



Quilting Unit Study for Homeschool Families

By Maria Peagler

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This unit study is meant to accompany *Color Mastery: 10 Principles for Creating Stunning Quilts*, published by Willow Ridge Press, ISBN 978-0-9816277-0-0, available at your local quilt shop, Amazon or Atlasbooks.com.

I teach quilting classes for homeschool students and give lectures to homeschool groups about being an author. Please contact me at maria@colormastery.com for additional information on visiting your homeschool group.

I encourage you to review this unit study and select what makes sense for your family. I've included additional activities for toddlers who are too young to quilt but will delight in working with colors and shapes. Some of the books I reference are out of print, but are available at your local library or online retailers.

Where to buy supplies? I highly recommend you visit your local quilt shop or sewing store and ask them for their help in buying the supplies recommended in this unit study. They will take the time to get to know you and your children, they offer classes, and are far more helpful than the staff you will find in large chain stores. While their prices might be more expensive, you receive higher quality fabrics and excellent customer service. Buying cheap fabric from a big-box store is no bargain.

Quilting Basics – Terms You Need to Know

A quilt is made of three layers: a top, a middle made of batting, and a backing. All three layers have their raw edges encased in a binding, usually made of fabric cut on the bias (diagonal grain of the fabric).

The top of the quilt can be pieced or whole cloth. A whole cloth is one piece of fabric, while a pieced top is cut apart and sewn together in a decorative arrangement.

Piecing – sewing together pieces of cloth to make a quilt design. All piecing is done with a $\frac{1}{4}$ " seam, which is important for all your seams to match and your quilt to lie flat. Piecing a consistent $\frac{1}{4}$ " seam takes practice and years for most quilters to develop. You can piece by hand or use a sewing machine.



Appliqué – sewing one piece of cloth on top of a background. Appliqué is often done in the shapes of flowers, baskets, animals, vehicles, or any other shape you can cut from fabric. You can also appliqué by hand or use a sewing machine. It is not uncommon for a quilt to have a combination of hand and machine work together.

Batting – the middle layer of the quilt that provides the cushion and softness. Batting comes from cotton, wool, polyester, and now even bamboo. I recommend a low-loft cotton batting, which is thin enough to hand quilt through and also goes through a sewing machine smoothly.

Backing – the fabric that serves as the back of the quilt. Smaller quilts usually have one large piece of fabric as the backing, while larger quilts will require that you piece the backing from multiple cuts of fabric.

Binding – the fabric that encloses the raw edge of all three layers of the quilt. Bindings last longer if you make them from a bias cut of the fabric, which is more durable than fabric cut from the length or width of the fabric. Making a durable and beautiful binding is an art that again takes quilters years to accomplish. Some quilts, especially those made by younger children, can omit a binding by using the envelope method of sewing all three layers together, wrong sides together, leaving an opening, turning the layers right side out, and sewing the opening shut.

Sashing – strips of fabric that surround a quilt block for a decorative accent to the design. Bunkhouse Scraps uses sashing.

Block – one unit of the quilt design, either pieced or appliqué. Most quilts are made of multiple blocks, arranged in rows and columns.

Borders – Strips of fabric that frame all four sides of the quilt top.

Fat Quarters – a quarter-yard cut of fabric that is cut wider than a standard quarter-yard cut. Fat quarters measure 18x21”, whereas a straight quarter-yard cut measures 9x42”. A fat quarter is a more usable piece of fabric because it’s wider and you can cut a variety of larger strips and appliqué shapes from it. Quilt shops offer fat quarters alone, in kits, and in bundles. They are a great way of collecting a variety of small yardages of fabrics. Renaissance uses six fat quarters in the quilt.

Basting — loosely attaching all three layers together to prepare for quilting. If you are hand quilting, you baste with needle and thread by making large, diagonal stitches across the quilt. If you are machine quilting, you baste with small safety pins that hold all three layers together. Basting allows all the quilt layers to stay together uniformly as you quilt.

Quilting – sewing all three layers of the quilt together. You can use decorate quilting designs, such as feathers, clamshells, cross-hatched lines, or many others. You can also use a simple utility stitch, such as straight lines spaced 2” apart as your quilting design.



You can quilt either by hand or by machine. Machine quilting requires you have a walking foot for your sewing machine, which guides all three layers of fabric evenly.

Tying – a simpler alternative to quilting that I recommend for young children. Tying secures all three layers of the quilt by taking a single stitch through all three layers and tying a square knot on top, leaving the ends showing. This is great practice in knot tying for Cub Scouts and Brownies. Tied quilts don't require basting, and can omit a binding by using the envelope method.

Finished Width – the measurement of a quilt block after seam allowances have been sewn into the top. The finished width of a quilt block is usually $\frac{1}{2}$ " smaller, accounting for the $\frac{1}{4}$ " seam allowances on both sides.

Unfinished Width – the cut measurement of a quilt block, including its $\frac{1}{4}$ " seam allowances. The unfinished width will usually be $\frac{1}{2}$ " larger than its finished width size, to account for both seam allowances.

Reference Charts

Color Mastery offers many charts that pull concepts together into one place and some you'll use in exercises. The charts are:

- **Color Wheel** – large and labeled on both inside covers. If you would like extra covers for use or display in your homeschool area, I have them available for \$5.00 each. I can autograph them to your students.
- **Ten Principles of Color Mastery** — p. 3
- **Top Ten Stash-Building Tips** — p.19
- **Creating a Color Wheel from Your Own Fabric Stash** — p. 22
- **Making Color Harmonies from Your Fabric Stash** — p. 29
- **Creating a Value Wheel from Your Own Fabric Stash** — p. 33
- **Creating an Intensity Wheel from Your Own Fabric Stash** — p. 39
- **Creating the Five Types of Contrast** — p. 45
- **Top Ten Color Mastery Tips** — p. 47
- **Creating Your Own Custom Color Harmony** — p. 80
- **Color Harmony Chart** — p. 89
- **Color Harmony by Contrast Chart** — p. 90

Introduction — Chapter One

The ten principles of *Color Mastery* are a road map for any fiber artist to use when developing color palettes for their art. All the lessons in the book stem from these ten basic principles.

Read through the book to plan your lessons, deciding on which exercises and projects hold the most potential for your children. *Color Mastery* is a deep look at color in fiber arts, and could easily be a year-long study, especially if you extend the lessons to other art media like watercolor, colored pencils, and acrylic. You probably have many of these art supplies on hand already.



You can also use the lessons in *Color Mastery* for other types of fiber projects, including knitting, crochet, embroidery, rug hooking, sewing clothes, collage, and even scrapbooking. The color principles work well with any technique in which you are using multiple colors of fiber and combining them into a color palette. Those fibers could be yarn, wool, embroidery floss, cotton fabric, or paper.

Quilting has evolved from a simple art form using only needle, thread, and scissors, to a billion dollar industry offering hundreds of tools and notions. You make the decision how simple or sophisticated you would like your quilting process to be. An interesting exercise would be to make the Doll Quilt on p. 58 twice: once by hand, and again by machine, using a different color palette each time. Some tools I do recommend if you plan to machine piece are a rotary cutter, cutting mat, and quilting ruler. These three tools make quick work of cutting a lot of fabric pieces and are far more accurate than cutting by hand with scissors.

Color harmonies play an integral role in the *Color Mastery* process, and simply defined are a no-fail prescription for colors that work well together, based on their positions on the color wheel. Each color harmony has a different level of contrast, from low to high. While each color harmony has a suggested number of colors, feel free to add other colors in smaller amounts.

The color journal is an integral part of the *Color Mastery* process, and I urge you not to skip it. It encourages discovery and exploration in your children using materials you have already in your home.

Two of the *Color Mastery* projects, Italian Ice, and Bunkhouse Scraps, recycle leftover fabrics from previous projects and give them an entirely new look. These are both great examples of how to save money, extend resources, and transform scraps others might toss into the trash into a work of art.

Keeping a Color Journal — Chapter Two

- Keeping a color journal is an excellent exercise for students of all ages, even toddlers. Have your children decorate the covers and personalize them and they're far more likely to want to use them. Toddlers can use composition books, while older children can use spiral-bound journals. All of the exercises in *Color Mastery* are meant to be done in your journal.
- The *Color Mastery Quilt Journal Kit* is a CD with printable journal pages and charts from the book. The CD includes two types of journal pages: ¼" graph paper with the six color harmonies listed, or ungridded (blank) pages, also with color harmonies (so you don't have to memorize them). Also included are many of the charts in *Color Mastery* that you can print and insert into your own journal. The CD offers homeschooling families an unlimited supply of journal pages at an affordable price.
- Great blog post about graphic design journals using composition notebooks here:



<http://www.designobserver.com/archives/entry.html?id=38831>

- Extend the lesson on journal keeping with *Wild Days*, by Karen Skidmore Rackliffe, a book about nature journals written by homeschooling mother.

Three Elements of Every Color — Chapter Three

- The call-out box on p. 15 contains *the* most important lesson in the entire book. Everything else you do revolves around it. You can discuss it now using the color wheel charts on the inside front covers, or when you create your own color wheel chart in the next chapter.
- Three Elements of Color chart p.17 provides a visible collection of all three color elements displayed in color wheels and the role they play in a color palette. Look at fabric in your own home, in clothing, upholstery, textiles, and quilts to discern the colors they use and the elements of each.
- Top Ten Stash-Building Tips on p. 19 is important to stretch your fabric budget if you plan to be a quilter long-term.
- If you would like additional information on color, especially for painting, I recommend *Color* by Betty Edwards, the same author who wrote *Drawing on the Right Side of the Brain*.

Mastering Hue — Chapter Four

- Make a color wheel on p.23. You have permission to copy this page as many times as you need to for your children, or print multiple copies from the *Color Mastery Quilt Journal Kit CD*. Complete the chart using fabric swatches, paint color chips, scrapbook papers, or magazine clippings. Cut out colored squares and triangles from felt for little fingers to use on a felt board.
- How neutrals work in a color palette is important because neutrals don't appear on the color wheel. In your color journal, create color palettes using both colored and neutral fabrics and notice what effect neutrals have.
- Quick overview of color harmonies and their effects in a quilt is on pages 26-28. Excellent explanations of color harmonies and how to apply them.
- Select one fabric and see how different it looks in six different color harmonies using the Color Harmony Chart, p.29. You will want to do this exercise multiple times, with a different starting color each time. This chart, available only in *Color Mastery*, is a groundbreaking way of "seeing" color harmonies quickly, without having to make a quilt. Great for a quick visual lesson on how color harmonies work. Another copy of this chart is in the Appendix. You do not have permission to copy these charts, but they are available on the *Color Mastery Quilt Journal Kit CD*.



Artist's Secrets — All Chapters

Color Mastery offers six artist's secrets you can be apply to any media. Here are lessons from several of those secrets:

- Eric Carle's artist secret about using yellow is apparent in any of his books, especially *Rooster's Off to See the World*.
- Secret about availability of light value fabrics is a great lesson on worldwide commerce.
- Three bears rule of color is a good rule of thumb for how much of each color to use, and works in any art project, fiber-based or otherwise.
- Impressionistic use of neutrals demonstrates how impressionist painters like Claude Monet used more colorful substitutes in their paintings. Look at Monet's *Haystacks* and *Waterlilies* for examples.

Mastering Value — Chapter Five

- Make a value wheel on p.35. If you don't have enough values of one color, use magazines, paint color chips, or scrapbook papers. Cut out as many pages of the same color as you can find to do this exercise.
- Notice the same relationships on the wheel apply to value as they did for hue: values close together are similar, while values far apart contrast. One pair of complementary values is an exception: which are they and why?
- Create your own paper art quilt using the design on p. 32,. Draw a flower, and use different values of same color to define the petals.

Mastering Intensity — Chapter Six

- Make an intensity wheel on page xx. This will be the most difficult of all three color wheels, as few people have seven different intensities of one color fabric. Use any media you can for this chart: fabric, magazine clippings, photographs - get creative!
- Do the fabric swatch exercise in which you identify the three elements of color in each. This is a great exercise to discipline your artistic eye, much like piano scales are to a musician.

Harmony & Contrast — Chapter Seven

These two effects are how you judge how successful your color palette is. Basically, does it work? They also apply to many art forms, including music, sculpture, and literature.



- Develop your own color palettes from inspiration photos in your journal, great works of art, or catalogs. See if you can identify which color harmony the palette fits. Not all color palettes follow a color harmony, but most can be found with their foundations in one.
- Do exercise on p. 42 to practice judging harmony and contrast in magazine clippings and your own photos. Great color journal exercise.
- Harmony chart on p.44 lists harmonies in order by contrast. In your color journal, start with the same fabric and create six color harmonies with it, and notice the differing contrast in each (same exercise as in Mastering Hue chapter). Which of the three color elements contributed to the contrast the most?
- Pull all the elements together and judge their contrast by the exercise on p. 46. This will take some time to do but will really flex your children's artistic muscles. Great to include in a color journal.
- Top Ten Color Mastery Tips tell you *how* to apply the principles in your quilts. Now that you know what to do, here is how to do it successfully.

Basic Color Harmony Projects — Chapter Eight

- **Renaissance** quilt is a great color harmony project, as it uses: Fibonacci proportions for the strip sizes (finished widths) and block size, an analogous color harmony, and uses the three bears of color. Books to extend the lessons on Fibonacci numbers are *G is for Googol* by David Schwartz, *Math and the Mona Lisa* by Bulent Atalay, and Piet Mondrian paintings.
- **Doll Quilt** is excellent beginner project. You can do easily by hand or machine. History lesson: most girls learned sewing skills before reading and writing skills in pioneer days. Scrap quilts also have great historical significance as early settlers had to make everything last. How does that compare to our resourcefulness today? Were the pioneers the early "green" culture, recycling? Books to extend the lessons are the *Josefina Story Quilt* by Eleanor Coerr and Bruce Degen and *Eight Hands Round: A Patchwork Alphabet* by Ann Whitford Paul and Jeanette Winter.
- **Provence Quilt** has great historical context, with classic quilt blocks: Flying Geese and Four Patch. Any Barbara Brackman book is excellent for history of blocks and quilting. Make sample blocks from her book using Cuisenaire rods, paper, or felt. Experiment with other complementary color palettes in your color journal. Which do you like the best and why? Notice the difference in this quilt design and the one in **Renaissance**. Why is **Provence** better suited for a complementary color palette? Design your own quilt by deciding if you want a design with great or subtle contrast, what color harmony is best for it, and why. Do math lessons by addition, subtraction and multiplication of the four-patch blocks and 16-patch center. Great for common denominator exercise. Which



factors go into 16? Can you make a quilt design of squares from each factor?

- **Chocolate-Covered Cherries Quilt.** While this quilt uses new fabrics, the brown fabrics are called reproduction fabrics as they emulate vintage fabrics available decades earlier. A good book for lessons on reproduction fabrics is *Dating Fabrics: A Color Guide 1800-1960* by Eileen Trestain. This quilt is also an example of using neutrals in a color palette.

Teaching Fractions Through Quilting

Quilting is an excellent way to teach fractions and show their application in a real-world project. Most quilt blocks have an unfinished width that includes a fraction (8-1/2" for **Renaissance** blocks). Adding the block widths together is great practice for addition skills. However, quilting has an added mathematical exercise that you need to include, to account for the loss of the seam allowance when piecing. An example:

Renaissance has a block layout of 4 horizontal blocks by 5 vertical blocks (4x5). To calculate the quilt's measurements is a three-step process:

1. Multiply the number of blocks times their unfinished width (8-1/2"):

Horizontal	Vertical
$4 \times 8\text{-}1/2 =$ 34"	$5 \times 8\text{-}1/2 =$ 42-1/2"

2. Multiply the seam allowance of 1/4" by the number of seam allowances required to make the row or column. Each block has 2 seam allowances, so:

Horizontal	Vertical
$4(2) \times 1/4 =$ 2"	$5(2) \times 1/4 =$ 2-1/2"

3. Subtract the seam allowance sums in step 2 from the unfinished measurements of the rows and columns in step 3:

Horizontal	Vertical
$34 - 2 =$ 32"	$42\text{-}1/2 - 2\text{-}1/2 =$ 40"

The finished measurement of the Renaissance quilt is 32" wide by 40" long.

You can also calculate the measurement by multiplying blocks by their finished width measurements (whole numbers), which excludes the fractions. Gauge the readiness of your children for which mathematical lesson is appropriate.



Advanced Color Harmony Projects

- **Italian Ice Quilt** disguises leftovers from the **Renaissance** project by using a different color harmony. Do artists ever take their leftovers and create something entirely new from them? What other aspects of home and business could you use this concept? Why is orange such a difficult color to use for so many people?
- **Funky Floral Handbag Bouquet Quilt** uses appliqué and piecing. Why does an advanced color harmony work better for a quilt using appliqué? If you could choose a different color harmony for this project, what would it be? Bias is the diagonal grain of the fabric, and is used in sewing clothing and quilting. What makes it different than other cuts of fabric and why? Why does bias work well in bindings and skirts? A great book on classic appliqué quilts, with patterns, is Gwen Marston's *Classic Four-Block Appliqué Quilts: A Back-To-Basics Approach*.
- **Round Up Star Quilt** is a great lesson in intensity and how you can make a quilt look masculine. How does intensity set the mood for a quilt? Can you mix intensities in art? What effects does it create? *Bill Pickett: Rodeo-Ridin' Cowboy* by Andrea Davis Pinkney/Brian Pinkney and *Black Cowboy, Wild Horses* by Julius Lester and Jerry Pinkney are two superior books on cowboys that offer excellent art. The Booth Western Art Museum in Cartersville, GA is devoted entirely to western/cowboy art. Visit their website at <http://www.boothmuseum.org/>
- **Bunkhouse Scraps Quilt** uses the leftovers concept once again using a different color harmony. What about Round Robin makes it unique from the other harmonies? What artist secret does it incorporate automatically?

Create Your Own Custom Color Harmony

Create your own color harmony using the chart on page 80. The Cottage Garden quilt is a great exercise to showcase collections of fabric, paper, or other items you have in great numbers. If the size is daunting, make a smaller version with fewer blocks.

Color FAQs

Includes many questions about color mixing that don't normally apply to quilters, but you can use for colored pencil or watercolor studies.

Color Mastery Retreat

Excellent schedule and lesson plan for a two-day class for your children. Do this at home or together with your homeschool group. Have one parent teach Day One (three elements of color & harmonies) and another teach the cutting and piecing on Day Two.



Art

Quilters of Gees Bend made a huge impact on the art and quilt community. What about their quilts is unique? Why were these quilmakers given so much acclaim?

<http://www.quiltsofgeesbend.com/>

Faith Ringgold makes painted quilts and was a pioneer in art quilts. She has several books on her art and children's books that use quilting as a backdrop for her stories.

<http://www.faithringgold.com/>

Deidre Scherer is a fabric artist that creates portraits from fabrics and is best known for the cover illustration on *When I am Old I Shall Wear Purple*. She takes the lessons of sketching and watercolor painting and applies them to fabric. <http://www.dscherer.com/>

Careers in Quilting

A wide variety of careers are available in the quilting industry, including small business owner (quilt shop), author, pattern designer, fabric designer, salesperson, sewing machine repair, and teacher. What different skills would be required for each, and what skills do these careers share in common? Invite a shop owner and quilt teacher to your homeschool group to talk about their business.

Men in Quilting

While most quilters are women, many men do enjoy quilting, especially men who are drawn to art, mathematics, engineering. I once had a co-worker whose father was a neurosurgeon who took up needlepoint in retirement because he enjoyed the fine motor skills required in the patterns.

John Flynn is a quilter in Montana who excels at the engineering and mathematics in quilting. <http://www.flynnquilt.com/>

How to Quilt website has an article on men in quilting: <http://www.how-to-quilt.com/articles/4006-men-quilting.shtml>

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