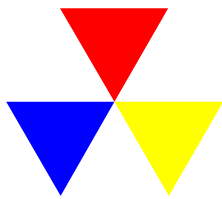


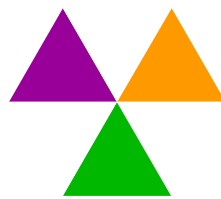
Colour Theory – or, why not all greens work together!

Think back to kindergarten... we all had a box of crayons – many of us had 8 colours which included:

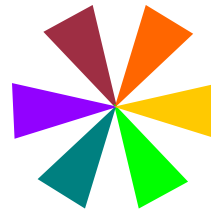
- Red
- blue
- yellow
- purple
- green
- orange
- black



Primary colours



Secondary colours



Tertiary colours



12 step colour wheel

This colour wheel is based on Louis Prang’s perception of how colours combine in a 12 step system (1876). Prang based it on Sir Isaac Newton’s discovery of the spectrum of colours that break down through a prism (1660). While this is the colour wheel that many of us are familiar with, there are many other colour wheels and colour theories. In fact, this colour wheel is not even the most widely used; it is simply the one we are most familiar with.

While the 12 step colour wheel illustrates the theory, in practice we can keep mixing and combining dyes to infinity. A little more of one, a little less of another and you can easily do a hundred colour steps between yellow and blue... leaving us with 100 variations of yellow-greens, greens, and blue-greens. If they are all created with the same primary colours, this green example will all be “analogous”... or colors that are beside each other on the colour wheel. Mikey Lawler, in her book “Sky Dyes”, notes that we all knew by kindergarten that we would rather have the box of 64 crayons than the box of 8!

These colours mixed from the primaries are all pure hues. Take any of the pure hues and add

- White - you get pastels or tints
- Black - you get shades
- Grey - you get tones

If you add white, black or grey to any of the hues in the above green example, they should still all match and be analogous.

So why do some greens scream “wrong, wrong, wrong” when we try to put them together?

The colour wheel that is referred to as the “Printer’s Primaries” and also used widely in the fabric dyeing industry is based on Herbert Ives Colour Wheel. There are three primary colours in this theory as well but they are turquoise, magenta and yellow. Anyone with a colour printer probably uses ink or toner labeled cyan, magenta and yellow.... Based on the Ives colour wheel. In the world of fabric dyes, fuchsia, turquoise and yellow are the available primaries.

When fabric is dyed with a mixture of hues from different primary colours, they may blend well with each other... but then again, they may scream at each other. These two colour wheels illustrate some basic differences. You can see that the greens are quite different. The greens are just an example, purples and oranges differ widely as well. It also explains why not all reds go together. What we perceive as a “true red” is probably a mixture of fuchsia with a touch of yellow and is actually a “red-orange”.

The pure hue is the second row from the outside.



Prang Colour Wheel



Ives Colour Wheel

Sometimes it's difficult to differentiate between the primaries. If you are trying to build a stash of fabrics to create a specific quilt you probably start with a theme fabric, or core fabric and then pull in a variety of colours that blend. [Or, on the other hand, you may be trying to make a statement or appeal to an emotion and you want them to shout to each other...]

There are a few easy ways to help find your colours, and some ways that are not so easy:

- If there is a "Colour Legend" on the selvage that indicates the colours in your theme fabric, those can be your guide to pull in other matching colours.
- There may be a line of fabrics designed to match each other.
- Take swatches with you. Carry them in your purse at all times!
- Squint a lot. Try to imagine if a green began with royal blue, or turquoise then look for other greens that appear to have been mixed with the same primaries – this method takes a bit of training your eye but once you know what you are looking for, it is easier to find it. Squint and see if you can see turquoise or royal blue in the green.
- If you turn binoculars backwards, or use a reducing glass or camera viewfinder you can often distance yourself from the colours and you get an impression.

Value is the term that describes the steps from light through medium to dark. If the greens (for example) are the same but you add a little black to one, it becomes a shade... or darker value. If the greens are the same but one has a little white added to it, it becomes a tint, or a lighter value. You can add a little black or a lot of black, and a little white or a lot of white, but if you start with the same green, they will all be monochromatic... different values of the same green.

Intensity is the term that describes the steps from dull to bright... When grey is added to a pure hue, it becomes a tone – it "dulls" the colour and makes it less intense. Pastels or tints are more intense than tones because tints have white added and tones have grey added. They still match, and in one colourline, they are still monochromatic, one is just more intense than another.

As mentioned earlier, there are many colour theories. Albert Munsell, (1905) made a five color system with no triad. The principle colors he used were: red, yellow, green, blue, and purple. The Munsell System is used by the U.S. Bureau of Standards. I first learned about the Munsell colour theory when taking an oil painting class.

Colour is also just a perception or concept. It is not a science. There is no one true orange, or green, or any other colour. There are different theories, different colour wheels, and we all see things differently.

To further confuse the issue, the background or surrounding colours can "change" your perception of a colour. If you place the same colour of pink fabric on a piece of white fabric, it will look darker than the same piece of pink fabric on a black piece of fabric. Lighting can change the colour as well.

Warm colours tend to advance while cool colours tend to recede.

No wonder not all greens match – different primaries, different backgrounds, different eyes that view them! While I have used the example of green, this applies to all colour mixes.)

As a hand-dyer, I prefer to mix my own colours. If you order purple dye from a supplier, you have no idea if it is mixed with royal blue and red or fuchsia and turquoise. You have to wait till you have it dyed, rinsed, washed and dried to see the actual colour. When you can't control your colours, you really have to depend on your eyes and your senses.

Harmony Hand Dyes

Kathy Tanner
www.harmonyhanddyes.com
Box 277, Tisdale, SK S0E 1T0