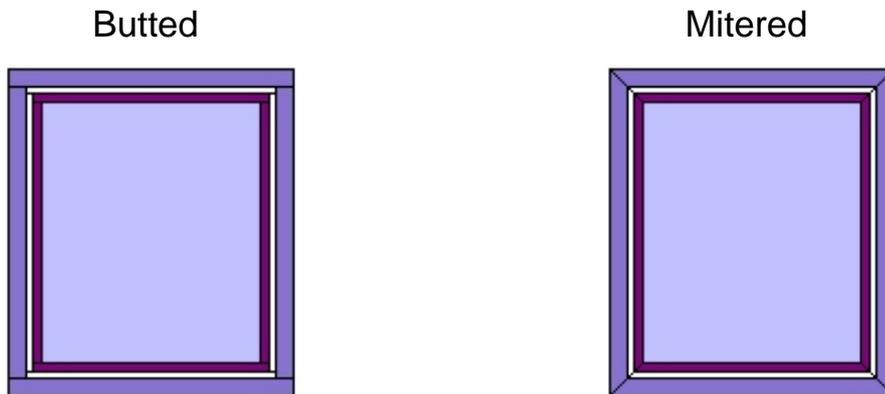


## Borders

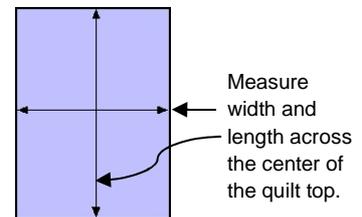
Borders frame a quilt. As with a picture frame, borders can be simple or elaborate, single or multiple. This tutorial, describes simple borders, butted and mitered. In the examples used for the following discussion, a 3 part border will be added with instructions for both butted and mitered. The resulting quilt tops would look like this\*:



### 1. Measure\*\* the Quilt Top

In the following examples, space for your quilt dimensions and calculations is given alongside the example measurements and calculations.

**VERY IMPORTANT:** Measure the width and length across the center of the quilt top! This helps to square up the quilt top and keep the borders from being wavy.



	Example	Your Quilt
Quilt Width	45	
Quilt Length	54	
Inner Border	2	
Middle Border	1	
Outer Border	4	

\* images not to scale

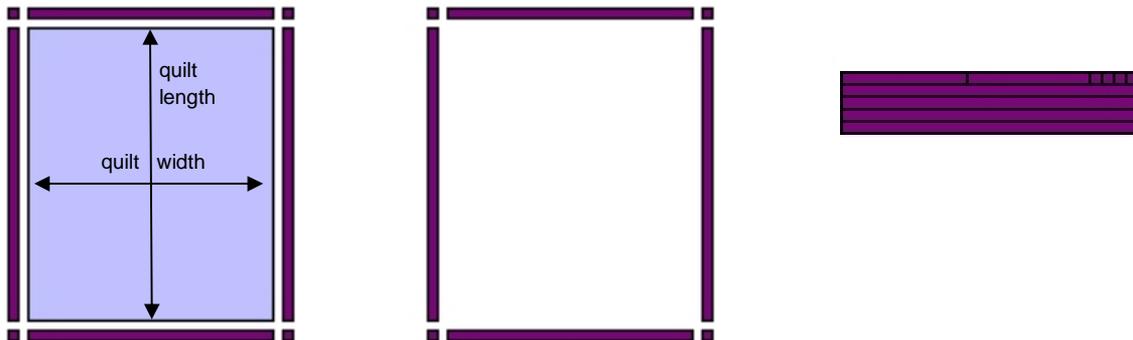
\*\* all measurements are in inches unless otherwise specified

## 2. Calculate How Much Fabric You Need

For each border element:

- ✿ Calculate the total length of the border.
- ✿ Figure the number of strips you need to cut from a specific width of fabric.
- ✿ Multiply the number of strips times the width of the border plus the seam allowances.

The following diagrams may help to visualize the calculation process.



The length of a corner is the border width plus the seam allowances. For the quilt width & length, remember to add the width of any previous border elements. Mitered borders require twice as much fabric in the corners.

- ✿ Total length of a **butted** border = 2 width + 2 length + 4 corners
- ✿ Total length of a **mitered** border = 2 width + 2 length + 8 corners
- ✿ Number of strips = Total length of border divided by the width of fabric, rounded up to the next whole strip.
- ✿ Minimum fabric required = Number of strips times the border width plus seam allowances.

**MINIMUM FABRIC REQUIRED:** The above formulas are used to calculate the minimum amount of fabric required for borders. They do not take into consideration fabric that is off grain or seam allowances for piecing. It's a good idea to add enough fabric for another strip or 2, depending on the width and grain of your fabric.

Calculations for the example borders are detailed in the following tables. If you would like to skip the details, you can use the [Calculators at Lily Street Quilts](#) to do the computations for you.

\* images not to scale

\*\* all measurements are in inches unless otherwise specified

Detailed fabric requirement calculations for example butted borders:

Inner Border - Butted	Example	Your Quilt
Border Width	2	
Width + seam allowances	2.5	
Quilt Width	45	
Quilt Length	54	
Total Length	$2(45) + 2(54) + 4(2.5) = 208$	
Fabric Width	42	
Number of Strips	$208 / 42 = 4.95$ , rounded up to 5 strips	
Minimum Fabric Required	$5(2.5) = 12.5$ inches	
Middle Border - Butted	Example	Your Quilt
Border Width	1	
Width + seam allowances	1.5	
Quilt Width plus inner bdr	$45 + 2(2.5) = 50$	
Quilt Length plus inner bdr	$54 + 2(2.5) = 59$	
Total Length	$2(50) + 2(59) + 4(1.5) = 224$	
Fabric Width	42	
Number of Strips	$224 / 42 = 5.33$ , rounded up to 6 strips	
Minimum Fabric Required	$6(1.5) = 9$ inches	
Outer Border - Butted	Example	Your Quilt
Border Width	4	
Width + seam allowances	4.5	
Quilt Width plus inner & middle borders	$45 + 2(2.5) + 2(1.5) = 53$	
Quilt Length plus inner & middle borders	$54 + 2(2.5) + 2(1.5) = 62$	
Total Length	$2(53) + 2(62) + 4(4.5) = 248$	
Fabric Width	42	
Number of Strips	$248 / 42 = 5.90$ , rounded up to 6 strips	
Minimum Fabric Required	$6(4.5) = 27$ inches	

\* images not to scale

\*\* all measurements are in inches unless otherwise specified

Detailed fabric requirement calculations for example mitered borders:

Inner Border - Mitered	Example	Your Quilt
Border Width	2	
Width + seam allowances	2.5	
Quilt Width	45	
Quilt Length	54	
Total Length	$2(45) + 2(54) + 8(2.5) = 218$	
Fabric Width	42	
Number of Strips	$218 / 42 = 5.19$ , rounded up to 6 strips	
Minimum Fabric Required	$6(2.5) = 15$ inches	
Middle Border - Mitered	Example	Your Quilt
Border Width	1	
Width + seam allowances	1.5	
Quilt Width plus inner bdr	$45 + 2(2.5) = 50$	
Quilt Length plus inner bdr	$54 + 2(2.5) = 59$	
Total Length	$2(50) + 2(59) + 8(1.5) = 230$	
Fabric Width	42	
Number of Strips	$230 / 42 = 5.48$ , rounded up to 6 strips	
Minimum Fabric Required	$6(1.5) = 9$ inches	
Outer Border - Mitered	Example	Your Quilt
Border Width	4	
Width + seam allowances	4.5	
Quilt Width plus inner bdrs	$45 + 2(2.5) + 2(1.5) = 53$	
Quilt Length plus inner bdrs	$54 + 2(2.5) + 2(1.5) = 62$	
Total Length	$2(53) + 2(62) + 8(4.5) = 266$	
Fabric Width	42	
Number of Strips	$266 / 42 = 6.33$ , rounded up to 7 strips	
Minimum Fabric Required	$7(4.5) = 31.5$ inches	

Convert inches to yards:

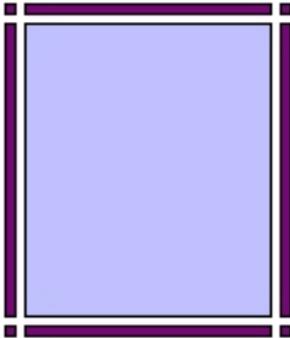
inches	yards
4.5	1/8
9	1/4
13.5	3/8
18	1/2
22.5	5/8
27	3/4
31.5	7/8
36	1

\* images not to scale

\*\* all measurements are in inches unless otherwise specified

### 3. Sew Butted Borders

Remember this image?

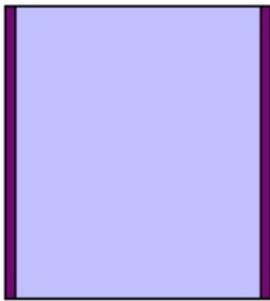


Each element of butted borders is sewn to the quilt top one at a time. In this example, the sides are sewn on first. The top and bottom which include the corners are sewn on next. The top and bottom could be sewn on first and then the sides (including corners). Either way, the process is the same:

- ✿ Measure for the border—**across the center of the quilt!**
- ✿ Cut and piece the border to the **exact** measurement acquired in the previous step.
- ✿ Sew the border to the quilt top, easing the quilt top to fit the border if necessary.
- ✿ Press the seam flat to one side. If you plan to stitch in the ditch, think about which side you want the ditch on.

Graphically, the sewing order of our example borders is as follows:

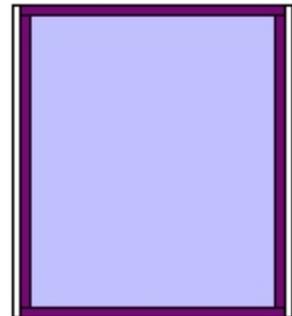
1. Apply the inner border sides



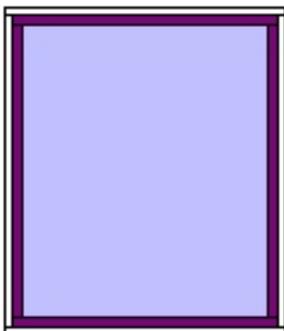
2. Apply the inner border top & bottom



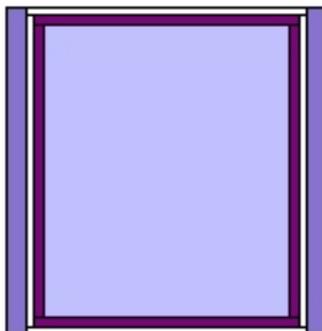
3. Apply the middle border sides



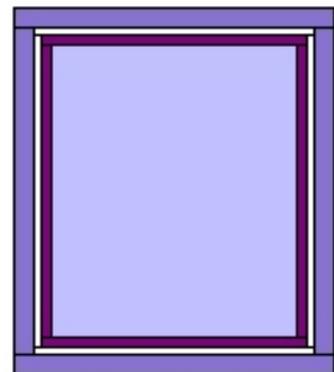
4. Apply the middle border top & bottom



5. Apply the outer border sides



6. Apply the outer border top & bottom



\* images not to scale

\*\* all measurements are in inches unless otherwise specified

A more detailed description of the process of sewing the example butted borders:

Inner Border – Butted sides	Example	Your Quilt
Measure – we know the exact length of the quilt (across the center) from our calculations: 54 inches. This is the only measurement from our calculations that we can use. Measurements for each of the next border elements must be made after the previous element has been sewn on.	54	
Cut & piece 2.5 inch strips together to achieve 2 strips of exactly 54 inches in length.		
Sew a 54 inch strip to each side.		
Press seams to outside for the ditch on the quilt side.		
Inner Border – Butted top and bottom	Example	Your Quilt
Measure (across the center) the new quilt top width that includes the sewn side inner borders. With perfect $\frac{1}{4}$ inch seams and perfect pressing, the new width would be $44.5 + 2(2.25) = 49$ ".	49	
Cut & piece 2.5 inch strips together to achieve 2 strips of exactly 49 inches in length.		
Sew a 49 inch strip to the top and bottom.		
Press seams to outside for the ditch on the quilt side.		
Middle Border – Butted sides	Example	Your Quilt
Measure (across the center) the new quilt top length that includes the sewn top and bottom inner borders. With perfect $\frac{1}{4}$ inch seams and perfect pressing, the new length would be $53.5 + 2(2.25) = 58$ ".	58	
Cut & piece enough 1.5 inch strips together to achieve 2 strips of exactly 58 inches in length.		
Sew a 58 inch strip to each side.		
Press seams to outside for the ditch on the quilt side.		
Middle Border – Butted top and bottom	Example	Your Quilt
Measure (across the center) the new quilt top width that includes the sewn side inner & middle borders. With perfect $\frac{1}{4}$ inch seams and perfect pressing, the new width would be $44.5 + 2(2) + 2(1.25) = 51$ ".	51	
Cut & piece enough 1.5 inch strips together to achieve 2 strips of exactly 51 inches in length.		
Sew a 51 inch strip to the top and bottom.		
Press seams to outside for the ditch on the quilt side.		

\* images not to scale

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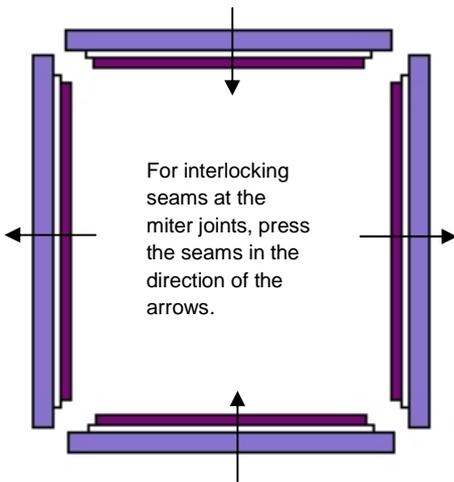
Outer Border – Butted sides	Example	Your Quilt
Measure (across the center) the new quilt top length that includes the sewn top and bottom inner & middle borders. With perfect $\frac{1}{4}$ inch seams and perfect pressing, the new length would be $53.5 + 2(2) + 2(1.25) = 60''$ .	60	
Cut & piece enough 4.5 inch strips together to achieve 2 strips of exactly 60 inches in length.		
Sew a 60 inch strip to each side.		
Press seams to outside for the ditch on the quilt side.		
Outer Border – Butted top and bottom	Example	Your Quilt
Measure (across the center) the new quilt top width that includes the sewn side inner, middle & outer borders. With perfect $\frac{1}{4}$ inch seams and perfect pressing, the new width would be $44.5 + 2(2) + 2(1) + 2(4.25) = 59''$ .	59	
Cut & piece enough 4.5 inch strips together to achieve 2 strips of exactly 59 inches in length.		
Sew a 59 inch strip to the top and bottom.		
Press seams to outside for the ditch on the quilt side.		

\* images not to scale

\*\* all measurements are in inches unless otherwise specified

## 4. Sew Mitered Borders

Mitered borders are applied differently than butted borders. All the border elements are sewn together first and then applied as a single piece to each edge of the quilt. For each border element:



-  Calculate the length of the strip.
-  Cut and piece the strip a bit larger than the calculated length.
-  Sew the strip to the other elements, matching centers.
-  Press the seam flat to one side. Alternate the direction for interlocking seams at the miter joints.

A detailed description of the process of sewing together the example mitered borders:

<b>Inner Border – Mitered sides</b>	<b>Example</b>	<b>Your Quilt</b>
Calculate the length—quilt top length plus 2 corners and an inch or 2 more: $54 + 2(2.5) + 2 = 61$ ".	61	
Cut & piece 2.5 inch strips together to achieve 2 strips of at least 61 inches in length.		
Nothing to sew to yet.		
No seam to press yet.		
<b>Inner Border – Mitered top and bottom</b>	<b>Example</b>	<b>Your Quilt</b>
Calculate the length—quilt top width plus 2 corners and an inch or 2 more: $45 + 2(2.5) + 2 = 52$ ".	52	
Cut & piece 2.5 inch strips together to achieve 2 strips of at least 52 inches in length.		
Nothing to sew to yet.		
No seam to press yet.		
<b>Middle Border – Mitered sides</b>	<b>Example</b>	<b>Your Quilt</b>
Calculate the length plus 2 inner corners plus 2 middle corners and an inch or 2 more: $54 + 2(2.5) + 2(1.5) + 2 = 64$ ".	64	
Cut & piece 1.5 inch strips together to achieve 2 strips of at least 64 inches in length.		
Matching centers, sew to the inner border sides.		
Press seams toward the middle border.		

\* images not to scale

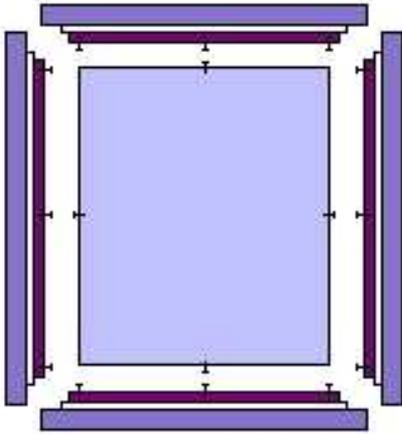
\*\* all measurements are in inches unless otherwise specified

Inner Border – Mitered top and bottom	Example	Your Quilt
Calculate the width plus 2 inner corners plus 2 middle corners and an inch or 2 more: $45 + 2(2.5) + 2(1.5) + 2 = 55''$ .	55	
Cut & piece 2.5 inch strips together to achieve 2 strips of at least 52 inches in length.		
Matching centers, sew to the inner border top & bottom.		
Press seams toward the inner border.		
Outer Border – Mitered sides	Example	Your Quilt
Calculate the length plus 2 inner corners plus 2 middle corners plus 2 outer corners and an inch or 2 more: $54 + 2(2.5) + 2(1.5) + 2(4.5) + 2 = 73''$ .	73	
Cut & piece 4.5 inch strips together to achieve 2 strips of at least 73 inches in length.		
Matching centers, sew to the inner & middle border sides.		
Press seams toward the outer border.		
Inner Border – Mitered top and bottom	Example	Your Quilt
Calculate the width plus 2 inner corners plus 2 middle corners plus 2 outer corners and an inch or 2 more: $45 + 2(2.5) + 2(1.5) + 2(4.5) + 2 = 64''$ .	64	
Cut & piece 64 inch strips together to achieve 2 strips of at least 64 inches in length.		
Matching centers, sew to the inner & middle border top & bottom.		
Press seams toward the inner border.		

\* images not to scale

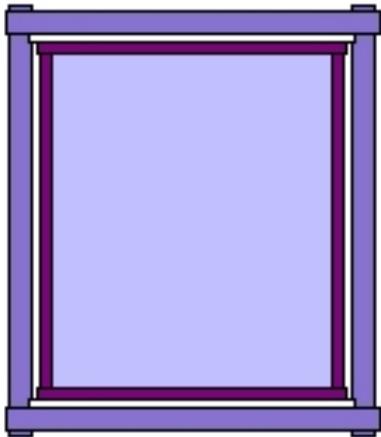
\*\* all measurements are in inches unless otherwise specified

Mark the quilt top and each border assembly with pins.



- ✿ Mark top and each assemble at the center.
- ✿ Mark each border side assembly with the **exact** quilt top length measurement.
- ✿ Mark each border top and bottom assembly with the **exact** quilt top width measurement.

Sew the border assemblies to the quilt top.



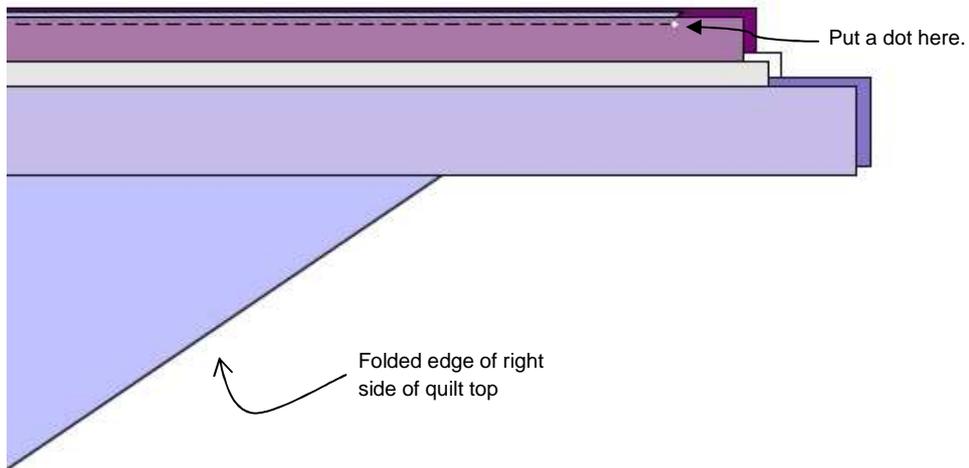
- ✿ Match centers.
- ✿ Align width & length markings of the border assemblies with the exact ends of the quilt top.
- ✿ Stop and start the seams  $\frac{1}{4}$  inch from the ends of the quilt top.

\* images not to scale

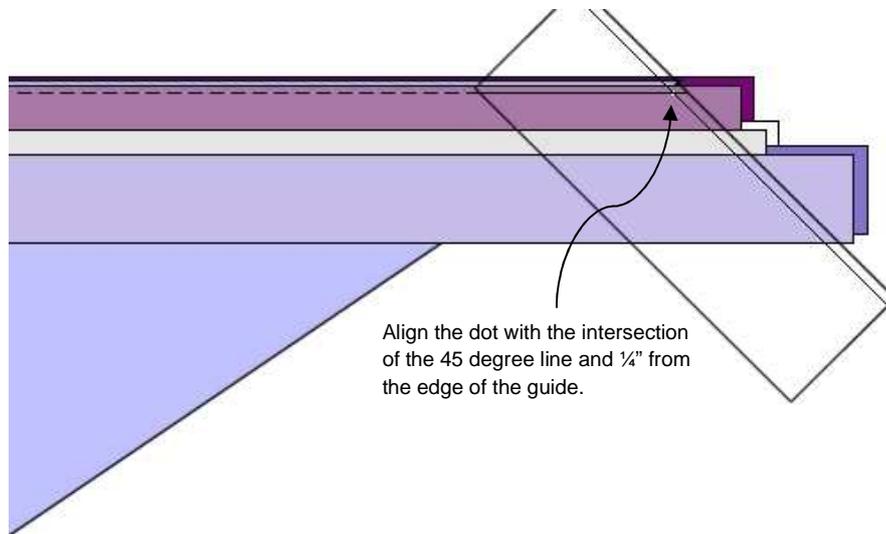
\*\* all measurements are in inches unless otherwise specified

Sew the mitered corners.

- ✿ At a corner, fold the quilt at a 45 degree angle, wrong sides together.
- ✿ Fold the borders back so that the right sides are against the right sides of the quilt top.
- ✿ Emphasize the end of the seam with a marking pen or chalk.



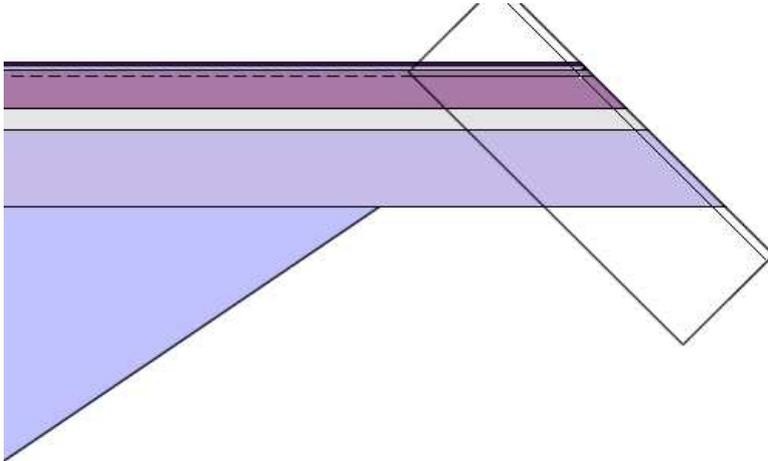
- ✿ Place the 45 degree line of your cutting guide along the seam.
- ✿ Align the marked end of the seam with the first 1/4" of the guide.



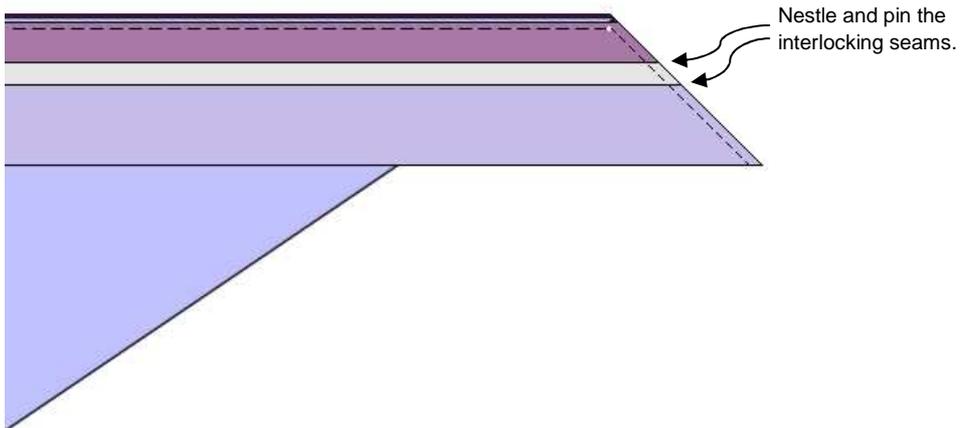
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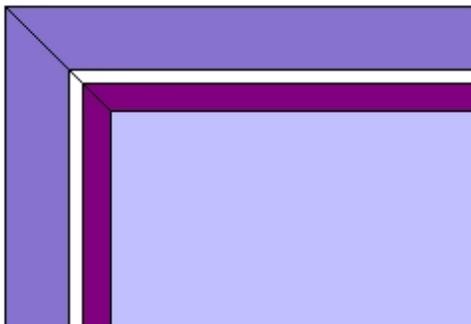
- ✿ Cut along the right edge of the guide.



- ✿ Nestle and pin the interlocking seams.
- ✿ Stitch a 1/4" seam along the right edge of the border.



- ✿ Press the miter seam open.
- ✿ Repeat for each corner.



\* images not to scale

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