

Quilt Borders for Square Quilts

By

Tracey Pereira

*A 5 step guide on how to
apply borders*

Quilt Borders for Square Quilts!

Since 2000 I have owned a longarm quilting machine and for a few years I ran a machine quilting business quilting patchwork tops for other people. During this time I had the privilege to work on many wonderful and beautiful quilts. Some were true works of art. Skilfully constructed with inspired colour and fabric choices while others looked wonderful but were let down by poorly applied borders.

In my experience a poorly applied border falls into four categories made up of two main problems which I call the Frill and the Parachute.

1. **The Frill.** Here the borders have been eased in, or stretched so much that they resemble a flared or frilled skirt. Here the borders are bigger than the main body of the quilt.



2. **The Parachute.** Here the borders have been pulled so tight the middle of the quilt puffs up to resemble a parachute. The borders here are smaller than the main body of the quilt.



3. **The Split Personality.** Here the borders are a combination of both frill and parachute and may change at will around the quilt edges!

4. **The Trapezoid** - Here no two sides are parallel at all!

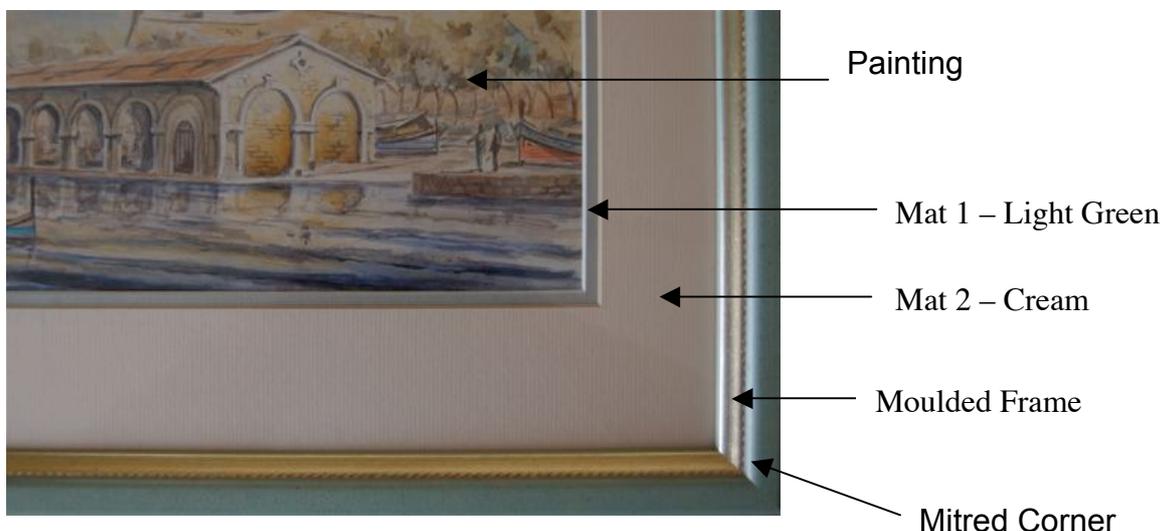
For the most part a competent quilter will be able to sort through most of the difficulties created by these technically challenging borders. However by the same token they are not miracle workers and it is not always possible to produce silk purses! A well constructed quilt top will make quilting not only an easier and more pleasant experience for the quilter, it will also produce a much better looking and more professionally finished quilt that will wear and stand the test of time.

The following guide is a technical source to help you correctly apply your borders and produce square quilts

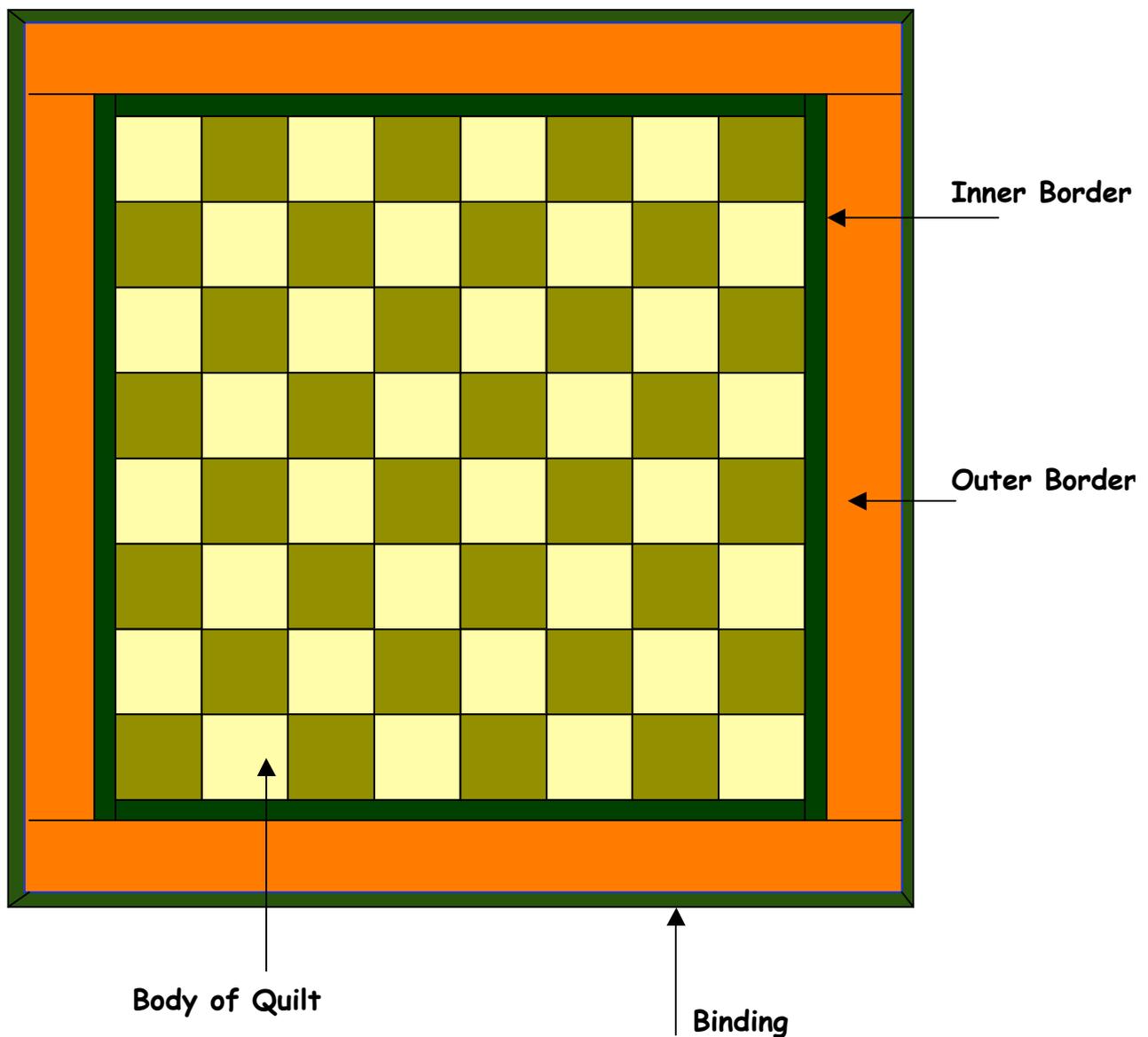
What is a Border?

In traditional artwork a painting is finished by adding a frame - a moulded design that is cut to width and length and joined at the corners with a mitred joint. Often a coloured paper-based 'mat' is included in the framing process to compliment the artwork before adding the moulded framework. This mat forms a border around the artwork. Sometimes one or more mats may be used to add detail to the piece and add highlight colour.

Once framed the artwork is considered finished and ready for hanging.



In the world of quilts our artwork is completed by adding a frame and mat too. In our case the 'mat' is the fabric border that surrounds the artwork and compliments the design and colour of the body of the piece. As in a picture frame one or more mats may be added - creating inner borders. The 'frame' is the binding that we apply to finish and neaten the edges. The border may be pieced or plain or made up of a mix of the two but like the frame on a painting the border must be square to make it look its best.



Anatomy of a Quilt

A border has two roles to play in a quilt.

1. Visual
2. Functional

Nothing adds the finishing touch to your quilt quite like a beautiful quilt border. It should complement and enhance the piecing in the main body. It can be simple or complicated, pieced or unpieced, wide or narrow, or indeed a mixture of these. But secondly and arguably more important is its functional role to keep the quilt square. The following photographs show some of the many border combinations that can be added to a quilt. In some cases 4 or 5 borders have been added. In quilts with multiple borders it is essential to keep each border square and true. If it is not any imperfections will compound in the next border and the final result will very unsatisfactory producing a quilt that 'waists' in the middle and grows ears at each corner!



← Corner Stone

1. Example of plain borders.
(*Blue Rhapsody* by Yvonne McKee 2006)

This blue and white quilt has one outer blue border with pieced corner stones. This outer border frames two further inner borders - a solid blue that surrounds the stars in the centre and a plain white.



2. Example of plain and pieced borders.
(*Region 3 Raffle* by QGBI members and Tracey Pereira 2001)

The blue outer border in this quilt has plain terracotta corner stones and frames 2 inner borders. The first is a blue and white half-star design and the second a smaller flying geese pattern in blues and terracotta.

3. Example of multiple plain borders.

(Sweet Princess by Tracey Pereira 2000)

This quilt has 3 borders surrounding the body of the quilt starting with a small orange. A small yellow follows and finally a larger blue border with green corner stones.



4. Example of multiple pieced and plain borders.

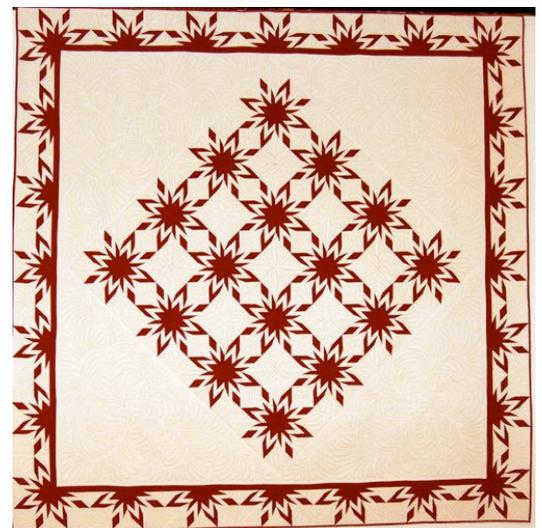
(Summer Picnic by Bags and Tarts 2006)

This quilt is a special design known as a medallion quilt. It is special because it is constructed as a series of borders. This particular quilt has a mix of four plain and pieced borders. However the design of each border makes it difficult to tell where one starts and one finishes.

5. Example of pieced border.

(Cosmic Cousins by Emma Armstrong and Tracey Pereira 2006)

This quilt has 2 borders around an on-point design of stars. The first is a small red inner border and the second a pieced border of half stars.



What do you mean by Square Borders?

No matter how careful and accurate you are when you cut and piece your top it is highly likely that the edges of the quilt will differ in size from the middle. For all sorts of reasons the quilt will vary in length and if left uncorrected the finished quilt will have rippled or wavy edges to it. But with some careful measuring and some simple arithmetic this can be corrected as we apply the borders. A quilt with square borders has parallel sides. It can be rectangular or square in shape and can even have shaped corners but in all cases the two opposite sides will be the same length, hang straight and be parallel to each other.

Applying a square border is not a difficult process but one that should not be rushed in my opinion. Be patient, take your time and you will be happier with the results!

A Word about Lengthwise Grain

Fabric is produced with a crosswise and a lengthwise grain. The crosswise grain runs from selvedge to selvedge across the width of the fabric and the length wise grain runs at right angles to this. Generally speaking the lengthwise grain is more stable in structure and has less stretch in it than the crosswise grain. For this reason I prefer to cut plain borders from the lengthwise grain. Unfortunately this does mean that you will need to buy more fabric but it is worthwhile in the long run. If you do not wish to buy extra fabric, or do not have sufficient fabric available then of course cut border strips from the crosswise grain. However be aware that it will have a greater tendency to stretch and avoid handling and pressing it as much as possible during the construction process.

The following module explains a little more about fabric grain. Follow this module and really understand the effects of grain on the stability of your piecing.

Fabric Grain and Fabric Bias

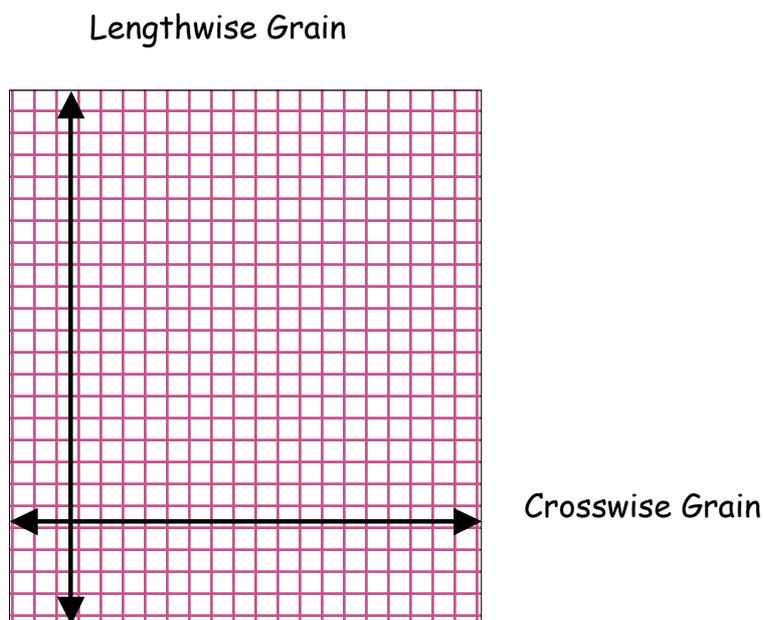
Woven fabric is made of two sets of threads.

The **WARP** threads run up and down the length of the fabric. The **WEFT** threads run at right angles to the warp - they are woven under and over the warp threads and run from left to right across the fabric - going from one edge to the other. (Called the selvedges).

These two thread directions create the Grain of the fabric.

The warp thread grain is generally referred to as the **lengthwise** grain and is traditionally considered to be the most stable - i.e. has limited stretch in it.

The weft thread grain - called **crosswise** grain is less stable. The degree of stability (or stretch) will depend on how fine the weave is. An open weave - one that uses less threads per inch - will have more crosswise stretch than a closer weave. (Sheeting is a good example to demonstrate this : A fine cotton sheet with 330 tpi will be very stable - you wont be able to stretch it easily on the crosswise grain whereas a flannette sheet with maybe 150 tpi will).



How to identify fabric grain

Try this little test to identify fabric grain.

Take a piece of woven cloth - cotton patchwork fabric for example. Hold the fabric in both hands and give it a quick tug. Feel the degree of stretch. Now turn the fabric 90 degrees and tug again. Feel the stretch.

Which was the more stretchy?

When you have identified the more stretchy direction you will have found the **crosswise** grain of your fabric.

Now try this test.

Place the fabric in your hands and tug diagonally across the fabric. What do you find

now? Try tugging on the opposite diagonal too.

You should find that this diagonal pull - in either direction - has much more stretch than either the lengthwise or the crosswise grain. This is called **BIAS** grain.

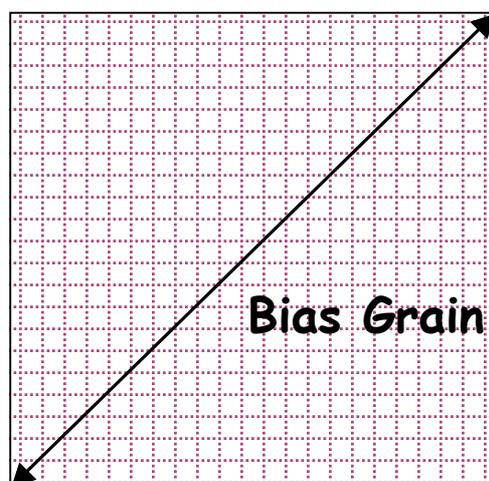
True bias is at 45 degrees to the lengthwise or crosswise grain. But there are many other degrees of bias too. All will stretch more than lengthwise or crosswise grain. If the bias grain becomes exposed - i.e. we cut the fabric at an angle to the lengthwise or crosswise grain it becomes much more unstable. It will stretch and will not recover becoming permanently distorted.

Bias grain and patchwork

Generally speaking, in patchwork we want to avoid working with an exposed bias grain because of the excessive stretch and distortion that can occur. But sometimes we are forced to work with bias edges. This is not an insurmountable problem but be aware that sewing and ironing techniques may exasperate the problems of working with bias grain.

Unconsciously when we sew we tend to pull back on fabric as it feeds under the needle of the sewing machine. As we become more experienced we learn to let the sewing machine do the work and our hands merely 'guide'. But for the inexperienced machinist this pull-back action may be enough to add stretch into our projects.

As novices we may also have little experience of 'patchwork ironing'. In patchwork we should learn to lift and lower the iron and press our seams and reserve ironing for shirts! When we iron rather than press we can distorted our patchwork units and they can grow in length across the diagonal seam and developed sows ears!. As we all know it is not possible to make a silk purse from these!



Five Steps to Square Borders

Step 1: Calculate the length of the horizontal borders

Step 2: Cut and add the horizontal borders

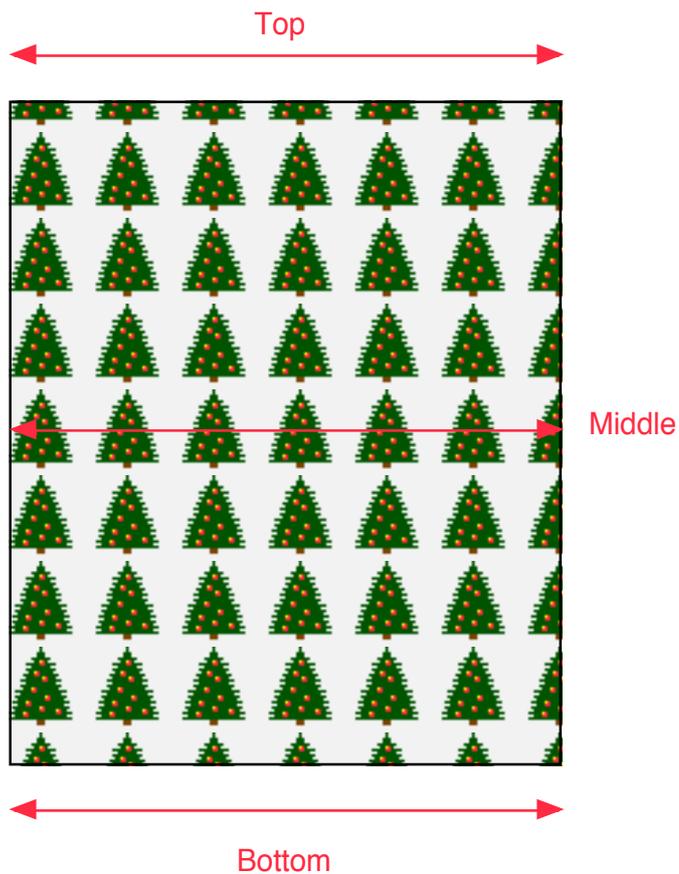
Step 3: Calculate the length of the vertical borders

Step 4: Cut and add the vertical borders

Step 5: Check and stay stitch

On the next few pages these five steps are explained in detail. Follow them carefully and you will have a perfectly square quilt top ready for quilting.

Step 1 - Calculate the Length of the Horizontal Borders



$$\text{Horizontal Border Length} = \frac{\text{Top} + \text{Middle} + \text{Bottom}}{3}$$

Example :

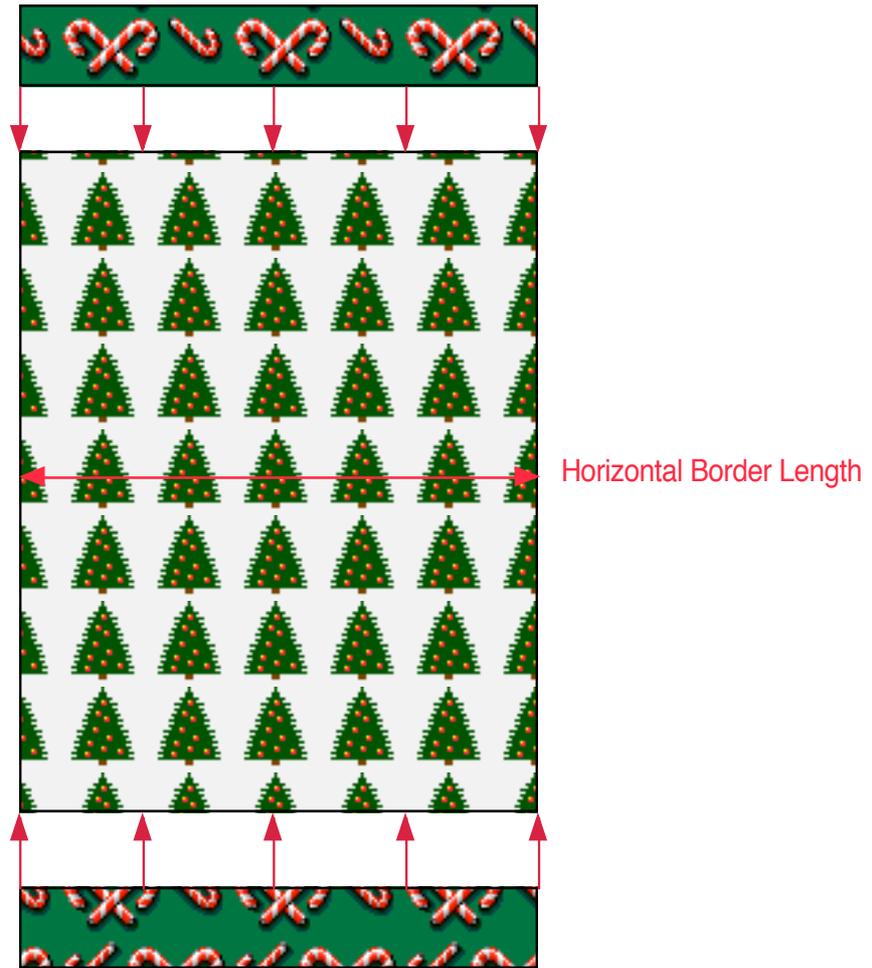
Measure the width of the quilt on both edges and across the middle.

1. Top edge measures 71cm
2. Middle measures 70 cm
3. Bottom edge measures 70.5cm

$$\text{Horizontal Border Length} = \frac{71 + 70 + 70.5}{3} = 70.5 \text{ cm}$$

TIP - Measure twice - cut once!

Step 2 - Cut and add the Horizontal Borders



1. Cut Horizontal Borders.

Measuring carefully cut two border strips as long as the calculated horizontal border length. Be sure to cut both borders to exactly the same length.

2. Find Border half and quarter marks

Fold each border in half and half again to find the centre and quarter points. Mark with a pin.

3. Find Quilt top half and quarter marks

Fold the quilt top in half and half again to find the centre and quarter points. Mark with a pin.

4. Pin-match the border and quilt top

Taking one border at a time align the centre and quarter pins on the border with the centre and quarter pins on the quilt top. Pin together at these points. Now match and pin the left and right edges of the border and quilt top together.

5. Ease the Quilt top to fit the Borders

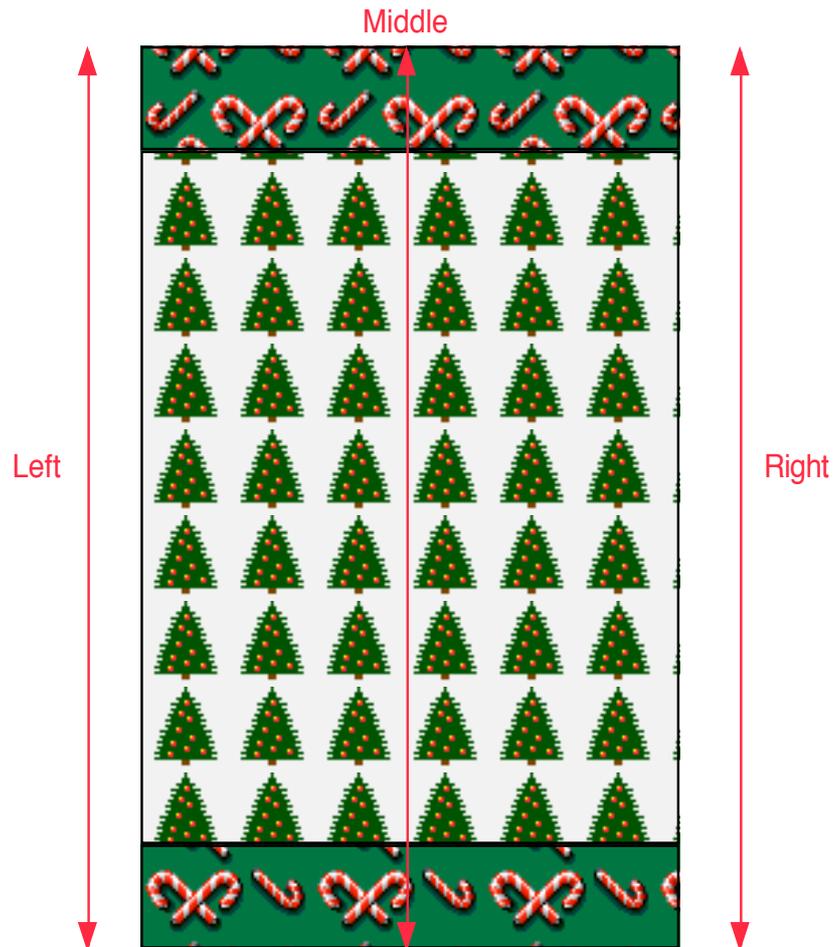
Carefully ease or stretch the quilt top to fit the border. Pin every few centimetres. Sew in place - removing pins as you go.

6. Press the seam towards the border.

Carefully set the border seam and press lightly towards the outer edges.

TIP - Cut both borders at the same time. Lay one border strip on top of the other. Mark and trim to the required length in one go. Both borders will be exactly the same size!

Step 3 - Calculate the Length of the Vertical Borders



$$\text{Vertical Border Length} = \frac{\text{Left} + \text{Middle} + \text{Right}}{3}$$

Example :

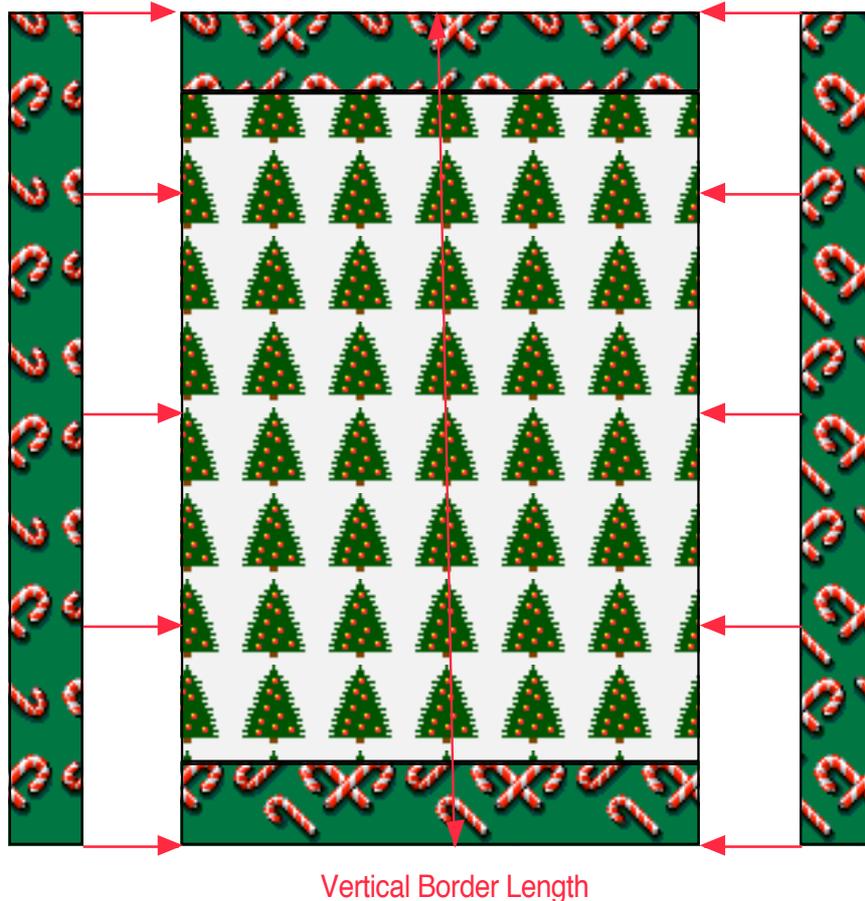
Measure the length of the quilt on both edges and down through the middle.

1. Left edge measures 81cm
2. Middle measures 80 cm
3. Right edge measures 80.5cm

$$\text{Horizontal Border Length} = \frac{81 + 80 + 80.5}{3} = 80.5 \text{ cm}$$

TIP - Invest in a good quality 120" or 3m tape measure and avoid measurement piecing!

Step 4 - Cut and add the Vertical Borders



1. Cut Vertical Borders.

Measuring carefully cut two border strips as long as the calculated vertical border length. Be sure to cut both borders to exactly the same length.

2. Find Border half and quarter marks

Fold each border in half and half again to find the centre and quarter points. Mark with a pin.

3. Find Quilt top half and quarter marks

Fold the quilt top in half and half again to find the centre and quarter points. Mark with a pin. The quilt top now includes the horizontal top and bottom borders. Be sure to mark centre and quarter points inclusive of this addition.

4. Pin-match the border and quilt top

Taking one border at a time align the centre and quarter pins on the border with the centre and quarter pins on the quilt top. Pin together at these points. Now match and pin the top and bottom edges of the border and quilt top together.

5. Ease the Quilt top to fit the Borders

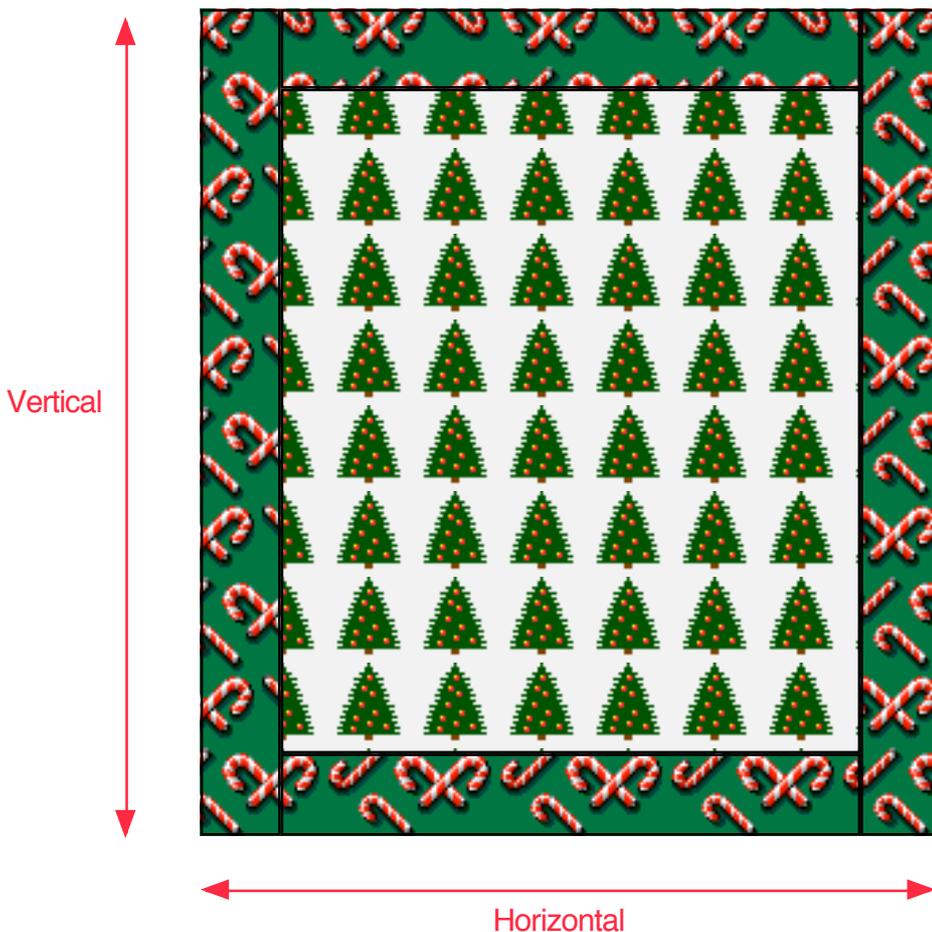
Carefully ease or stretch the quilt top to fit the border. Pin every few centimetres. Sew in place - removing pins as you go.

6. Press the seam towards the border.

Carefully set the border seam and then press lightly towards the outer edges.

TIPS - Lightly finger-press long border seams first to help avoid tiny tucks and pleats forming on the right side when pressing. Try zig-zagging the iron across the seam when pressing (rather than in the direction of the seam) to help reduce the chance of the border fabric stretching or bowing.

Step 5 - Check and Stay Stitch



All borders are now attached and the quilt top is almost complete and ready for quilting. There are two steps left to complete the top.

1. Check quilt top is square.

Check your top for squareness by measuring the opposite border lengths at the outer edges. Both vertical borders should measure the same. Both horizontal borders should measure the same. If they are not - your quilt is not square. Check to see where the error is occurring and correct before proceeding to the next stage. If necessary unpick and re-apply the offending border(s) following the 4 steps border guide.

2. Stay-stitch the edges

Adjust your machine to a small-medium length stitch. Carefully sew around your quilt top 0.25cm from the outer edge on all four sides. Break the thread and restart at each corner leaving a few centimetres of thread tail. (This is because you are working on one layer of fabric and you may find your machine has very slightly gathered your outer edges. Any gathering should be minimal though. Adjust your machine tension if it is any greater.)

3. Final press

The outer edges are now stabilised and you may press the borders without fear of distorting them any further. Any minor gathers from the stay stitch should disappear at this stage.

TIP: If you will not be quilting your top straight away carefully hang and store it on a padded clothes hanger to reduce creasing and further pressings.

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by
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A techniques guide for beginners and intermediate quilters.
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