## Non-Slip $45^{\circ}$ Kaleidoscope \& Dresden Plate Ruler

Cut patterns created with eight separate $45^{\circ}$ triangle units such as kaleidoscopes and Dresden Plate blocks. These $45^{\circ}$ triangles can also be pieced into a saw tooth border.

## CUT THE TRIANGLES FROM STRIPS OF FABRIC:

1. Choose the height of the finished triangle - from 1 " to $8^{\prime \prime}$. (Measure the triangle from top to bottom - not along one side). Add a $1 / 2^{\prime \prime}$ for the seam allowances. For example, if the finished triangles measure 3", cut a strip of fabric $31 / 2^{\prime \prime}$ wide from selvage to selvage. Remove selvages and straighten one end of the strip.
2. Place the ruler on the fabric strip, lining up the top of the ruler with the top edge of the fabric. The bottom edge of the fabric strip should be even with the appropriate marked line on the ruler. In our example, the fabric strip measures $31 / 2^{\prime \prime}$ so the bottom edge of the strip of fabric should line up with the $31 / 2^{\prime \prime}$ line on the ruler.

3. Cut along both sides of the ruler with a rotary cutter. (The end triangle can be trimmed to a $22 \frac{1}{2} 2^{\circ}$ triangle. See instructions on reverse.)
4. Turn the ruler $180^{\circ}$. Place the ruler on the fabric strip, lining up the top of the ruler with the BOTTOM edge of the fabric. The top edge of the fabric should be even with the appropriate marked line on the ruler - in this case, $31 / 2$ ". Place the side of the ruler on the cut, angled edge of the fabric.

5. Continue to turn the ruler and position it on the fabric strip, cutting a $45^{\circ}$ triangle from the fabric each time. If several strips are layered, multiple triangles can be cut at the same time.


## CUTTING $221 ⁄ 2^{\circ}{ }^{\circ}$ TRIANGLES:

$221 / 2^{\circ}$ triangles can also be cut with this ruler. These triangles are used to straighten and finish a row of $45^{\circ}$ triangles.


1. Cut the fabric strips the same width as the $45^{\circ}$ triangles (the finished height of the triangles plus $1 / 2$ "). Fold the strip in half and straighten the selvage ends.

2. Place the ruler on the fabric strip, lining up the top of the ruler with the top edge of the fabric. The bottom edge of the fabric strip should be even with the appropriate marked line on the ruler. In our example, the fabric strip measures $31 / 2^{\prime \prime}$ so the bottom edge of the strip of fabric should line up with the $31 / 2$ " line on the ruler. Line up the cut edges of the fabric with the LEFT vertical dashed line on the ruler.

3. Cut along the edge of the ruler. Each cut will make two $22 \frac{1}{2} 2^{\circ}$ triangles that are mirror images of each other. If several strips are layered, multiple triangles can be cut at the same time.


## Kaleidoscope Blocks:

1. Cut eight $45^{\circ}$ Triangles from a strip or a strip set of fabric. Choose the finished size of the kaleidoscope block (in our example - 12"). Divide the finished size of the block by 2 (12" divided by 2 = 6"). Add a $1 / 2$ " for the seam allowances. For example, if the finished triangles measure 6 ", cut a strip of fabric or piece a strip set $61 / 2$ " wide from selvage to selvage. (In this example, two $3^{½} 2^{\prime \prime}$ strips were sewn together before piecing the kaleidoscope.)

2. Sew eight of these $45^{\circ}$ triangles together to complete a $45^{\circ}$ triangle octagon.

3. Measure the base of the $45^{\circ}$ triangle. Cut two squares to this size and cut once on the diagonal. Center and sew the long side of each triangle to the four corners of the octagon. These triangles will be over-sized. Square up the finished block when completed (in this case $12 \frac{1}{2} 2^{\prime \prime}$ ).


## Dresden Plate Blocks:

1. Cut two strips of coordinating fabric the height of the "petal" plus $1 / 4$ ", in this case $23 / 4$ " (The finished Dresden Plate will measure $5^{\prime \prime}$ ). Cut four $-45^{\circ}$ segments from each fabric, lining up the $314^{\prime \prime}$ line on the ruler with the bottom edge of the fabric. The wider tip will result in a "hole" in the center of the plate when the segments are sewn together. This "hole" will be covered by a circle appliqué after the Dresden Plate is pieced.

2. Fold each segment in half vertically - right sides together. Press lightly. Stitch a $1 / 4$ " seam along the top edge.

3. Finger-press the seam open. Turn the segment right side out and center the seam line on the center fold.

4. Sew these eight segments together, alternating fabrics, to create the Dresden Plate. Press the seams open.

5. Appliqué a circle of fabric over the center hole (in this case, the center is a 1 " centered circle.)

6. Stitch the pointed edges onto the background square either by hand or machine.

