WET ON WET** – in this method involves applying a WET brush onto the surface of the paper which is also WET. This is a very well-known technique which is often taught as a way to loosen up one’s painting.

A wet on wet application usually results in very diffuse and undefined shapes with soft edges.

At right is an example of a WET ON WET application.

**DRY ON DRY** – this method uses a DRY brush with thick paint and applying it to DRY paper. This method is also known as “drybrush” technique. It is most effective when applied to a textured paper – either cold press or rough.

Note that the brush is not truly dry, but has had most of the water removed by blotting it with a rag or a paper towel.

Laying the brush on it’s side and dragging it across the surface of the paper will also get the best results.

**DRY ON WET** – this method uses a DRY brush on WET Paper. It is rarely offered in classes but is often used by watercolorists to get distinct, but soft-edged shapes like distant tree lines or objects as they might appear on a foggy day.

Again note that the brush is not actually dry, but has had most water removed by blotting.
CHARACTERISTICS OF COLOR

Color has three characteristics; **Hue, Value, and Chroma**. Understanding these characteristics can help in seeing and understanding the quality of light on and around your subject. More importantly, understanding these characteristics will help in composing your painting.

In order to help in understanding, each is explained more fully below.

**Hue**

Hue, quite simply, is the label we use to describe it. We might say that leaves are “green”, the sky is “blue”, a vase is “purple”, or a car is “red”. Of the three characteristics, Hue is the easiest to understand.

At right, three common watercolor pigments are represented on a five step scale. The label for each has the name given the paint by the manufacturer. In each case, the label we would give the color is in the name – yellow, red and blue.

**Chroma**

Chroma is another word for ‘Intensity’. Of the three characteristics of color, it is the most difficult to understand and apply. The visual effect of intense color also often makes it appear to be darker than it is – very confusing when trying to place darks in your painting.

Chroma is a measure of color strength or color saturation. Look again at the color scales above. Each of the three colors has been presented in five different intensities. In the left-most square, each color is presented in its most intense form, as it looks nearly undiluted straight from the tube. In each step to the right, the color has been diluted with increasing amounts of water so
that the intensity decreases. Chroma / Intensity is not an absolute scale. The intensity of a particular color can appear to change when juxtaposed with other colors. This is especially true when complementary colors are placed next to each other. Complementary colors placed next to each other seem to visually vibrate, making each seem brighter than they really are. By contrast, contrasting analogous colors by placing them near each other creates a calm visual harmony that seems to decrease the intensity of each. Complementary and Analogous colors are discussed in the next section – The Basic Color Wheel.

**Value**

Value is a measure of light and dark. With watercolor paints, individual colors are as dark as they will ever be right from the tube. The chart below shows the same five-step scale from the previous page but converted to grayscale. Notice that Cadmium Yellow Light, even at its most intense, is not very dark. By contrast, Ultramarine Blue, at its highest saturation is very dark but not actually its most intense.

It is important to note that a color cannot be made darker than it is when it comes out of the tube.

Adding water to the paint both lightens and lowers the intensity of the color – very important to remember!

**Color and Value**

It is important to note the relationship between color and value and specifically, the fact that the brightest versions...

The same colors on and five step scale converted to a black and white *value scale*. Notice the value of the color in the left-most square.
of any color will also fall in the middle range of values – or the “mid-values”.

The noted watercolor master, Frank Webb, is known to say “Color lives in the mid-values” – a simple way of saying the same thing.

Look again at the color chart on page 12 and note which of the squares of each color seems to have the most Intensity. Then look again at the value scale on page 13. Where does the brightest color fall in the range of values?

For both Cadmium Red and Cadmium Yellow, the brightest of each is found in the left-most square. These are also the darkest versions of each color although, again, neither is very dark.

For Ultramarine Blue, the brightest color seems to be the square second from the left. In this case the darkest version of the color is not the brightest but is indeed, the most intense. Also, at its darkest, it is much darker than the darkest version of either Cadmium Red or Cadmium Yellow, but it is still in the mid-value range.

Knowing these three characteristics of color is important. Of the three, value is probably the most important, since large shapes of value will be the foundational structure of your painting.

The concept of chroma, or intensity, is probably the most difficult to grasp. You can go to any gallery or exhibit and see many, many paintings with bright colors. As a statements of artistic expression, this is just fine. Yet, for representational painters, it is essential to understand that the local color of most real subjects is not high intensity. Further, the effect of light, especially direct sunlight, often has an effect on local color that runs counter to what we would expect.

I strongly encourage you to work from direct observation as much as possible. Doing so will help you get to know color, value and intensity and to become a virtuoso when it comes to color mixing.
THE COLOR WHEEL

The Basic Color Wheel
Understanding color requires that you understand color relationships. In particular, it is necessary to understand the concept of primary, secondary and tertiary colors and to be able to visualize the wide variety of color mixtures that can be created with just a small handful of “primary” colors.

There are three primary colors. They are red, yellow and blue. They are “primary” colors because they cannot be created by mixing other colors together.

There are also three secondary colors which are orange, green, and violet. Secondary colors are created by mixing two of the primaries together – red & yellow for orange; yellow & blue for green; blue & red for violet.

By definition, every other color is a tertiary.

Few True Primaries
One important thing to remember is that there are few true primary colors that can be purchased in a tube.

Nearly all are some version of a tertiary color. A tertiary, as seen on the color wheel at left, is a color that is an unequal mixture of two primaries.

The resulting color is one that would probably be described with a hyphenated name like “violet-blue”, “blue-green”, or “red-orange”.

A simple color wheel made out of just six “palette primary” colors.
Palette Primaries
Colors that appear to be red, blue or yellow but actually have some amount of another color are what I like to call *palette primaries*. Since there is some portion of another color in these pigments, they are really tertiary colors. Because of that, mixtures made with these so-called primary colors often bring surprising and unwanted results.

The color wheel in on the previous page is simply a range of colors placed around a circle in an orderly arrangement by both color and relative temperature. This color wheel was created using six common, and very compatible, palette primaries – two each of the three primary colors; red, blue and yellow. On this color wheel, the *palette primaries* are labeled with both their common trade name and with their relative color temperature. All of the un-labeled colors were created by mixing, in various proportions, the two palette primary colors that are closest to each other on the wheel. The result is range of fifteen individual, high intensity colors.

A NOTE ABOUT COLOR TEMPERATURE
The color wheels on the previous and following pages include a notation in parentheses under the name of each of the palette primary colors.

This notation refers to the color temperature – warm or cool - for each color.

Although the exact component colors for each of the palette primaries may vary, it is easiest to think of their temperature in terms of the primary colors.

For instance, think of Cool Yellow as a Yellow color that also has some Blue color in it. Warm Yellow is a yellow with some Red color in it.

The list below shows the notation and the color components of each.

Cool Yellow – Yellow with Blue
Warm Yellow – Yellow with Red
Warm Red – Red with Yellow
Cool Red – Red with Blue
Warm Blue – Blue with Red
Cool Blue – Blue with Yellow
**Complementary Colors**

For each primary color, there is a secondary color which is its “complement”. On the color wheel, complementary colors are directly opposite each other, across the middle of the wheel. When two complements are mixed, the result is a grayed version of one of the two mixed colors or neutral gray. On the wheel below, the violet secondary was created by mixing Ultramarine Blue with Alizarin Crimson. In turn, this color was mixed with both of the yellow primaries. The mixture was loosely mingled in the center of the color wheel.

Notice how the center area of the mixture is a vibrant gray color.

This effect is the same when mixing any of the primaries with its secondary complement. It is the same for the tertiary colors as well although the complement of any tertiary color is another tertiary.

A complementary color scheme is one that is based on the use of only two colors, a primary and its associated complement. The combination of two complements, while somewhat limited in color variety, does allow the artist to create paintings with a full range of intensity and, depending on the exact colors used, possibly a full range of value as well. This type of scheme will feature the maximum in color contrast. An added benefit is that complementary colors placed next to each other, tend create a visual ‘vibration’ which boosts the intensity of each color.

From a design standpoint, all the colors mixed from the complements will be related providing both unity and harmony.
**Analogous Colors**

Analogous colors are those that are similar to one another. In terms of the color wheel, analogous colors are generally thought of as being related to one particular primary color.

In this color wheel, an analogous group of colors, centered on primary red has been bracketed. The grouping includes a range of color that includes violet, red and orange.

On closer observation, it can be seen that the apparent secondary colors of violet and orange are both tertiary colors. As described above, tertiary colors can often be described with a hyphenated name. In this case the violet in our analogous group is really “red-violet” since proportionally, it contains a good deal of our cool red, Alizarin Crimson. Similarly the orange in our analogous group contains a good proportion of the warm red, Cadmium Red and visually appears to be “red-orange”.

An analogous color scheme is generally centered around a single primary color. Unlike the complementary color scheme, the analogous color scheme will likely use at least three and perhaps four individual palette primaries to create the colors that will be used in the painting. In this scheme, there is more color variety, but less color contrast than the complementary scheme.

Both value and intensity range can be very wide, depending on the colors used. Two Principles of Design, Harmony and Unity are emphasized in works based on analogous color schemes.
Primary Triads

One of the best and easiest ways to bring powerful color harmony while still having access to a full range of color is to use a Primary Triad.

A Primary Triad is any three “primary” colors. As discussed above, there are virtually no true primary colors available in tubes. Instead, there are many colors that appear to be one of the primaries—yellow, red or blue.

By simply selecting a set of primary colors—one yellow, one red and one blue—and using these as the majority of color in our paintings, we will guarantee that our painting has color harmony. This is not to say that other colors or color mixtures are not to be used, but that they will be used selectively.

The color wheel on the previous page has a triangle drawn over the color wheel. Its corners lie on three colors, Aureolin yellow, Cadmium Red Light and Thalo Blue. Each of these has the appearance of a primary color—although they are actually tertiary colors. Using these three colors together will provide color harmony and a wide range of color in our painting.

Creating simple color wheels like the ones shown on previous pages is an excellent way to get to know the colors on your palette. It is likely that you already have more than two versions of each palette primary on your own palette. Creating color wheels that consist of different combinations of your palette primaries is a very worthwhile exercise.
Expanding the Triad

Of course it’s unlikely that most of your paintings will consist of only three primary and three secondary colors. As we saw in Section III, it is possible to mix a wide range of color using just a handful of “palette primaries”. The color wheel example in that Section was mixed using six colors – one warm and one cool version of each ‘primary’. The result is an expansive and beautiful range of bright colors.

One of the main design objectives in any painting is to have it hold together well as a single statement. There are many ways to go about achieving Unity and Harmony in a painting - using a limited palette of color is one way to impart a great deal of both.

The color wheel above includes a broad range of colors. Unlike the color wheel in Section III, this wheel uses only one of each “palette primary” color. In this case the colors are Cadmium Red Deep, Cadmium Yellow Medium, and Ultramarine Blue.

This kind of exercise is valuable because it allows you to test various color combinations before committing them to a painting.

As an added bonus, it also allows you to test six different neutral colors mixed from the primary and secondary colors in your triad.
Most artists palettes include at least a few of each “palette primary” – reds, yellows and blues. Performing this exercise with various combinations of the colors on your palette will expand your color sense and help you become a color mixing virtuoso!

Take a look at these two additional primary triad color wheels.

At left is a color wheel using three different “palette primaries”.

In this case the wheel includes Permanent Alizarin Crimson, Aureolin Yellow and Cobalt Blue. All are bright (high intensity) colors that that create fairly bright secondary and tertiary colors.

When thinking about color, we usually think about those that are bright and cheery. But some subjects or scenes are best rendered in low intensity versions of the primary colors.

This primary triad is created using three low-intensity primaries: Quinacridone Burnt Scarlet, Raw Sienna and Indigo. Although the color is muted notice the strong sense of Unity and Harmony.
“Value is the quantity of light in paint marks. Approximately nine value steps can be made with paint. Though it is impossible to match the thousand steps of daylight, nine steps can suggest the effects of natural light and shade. Comparative values are the basis of painting, for without values we would have no shapes, textures, intervals or sizes. Painter Edwin Dickinson explained, “Plane relationships are more representational through comparative value than through implications of contour drawing.”

There are two different value systems. The first system is nature’s values. These are the values we see all around us. The painter needs to know and see these values objectively and must have technical skill to paint these values as seen. This presents a dilemma, however, because these values have no pictorial strategy.

The other system is compositional values. The two systems may correspond to some degree but they also differ, because while nature is not in the picture-making business, art is man-made order. Compositional values substitute what should be for what is. They are re-created to convey the painter’s concept and emotion. Those painters who have learned to sort out the two systems and use qualities from each are able to create more exciting pictures.”

Value: The Key To Light and Form

*Value* is one of the three characteristics of color and is also referred to as *tone*. As seen in the color charts on pages 12 and 13, every color has a “base” value. Some colors, especially in the blue and violet families, are very dark right out of the tube. Many others are a very light value, although most colors come out of the tube in the mid-value range.

For the watercolor painter, it is important to realize that water is our medium but is also our “white”. That is, water is required to insure proper distribution of the particles of pigment. At the same time, water is both lightening and lowering the intensity of the color.

Separate from color, *value* can be defined as *the lightness or darkness of a color, shape, or other pictorial element*.

Understanding the concept of value is important for the artist because it is the contrast of value that allows us to see light, shade, shadow and, ultimately, the representation of three dimensional form and space in a painting. Learning to see values and to understand how their relationships help us see form is essential to getting a sense of light in your paintings. It is virtually impossible to duplicate the hundreds of steps of value change that exist in natural light.

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To get a grasp on value, it is best to work with a simple grayscale. A grayscale is concerned only with different degrees of light and dark, from white through a series of increasingly dark grays to black. Conventionally, academic art training uses a nine or ten step value scale. Although nine or ten steps are far fewer than exist in nature, they are adequate to represent the visual effect of natural light.
Seeing and Simplifying Values

It can be difficult to isolate or distinguish values from each other when observing real objects. The actual number of different values in a given scene can be practically infinite, making it difficult to distinguish small and subtle value changes. In particular, the middle values, or “mid-values”, can be difficult to distinguish.

Ultimately, it is not necessary to duplicate a wide range of very closely related values in a drawing or painting. Learning to simplify observed values into a relatively narrow range will generally suffice in even the most realistic work of art.

One easy way to see a simplified value range is to squint your eyes while observing the scene. Doing so will cause the values that are observed to be both simplified and become slightly darker than. In most cases, even a brightly lit landscape will be reduced to a manageable range of 8 to 10 values.

Most classical art training has presented nine or ten step value scales as being enough range to simulate the look of natural light. An even narrower range of five steps will work in for many subjects and has the added advantage of simplifying the process of learning to see value.

At left is a very simple five-step value scale. It is easy to create with watercolor or pencil and is extremely useful when trying to identify and simplify the values in your subject. This scale was created using watercolor.

Make yourself one of these quickly and easily. On a small piece of watercolor paper, mark off 5 equal size steps with a black Sharpie marker. One of these, either on the far left or far right, should be left completely white. The other steps will get a wash of gray – the step nearest white gets a light gray; next is a “middle” gray; next a very dark gray; and finally, at the opposite end from the white step, a step that is completely black. Use a hole-punch to make a “view-port” in the center of each step.

Use the scale to judge values in your subject as well as in your finished works.
Showing Form With Limited Values

With many subjects, it is possible to simplify the value arrangement to two – white or black.

This is often called “posterizing”, because the resulting image is so simple and graphic that it is reminiscent of simple advertising posters.

At right is a simple still life arrangement done in only two values – even though the actual subject had many different values.

For simplification purposes, lighter grays and lighter middle grays all became white. Darker middle grays and dark grays became black. Notice that this simplification has resulted in a number of interesting, interlocked abstract shapes. And that these shapes, when placed together in this picture plane, give us enough symbolic information that we recognize most of the separate subjective elements.

Working With An Expanded Value Range

Using a value range limited to only black and white is useful when exploring a subject or a composition. As mentioned above, converting the wide range of actual values to just two creates a set of interlocked abstract shapes. In most cases, these interlocked shapes are enough to reveal the actual subjects.

In most subjects, the middle values – or grays – will be dominant. The same should be true in our paintings.

The dominance of mid-values means an expanded range of values – at least five and as many as ten – will be more effective for depicting realities and subtleties of most subjects.
You probably recognize the object in the painting below. Its external shape makes this spoon easily recognizable.

This subject has a recognizable shape but its three-dimensional form is revealed through the contrast of values. In this case, a limited range of three values is enough to show form.

For the representational painter, depicting objects that have the illusion of three-dimensional form is of great importance. This is where value comes in. Light, mid and dark values placed appropriately will do more than almost anything else to reveal shape, form and space.

Most of the values in this study of a spoon are in the mid-value range.

Even the dark background is in the middle value range. Do you see color in the dark background? Remember the Frank Webb quote - “Color lives in the mid-values”. If you see color, you are somewhere in the mid-value range.

With a dominance of mid-values, the relatively small shapes of white and black will do the work of revealing form by showing us light, shade and shadow.

To get a better handle on the effect of value, make sketches of individual objects, like the spoon shown above. Work with a single color or with gray only. If you use a single color, it will have to be one of the darker colors, or else it won’t be possible to get the darker values you need.

If you don’t have a tube gray on your palette – Payne’s or Davy’s Gray – you can mix a rich deep gray with Ultramarine Blue and Burnt Siena. That’s the mixture used in the study shown above.
GETTING THE BEST FROM WATERCOLOR

Watercolor is known to be a fast-working, spontaneous medium. In order to be spontaneous while painting, it is required that you take a thoughtful approach both before and during the painting process. Some thoughtful consideration of your design through both value and color sketches will help guide your painting and help you avoid disappointing results.

That said, watercolor works best when the washes are applied and left alone. Attempting to fix problems or just “fuss around” while washes are drying is usually a bad idea. Control that impulse!

Remember that for it's not called "watercolor" for nothing. Water is the medium that allows the pigment to flow and distribute itself evenly, resulting in glowing transparency and vibrant, saturated color. Even many experienced watercolorists are afraid of, and use too little water. If you use good paper, like those listed on page 6, the water and washes will stay where you put them.

When it comes to water, it is easy to use too little and hard to use too much.

On the notion of “losing control”, this is a medium that invites one to at least share control. The action of water moving around on paper and in the process, mixing and mingling different colors in unexpected ways creates those passages that attract so many people to this medium. That single property is unique to this medium – one should take full advantage of it!

If it happens that you do indeed use too much, remember that it is much easier to fix the problems created by using too much water, than it is to fix those created by using too little.

Remember also, that light is only revealed when contrasted against dark, so a broad range of value is essential when trying to show light. It is not always necessary to contrast the lightest light against the darkest dark, but doing so will draw the viewers eye and create focal point, space and distance along with the notion of light.

Finally, finish every painting you start. They may end up looking not so good. Once finished, take the time to consider what went right and what went wrong – you will learn a great deal in doing so.

Keep Painting!
Nobody tells this to people who are beginners. I wish someone had told me. All of us who do creative work, we get into it because we have good taste. But there is this gap. For the first couple years you make stuff, it's just not that good. It's trying to be good, it has potential, but it's not. But your taste, the thing that got you into the game, is still killer. And your taste is why your work disappoints you. A lot of people never get past this phase; they quit. Most people I know who do interesting, creative work went through years of this. We know our work doesn't have this special thing that we want it to have. We all go through this. And if you are just starting out or you are still in this phase, you gotta know that it's normal and the most important thing you can do is do a lot of work. Put yourself on a deadline so that every week you finish one piece. It's only by going through a volume of work that you will close that gap, and your work will be as good as your ambitions. And I took longer to figure out how to do this than anyone I've ever met. It's gonna take a while. It's normal to take awhile. You just gotta fight your way through.

Ira Glass
Tony Conner - Vermont watercolor artist

Tony Conner is an award-winning artist whose work is regularly included in regional and national juried exhibits. While primarily expressing and interpreting the landscape and seascape, his paintings reflect an interest in a variety of subjects, and exhibit a wide range of representational expression.

He is an avid and active “en plein air” painter - more than half of his paintings are done completely on location.

His work has been included in a number of national juried exhibits including the New England Watercolor Society National Biennial, Adirondacks National Exhibition of American Watercolors, and the Hudson Valley Art Association Annual National Exhibition, among others.

Tony is a Signature Member of both the New England and Vermont Watercolor Societies and an artist member of New York’s venerable Salmagundi Club.


What him to a particular scene has to do with the pattern of individual objects, contrasts of color, value, or intensity and, most of all, the quality of light at a particular moment. He is particularly in tune with time as it passes through the cycle of seasons and how a particular moment in time is reflected in the character of the landscape. Times of transition - especially those transitions from season to season – are especially captivating, since the landscape reflects change with subtle contrasts.

The main objective of much of Tony’s work is to freeze moments of transition, revealing the evocative character of common subjects. Watercolor is his medium of choice because it is truly the medium of light.

A native of Virginia, Tony currently works from his studio in Bennington, Vermont.

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