

1. What is the Munsell color theory?

Briefly, the Munsell system (*Figure 1*) begins with five principle hues (**R**ed, **Y**ellow, **G**reen, **B**lue, and **P**urple) and five intermediate hues (**YR**, **GY**, **BG**, **PB**, **RP**). Each color family is divided into ten segments and numbered accordingly so that 5R would represent the purest red. As numbers get higher or lower, they become closer to the next color family. For instance, 1R would be close to red-purple and 10R would be close to yellow-red.

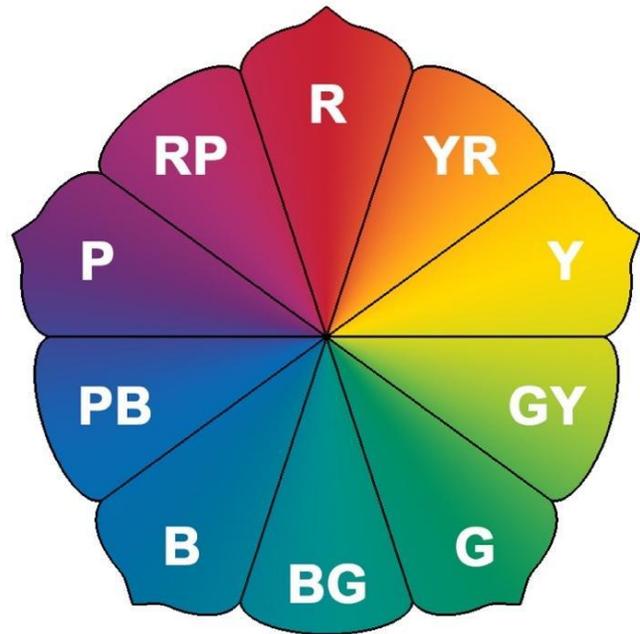


Figure 1

Then the Munsell Color System expands upon the typical color wheel by recognizing that each color has three attributes:

- **Hue** – the basic color family such as red or blue
- **Value** – the lightness or darkness of the color
- **Chroma** – the saturation of the color (pure vs muted, vivid vs weak)

When you take these three properties into account and create a graphic representation (*Figure 2*), you end up with a roughly spherical shape. Imagine the pure colors along the equator. The color steps get lighter as they move to pure white at the top and darker as they move to pure black at the bottom.

At the same time, as colors move closer to the center axis, they become more muted or grayed.

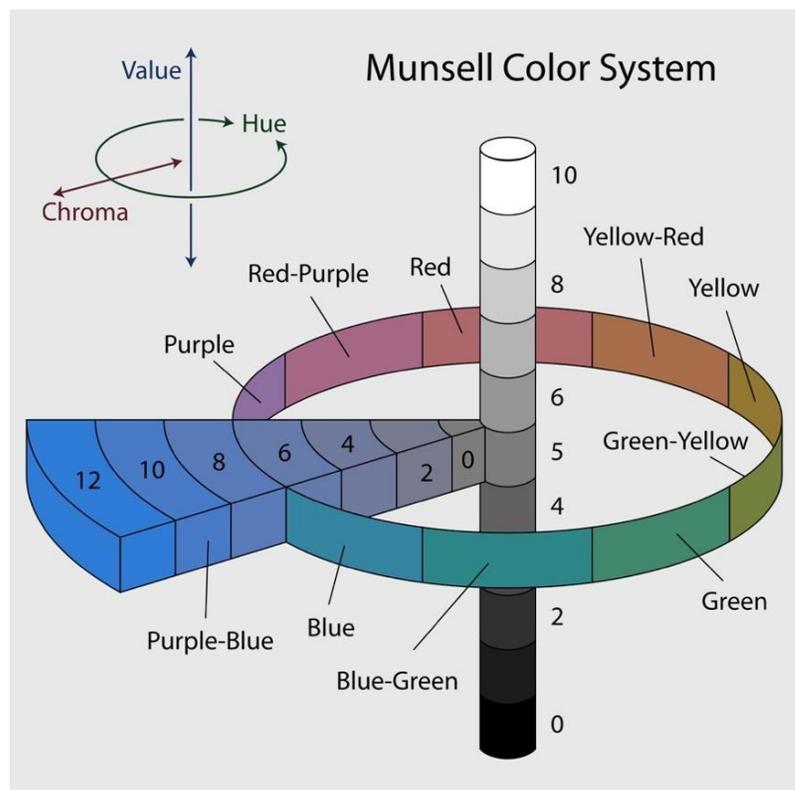


Figure 2

If you imagine a slice being cut out of the Munsell color sphere, each division has its own chart (*Figure 3*) which shows a number of variations depicting changes in value and chroma.

2. How does it apply to work with fabric rather than paint?

The Munsell color system is based on human perception, not on paint mixing. Unless a quilter is dyeing her own fabric, she must rely on her own visual perception when creating her quilt. Our viewers also rely on their visual perception when viewing our work, so it seems logical to consider a color system that is built upon human perception.

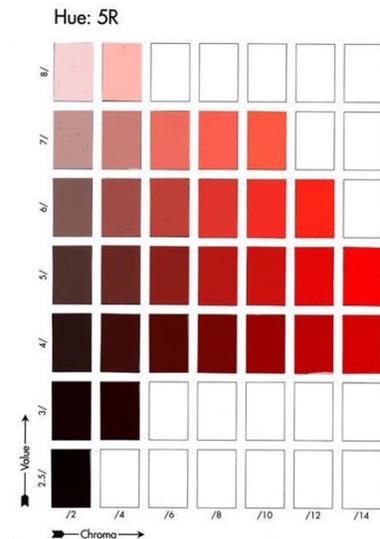


Figure 3

One example of this human perception-based system is that complementary or "opposite" hues are based on the color of afterimages. For instance, if you stare at pure red for a length of time and then look at a white surface, the afterimage color that you see is blue-green, which is the opposite hue in the Munsell system. Also, if opposite hues are painted on two halves of a disk, when it is spun, the resulting color blend is seen as a neutral gray.

4. Why do you feel that value is important to quilt design?

The *New Munsell Student Color Set* says, "Of the three color dimensions, value is the most important in understanding what we see. This is because visual perception is most sensitive to changes in lightness and darkness, and initially interprets any scene by reading the value changes."

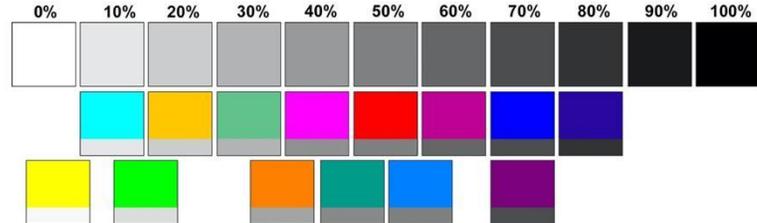


Figure 4

It also says, "Hue is considered the emotional dimension; value, the dimension that helps us understand what we see; and chroma, the attracting dimension." I think we tend to forget that even pure colors have differing values. (*Figure 4*)

In essence, value is what makes a design readable. I've often heard it said, "Value does all the work but color gets all the glory." I had a friend who made a traditional quilt with blues, pinks, and greens. Individually, the colors looked great and were easily distinguishable from each other. Unfortunately, she chose all of the same values so that once her quilt was made, you could hardly see the log cabin block pattern that she used. This really helped drive home the point to me that value does the work. Without choosing a wide range of values, you just end up with mush.

One idea I find interesting is that if you can create a successful design in just black, white, and gray, then you should be able to replace them with a color of similar value and have an equally successful design. I took a Nancy Crow workshop called "Lines, Curves and Figure Ground" which did something similar, only we initially used just black and white, and we added other elements to our final version. (Figure 5)



3. How does it help you in designing your quilts?

Studying the Munsell Color theory has helped me consider more aspects of a color, not just the hue. I became interested in challenging myself to use a wider range of values, as well as colors and color schemes that I typically did not use. I also wanted to learn to make better color choices and hopefully avoid common mistakes. I was especially interested in how colors affect each other. I decided to take specific principles that were discussed in *The New Munsell Student Color Set* or in *Color Studies* and use them as the basis for my color choices in a series of improvisational quilts which I call "Push-Ups." My goal was to build and strengthen artistic muscles, so to speak. I was not trying to create a masterpiece, but to simply explore ideas.



Figure 5

For my first experiment, *Push-Up #1: Missed Connections*, I used black, white, and seven shades of gray. I played with gradation of values while also varying the weight of line. I was interested in seeing how the weight of line affected the figure-ground relationship.



Push-Up #2: Growth expanded on my interest in value progressions. This time I specifically wanted to explore how different background values affected the changing values of the figure (shapes). In this piece, the shapes vary along a gradation in value within each column and the background varies from white to black. I was particularly interested in seeing the places where the figure and background visually merged when the values were similar.



In *Push-Up #3: Requisite Red*, I explored the idea of disappearing boundaries and dissolving boundaries using simple log cabin blocks which were then placed on backgrounds which changed from black to white.



Push-Up #4: Reaching was a simple exploration of Munsell opposite hues using several shades of purple and green-yellow along with neutral gray.



Push-Up #5: Perseverance was a further exploration of opposite colors red-purple and green of different intensities, but this time I also wanted to play with the idea of using polka dot fabrics in unusual ways.



With *Push-Up #6: Teal Trials*, I went back to a monochromatic scheme based on two interesting polka dot fabrics. I wanted to see how many ways I could break up those polka dots so they would look nothing like the original fabric. I also focused on using a variety of values and intensities of teal.



In *Push-Up #7: Trio*, I decided to work with warm analogous colors in a variety of values and intensities.



For *Push-Up #8: ADD*, I began with a print of mid-tone values on black. To stretch myself further, I decided to make the quilt warmer by adding several values of yellow – my least favorite color.



Push-Up #9: Dancing Glow Sticks is another value study. I was interested in seeing how colors change based on what color they are placed next to. While the stripes of color in each row follow a gradation from very light to very dark, the background is made up a very narrow range of dark navy blues.



5. What books do you recommend to learn more?

Most books on the Munsell Color System are very expensive. You can try to get them from libraries, especially if you can get interlibrary loans from universities. Or you might be able to get used or older editions from Amazon. These are resources I used:

- *The New Munsell Student Color Set Third Edition* by James Thomas Long, ISBN 978-1-60901-156-7 (the Fourth Edition is not recommended)
- *Color Studies Second Edition* by Edith Anderson Feisner, ISBN 1-56367-394-0
- Munsell Color website, <https://munsell.com>
- ApplePainter.com – "A practical description [of the Munsell Color System] with suggestions for its use."

There are also some interesting apps that enhance your understanding of value. Search for them in the App Store or the Play Store.

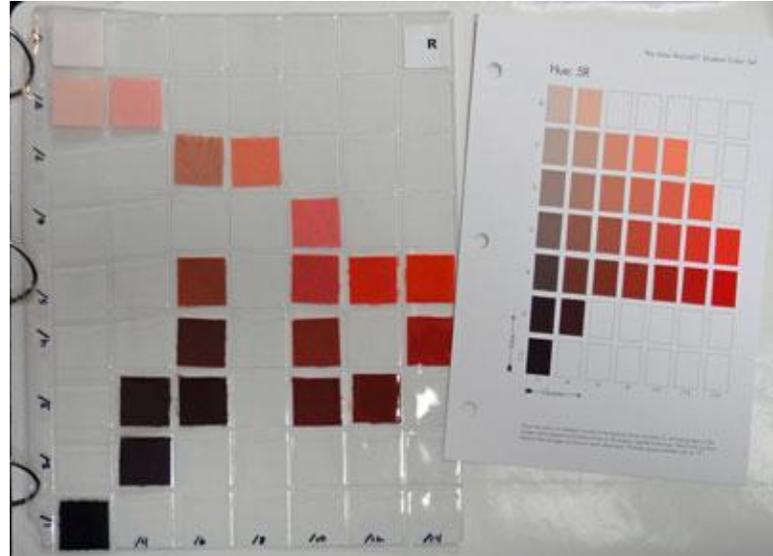
- Blendoku 2 – an educational game that increases your sensitivity to value and intensity by arranging cubes of color in progressions
- Chroma Rush – an educational game of match and sort color samples within increasingly difficult scenarios
- Color Practice – an educational game rearranging color swatches based on value and chroma
- FM100 Hue Test – test your color vision by rearranging colors into hue order
- Munsell Viewer – allows you to see a chart of the hue, value, and chroma ranges for each color family and also converts it to RGB values

6. What exercises do you recommend to learn more?

I learned a lot about distinguishing value by using a *Gray Scale & Value Finder* tool (Figure 6) to sort my collection of Kona cotton (Figure 7) by value instead of by hue. Everyone should try with at least some of their stash. (<https://mariaelkins.com/2013/06/tutorial-gray-scale-tool/>)



If you can, buy or borrow *The New Munsell Student Color Set* (either edition 2 or 3; apparently there is a problem with edition 4). In it there are charts for each of the principle and intermediate hues along with colored paper chips. As part of my quest to understand color better, I first sorted the paper chips that come with the book and put them on the chart in the proper sequence. I then cut out 1" squares of Kona cottons and tried to arrange them



similarly, trying to pay close attention to their value and chroma. I suggest quilters to pull out 15 or 20 fabrics of a single color and arrange them from light to dark. Then try to arrange them by intensity. (Figure 8)

For someone wanting to try out multiple color schemes, I recommend making small, 24" fused "color sketches." They can be made very quickly, sometimes in just a day, and they don't use much fabric. Start by picking out color ideas that are interesting to you based on something you see or read. It's a great way to test ideas out on a small scale before committing to something larger.

7. Photos from your Blog: The photos of how your fabrics were sorted by color wheel order and then by value are particularly powerful.

