BORDERS
Borders can frame a quilt or be used to increase the size of any quilt. They can showcase a border-print or a large-scale print, though more yardage is generally required. A single block with added borders added can become a table mat or a pillow sham.

1. Join strips, if necessary (smaller quilts may not need seaming), with a straight seam, end-to-end. Press seams in one direction. Keep in mind that if your border is a one-way design, you will need to adjust the yardage amounts and cut carefully to manage the design of the fabrics. See photo at page bottom.

2. You will need 1 - 3 strips sewn together for each side of the quilt, depending on how large the quilt is. Generally, for a queen you need about 3 strips per side.

3. Measure across the vertical center of the quilt top. Cut 2 border strips this length. If you want the seams centered to the quilt, you may need to increase the yardage.

4. Sew border strips to the sides of the quilt top. Press seams toward the borders.

5. Measure across the horizontal center of the quilt top. Cut 2 border strips this length.

6. Sew to the top and bottom of the quilt top. Press seams toward the borders.

Note the impact of a one-way print. Consider whether you want the border to go only one-way on the quilt, or to "circle" it. If your border has a one-way design, as in the quilt shown here, you will need to cut and piece the borders carefully. Usually, extra yardage and careful cutting are required to accommodate one-way prints.
**BATTLING**

Batting is the filler that is sandwiched between the quilt top and the backing. Its purpose is to add warmth, provide stability, and add dimension that highlights the quilting in the completed quilt. Measure the finished size of your quilt and add 6 inches to the width and the length of the quilt top, then purchase batting that size or larger. This is to allow for shrinkage and shifting during the quilting process. Batting is sold on the bolt and in packages in a variety of widths, fibers, and thicknesses.

**BACKING**

The illustrations below are guides to show how to piece fabrics that are an average width of 40 - 45”. Like the batting, backing should always be at least 6” larger than your quilt top dimensions, although you may be to “get away with” 4” on a runner or small quilt if you are careful while quilting. The extra allowance is for shrinkage and shifting during the quilting process. Depending on the size of the quilt and the width of your fabric, you may have some long lengths leftover from your backing after it is stitched. You may choose to either cut it to 6” beyond the quilt, or leave the extra amount until the quilting is done and trim it then. Some prefer the backing to extend a bit beyond the batting as well, and if you do, depending on the size of your quilt, you might need more yardage. Extra-wide backing fabric is available for seamless backings - make sure you purchase at least 6” larger than your quilt top measures (these are nice and easy!). Solid colored backings will help showcase the quilting! Printed fabrics will hide the quilting stitches - great for a beginner.

For a pieced backing:
- Trim off the selvage edges before piecing.
- Piece as shown below. An alternate way to piece a back is to place a full width of the fabric in the center and add an equal amount of fabric to each side until reaching the required width. Press seam allowances to one side (they will be stronger than if pressed open).
- For economy and fun, use leftover fabric from the quilt top to make simple pieced backs and signature blocks for the back.

\[ \text{WOF} = \text{Width of Fabric} \]

Quiltsmart uses a 42” measurement as a standard, but fabrics fluctuate from 36” wide (or smaller) to 90+” wide. 42” to 44/45” is most standard for quilting fabrics.

© Quiltsmart Inc. 2012 All rights reserved.
Congratulations, you have finished your quilt top!

Your quilt top just needs to be layered with backing and batting and completed. The quilting of the quilt is an art-form in and of itself. There are many books and resources on different techniques. There are also a multitude of different products from batting to backings to threads, needles, and special tools! Since we can’t show you everything, we show a few of our favorite quilting techniques to get you started. We are addressing the needs of the beginner quilter in this section, assuming that if you are not a beginner, you have probably developed your own quilting style. We encourage taking classes at your local quilt shop if you want to learn more.

Four Ways to Complete the Quilt

1) **Hand Tying** - Quick, easy, and inexpensive! Traditionally, many pioneer women used this method to finish the quilts they made for warmth. The down side is that it usually is not considered to be strong and therefore won’t last as long as a quilted quilt. This is a great quick finish method for a beginner or child to use.

2) **Hand Quilting** - Beautiful, age-old art, that is inexpensive, but very time-consuming. Practice is recommended.

3) **Home Machine Quilting** - Great for beginners if the quilt is small. We’d suggest a class first. It is relatively fast and the stitches are durable. Quilting can be simple straight lines or intricate designs, depending on your skill level.

4) **Long-Arm Quilting** - Hand your quilt over to a “Long-Arm” quilter (ask your local shop for a reference) unless you are one yourself! One advantage to handing the quilt to the long-arm quilter is that you don’t need to layer it. You just need to deliver the quilt top, batting, and prepared backing. Work with the quilter to pick the pattern and thread. There are many wonderful choices - beautiful “all-over” quilt patterns can be very reasonably priced. A custom design can be exquisite, but will be a more expensive option. “Free-motion” (like free-hand drawing with the machine) designs can be very fun but will depend on the level of creativity and experience of the long-arm quilter. Don’t be shy to ask your long-armer to show their work. They will be happy to do so!

Preparing the Quilt Top

Mark your quilt top with your design (thousands available!) according to the manufacturer’s instructions for the marking method you choose. You do not need to mark the quilt if you are passing it on to a long-arm, stitching in the ditch, echo quilting, or free motion. Also, see “Machine Quilting, p. 6 for more information on these techniques.

To mark the quilt top, place the quilt on a hard surface. There are many marking tools: wash-away pens, air-erase pens, chalk, iron-away pens. There are stencils and specialty paper for transferring designs. “Continuous line designs” have a stitching path that allows the whole block or border quilting pattern to be stitched in one continuous line. These are a nice choice for ease of use, especially for a beginner.

Pumpkin Seed Quilt, by Debbie Wilson. Made from her mother’s vintage garments, Debbie chose to combine tying and stitch-in-the-ditch techniques to finish this cherished quilt for her sister.
The Quilt Sandwich
A quilt sandwich consists of 3 separate pieces— the quilt top, batting, and backing, which need to be layered and basted securely together to eliminate any shifting, puckering, or unwanted folds while you complete the quilting. As a general rule, you will be starting from the center of the quilt and working your way out. Always check for puckers through the quilt sandwich each time you move from one section to another.

Preparing the Backing, Batting, & Quilt Top
Preparation for Tying or Hand-Quilting
A frame is easy for tying and hand-quilting as no basting is required. The frame also holds the fabrics taut while you tie or hand-quilt. Find the center of the backing, batting, and quilt top. Place together in the center of the frame. Secure the edges of the frame, and pull taut just a bit. After you finish a section, re-position the quilt to work on another section. There are large floor standing frames and smaller hand-held frames. You may also secure the layers without a frame as mentioned below in the “Securing the Layers” section.

Preparation for Machine-Quilting
Good surfaces to work on are:
- Straight lined vinyl and tile floors. It is easy to get the quilt square because you can use the lines on the floor, but it can be hard on the knees (TIP: use knee pads!).
- Large tables such as a dining room table, ping-pong table or 2 banquet tables placed together.
- If you don’t have a table larger than your quilt, a smaller table can be used. The quilt is then basted in sections starting from the center, and moved as you baste toward the edges.

Securing the Layers
For machinequilting, the quilt will need to be basted, either with pins or spray adhesive. This is to keep the layers from shifting while quilting or tying. A floor standing frame, as mentioned above, is helpful for pin-basting. Spray baste adhesives (temporary bonds that will wash out or dissipate in time) are also available for securing the layers - especially good for small quilts - just follow the manufacturer’s instructions.

- To layer a quilt, first place the backing wrong side up on a large flat surface (or in the frame if you are going to pin-baste).
- Tape it to the floor or clamp with large binder clips/quilt clips to a table. Make sure it is smooth, flat, and taut - but not too stretched.
- Place the batting on top of the backing and smooth from the center outward.
- Place the quilt top right side up on the batting and smooth again, taping or clamping as required. Do not stretch the quilt, but do keep it taut and smooth.
- Starting at the center and working your way out, use hand-quilting thread, quilting pins (like safety pins with a bend to them), or safety pins to baste the quilt through all three layers. The pins/stitches should be placed about every 5 inches or so. Leave pins open as you go along, closing them all at once when you finish each section. TIP: For ease in closing the pins and saving fingers, use the edge of a serrated grapefruit spoon or a Kwik Klip (found at quilt shops). For thread basting, take 2” long running stitches. Work in straight lines forming a grid pattern. If possible, try to stay away from the areas that are marked with your design, as it will be easier to quilt around them than to take them out while you are quilting. Also, avoid heavy intersections of seams, as those are hard to push the pins or needle through. Smooth the quilt (checking the back for smoothness also) as you work your way out from the center.
Tying

These instructions will work if you use a frame and do not have your quilt basted, or if you pin or thread baste the sandwich.

- Thread a large-eyed needle (curved is great, but others are available) with 6 strands of embroidery floss (wool yarn can be used too, but it tends to ball up after washing) about 3 to 4 feet long. Though yarn and ribbon may be fine for a wallhanging, they do not wear well through years of active use and washing. Embroidery floss holds a knot well and can add a bit of color.
- Start in the center, insert the needle through all layers, and come up about \(\frac{1}{8}\)” away from where you inserted the needle.
- At the first spot you would like to tie, make a square knot through all layers. Do not clip the threads. A square knot has two parts. The first one is just like the first step of tying your shoe, with the floss going “right over left”. Do this again, with the floss “left over right”. Pull taut.
- Thread continuously through as many tie points as your length of floss allows, with the thread going through all 3 layers at each tie point. After using a full length of floss, cut midway between the tie points.
- At each of the tie points, make a square knot. Trim the threads to about 1” in length from the knot. Work your way out to the edges, smoothing the fabrics as you go.
- If you are tying through many intersections of seams, keep a pliers handy to aid in pulling the needle through the layers.
- Check the bottom of the quilt often to ensure that there are no pleats or puckers.
- Place knots as often as needed according to the batting manufacturer’s standards. Some batting needs to be secured every 10”; some can be much less than that.
- Smooth the quilt, pin edges, and machine-baste close to the edge.

Hand Quilting

- Hand quilting takes a little practice. Be easy on yourself and don’t worry about perfection. If you would like a little challenge, it can be a very rewarding way to finish your quilt.
- A quilting frame is a great option for holding the layers together while you quilt.
- Usually, the quilt top is marked with a pattern, but you can also choose to “echo” quilt, which is stitching a series of lines parallel to the seam lines or to an appliqué. The first line can be as far away from the seam as you feel comfortable - most often anywhere from one quarter of an inch to one inch apart. There are specialty tapes made for this purpose and they are very easy to use.
- Make sure you use a strong hand quilting thread, and a needle with a large eye, or keep needle-threaders near you! If you match the thread to the fabric, there is less chance of mistakes showing (not that there are any mistakes - remember that inconsistency is quaint and charming, not wrong - just look at old quilts!).
- Insert the needle and stitch in an up and down fashion, trying to keep the stitches about the same length.
- “Chunky-quilting” (big-stitch) is a fun stitch and goes quickly - great for a beginner. The stitches are about a quarter of an inch long. It looks really cute on casual, country, and primitive style quilts. Generally, the threads are contrasting in color. It is not recommended for baby quilts, as they could get their fingers caught in the threads.
**Machine Quilting**

There are several types of machine quilting. Discussed here are stitch-in-the-ditch and echo quilting, two techniques that are good choices for beginners. Both of these techniques are made easier with a walking foot (dual feed/even feed foot). Free motion quilting is also a good machine quilting technique, but requires a bit more practice (see below).

**Selecting the thread and needle**

- Auditioning a variety of thread types and colors is time well spent. There are many available, including multi-colors that blend with many fabrics. Thread always looks different on the spool than when it is viewed on the fabric. Simply pull thread from the spool and place it in a loose pile on the quilt top. Move the thread pile from fabric to fabric to see the effects it will have on the quilt. Pre-wound bobbins are available for many machines in an array of thread colors and weights. These can be a great time saver and they hold more thread yardage than you can wind yourself. If you want the stitching to show on the top, use a contrasting color of thread. A beginner might choose to use a thread color that blends with the fabric so that the stitching will not be so prominent.

- Always use a new needle (specialized for quilting - not a “universal” needle) to begin a project and change it after every 8 hours of machine quilting. Selecting the right needle comes after deciding on the type/weight of the machine quilting thread. Quilting TV personality, Sue Hausmann, recommends a size 90 quilting needle - because you need a larger size needle to poke a large hole as you sew so that the needle goes up and down easily through the quilt sandwich and it doesn’t lift the quilt sandwich off the throat plate of the machine.

**Stitch-in-the-Ditch**

- Use a walking foot (also known as even feed or dual feed). Some machines have this built in to the machine. The walking foot is made to feed the top and the bottom of the quilt evenly. Because of this you want to resist the urge to push and pull the quilt. Allow the foot to do its work. Keep the weight of the quilt on the sewing table so it will not drag and pull on the needle.

- There are many quilting items that help you “get a grip” on the quilt so that it does not slip under your hands while stitching. You can find gloves with grippers, finger cots, and slippery mats to allow the quilt to glide easily, among other notions.

- Stitch in the seams (or “ditches”) of the quilt top, backstitching when you start and stop. Watch your needle, not the foot, and make sure the needle is in the seam for every single stitch. Practice on a small quilt sandwich.

- Ideally it is best to start in the center and work your way out. Watch out for puckering and pleating. As necessary, smooth the quilt toward the edges as you go; this is easy to do if the quilt is spray-basted, but more difficult if pinned.

**Echo Quilting**

- Echo quilting (also known as “shadow” or “ocean waves”) is stitching parallel lines from the seam lines.

- The first line can be as far away from the seam as you feel comfortable - most often anywhere from one quarter of an inch to one inch. A very easy and accurate method is to use the edge of the walking foot as a guide to stitch along the seam line. Stitch the rest of the lines the same width apart as the first line is from the seam line. There are also specialty tapes made for this purpose.

**Free-Motion Quilting**

- Free-motion quilting is created by dropping the feed-dogs (there are switches on machines that will lower them beneath the throat plate) and moving the quilt under the needle freely.

- For best results, use a free-motion quilting foot. Be sure to put the presser foot down to engage the top tension.

- You can create beautiful designs with this technique, but it does require practice.

Enjoy finishing your quilt! We encourage you to check out your local quilt shop for classes, products and guidance!

©Quiltsmart Inc. 2012 All rights reserved.