Making a Geometric Cutting Board

This is my original board and it's been used daily for about 12 years

Information and Details

- Cut List (all pieces are ¾" thick material):
  - 4 pcs 3/8" x 18" Walnut
  - 2 pcs 1 ¼" x 18" Maple (edges)
  - 2 pcs 1 ½" x 18" Cherry
  - 2 pcs 1 ½" x 18" Maple
  - 1 pc 2 ½" x 18" Walnut

Note

Wood sizes can be adjusted to make different size boards!

- Yields a board approximately 13" x 13"
- Use polyurethane (Gorilla) or yellow woodworker's (Titebond III) glue
  - Gorilla glue gives a little longer 'open time' and acts as a 'gap filler'
- Other woods can be used – it's best to use 3 contrasting colors
- The width of the pieces must be exact so the points match up when you cut and re-glue the pieces. I run the pieces on edge through my planner to assure they are equal widths.

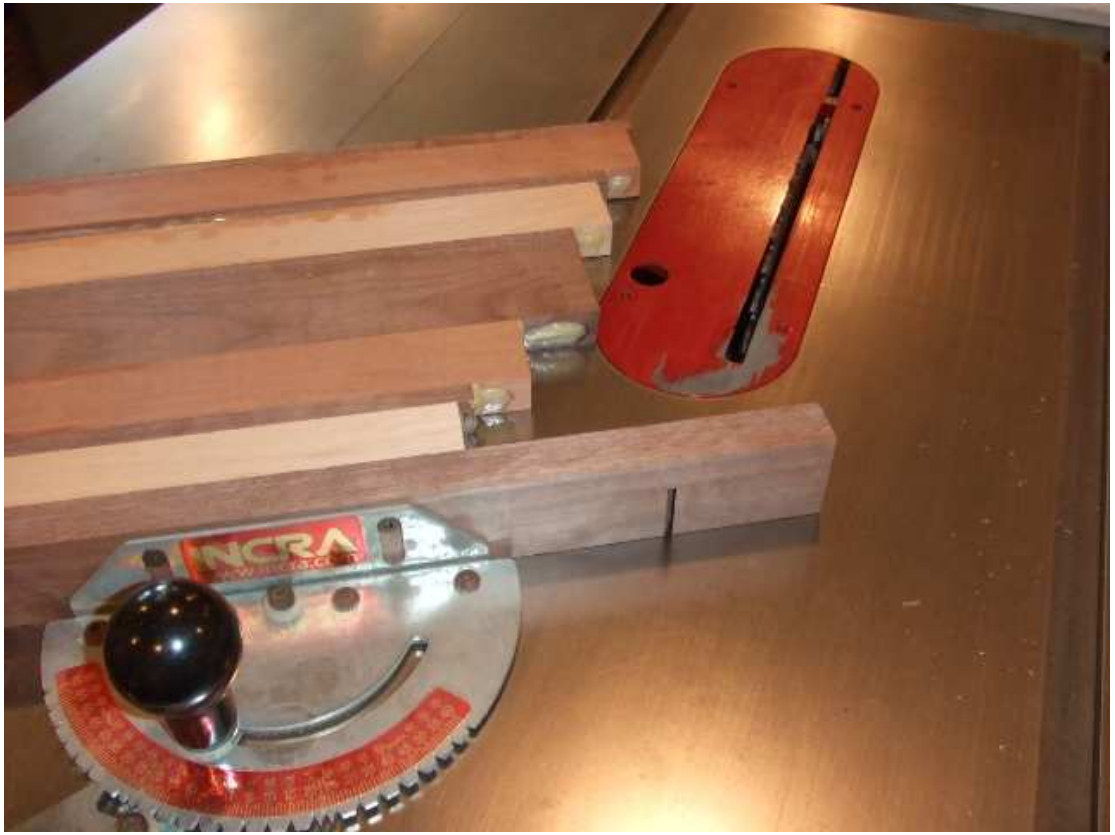
It saves a lot of wood if the initial glue up is done on a 60 degree angle. I drew a line on the gluing surface as a guide.

Plan on using a lot of glue (about 4 oz per board) and work fast (there are a lot of pieces to glue). Polyurethane (Gorilla) glue gives a lot more open time, it's easier to clean up the squeeze out and it won't gum up your sand paper if you use a power drum sander.

This is what the initial glue up looks like. Pipe clamps will work just as well. Notice that the maple and cherry boards are switched on each side of the walnut center board and notice where the small walnut boards are positioned.

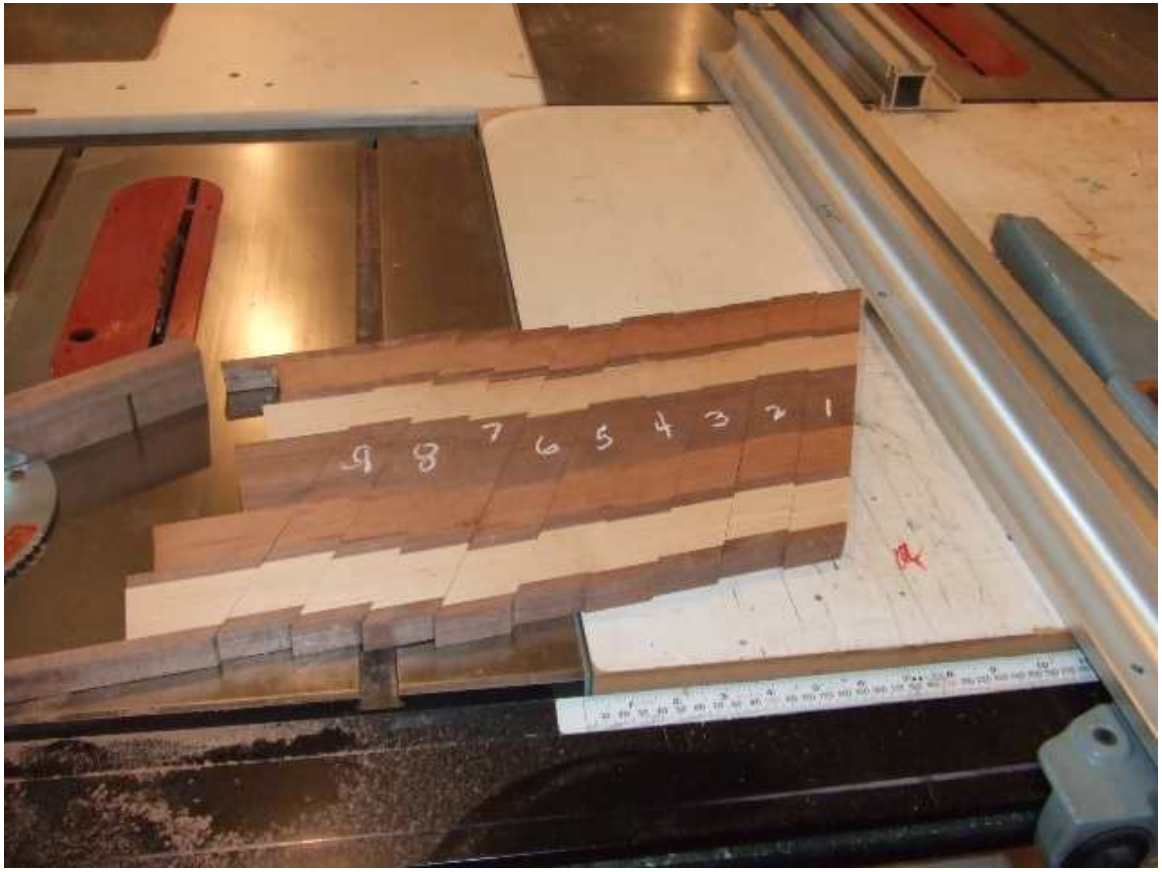
You can use a paint scraper or a chisel to remove the glue squeeze out. I used a multi-tool with a fine cutter blade (only because I couldn't find my paint scraper).

After you remove the glue squeeze out, cleanup the pieces by running them through a drum sander or planer to get the boards close to level (in case some of the boards shifted position while you were gluing them).



Set your miter gauge to 30 degrees, Use a long fence to support the large glue up and make sure the fence extends past the blade to support the cut off piece. Add a piece of sandpaper to the fence to keep the blank from shifting as you are cutting.

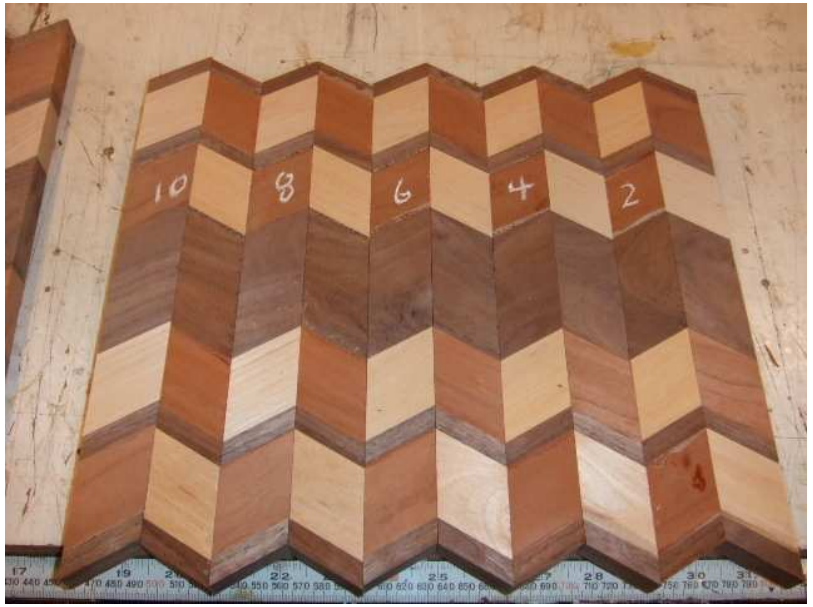
Keep the pieces in order as you cut them. Mark the fence (or use a stop) so that all the pieces are cut the same width (1 $\frac{1}{4}$" wide). Make as many cuts as you can from the blank (should yield 9 or 10 pieces).



Keep the pieces in order. I numbered them in the order they were cut.

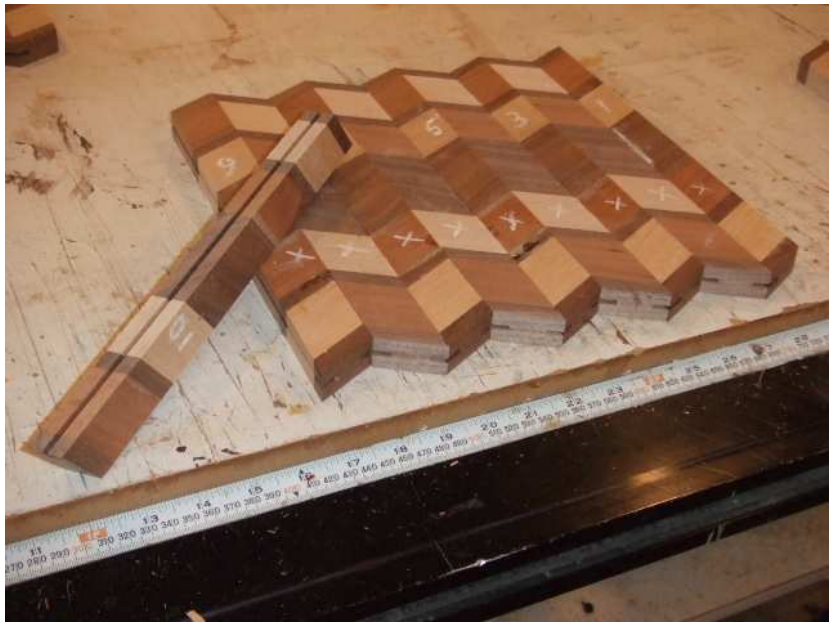
The final pattern will be determined by how you manipulate the pieces.

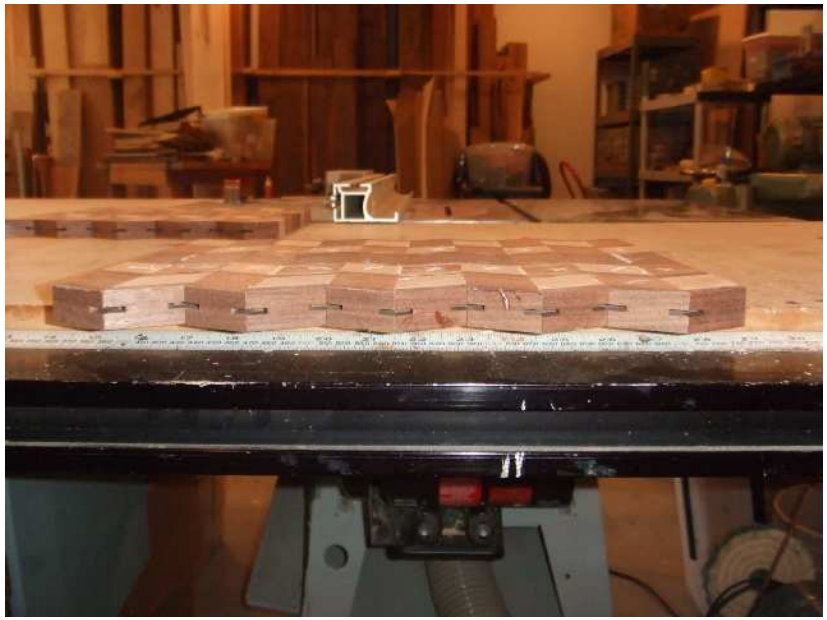
By turning every other piece over, you get this pattern.



By flipping every other piece, end over end, you get this pattern.

You have to cut spline grooves on the edges of each piece (only the inside edge of the two outside pieces). Mark the face side of each piece and mark the inside edge of each of the outside pieces. To keep the grooves lined up, keep the face side against the fence as you make each cut.

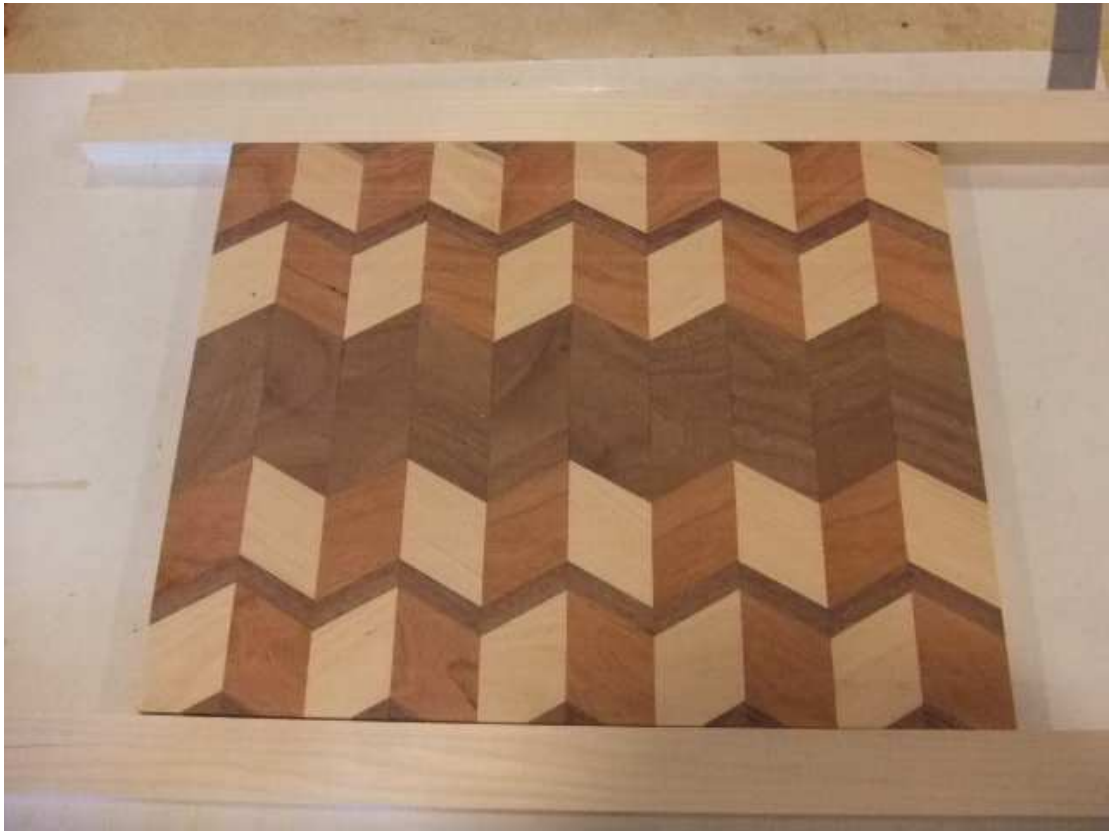




Cut splines to match the width and depth of the grooves. In this set, the grooves are 3/8" deep and I cut the splines 5/8" wide. My saw kerf is 3/32" wide (Forrest Thin Kerf blade). The splines are important because they keep the pieces aligned while you're gluing them and they add strength to the end grain to end grain glue joints

Glue the pieces together. Be sure to get plenty of glue in the spline groove and on the edges of each piece. Be very careful to align the 'points' of each piece and make sure they don't 'creep' when you clamp them.

After the glue dries, remove any squeeze out. Run the board through the drum sander or planer if necessary. Trim the 'points' by adding a temporary straight edge to the board and trim the 'points' on the opposite edge. Try to make the remaining points the same size on both edges.



Now add the trim boards to cover up the splined edges. If you use a drum sander or planer, make the trim boards 3" to 4" longer on both ends to minimize snipe.

Carefully measure the edge boards on one end and make them equal length when you glue them. This will make it easier to do the final trimming.

After the glue dries, run the board through the drum sander or planer. Now you're ready to trim the edges. Put the equal ends on the fence and carefully trim the other ends. Flip the board and trim the other end.

Route the edges and corners with a 1/8" round over bit. Sand the board to at least 220 grit.

The final look of the board will change with a different color edge.

Maple edge

12" x 13"

Cherry edge

12" x 12"

Apply a "food safe" finish to the board.

Most experts consider finishes like varnish or lacquer "food safe" after they have thoroughly dried.

On my boards, I spray or wipe 3 coats of lacquer, diluted 50% with thinner. I believe the lacquer finish does a better job protecting the wood and it lasts longer.

If you prefer an oil finish, use:

- Food grade mineral oil.
- Butcher block finish

Do not use vegetable based oils like olive or corn oil – they will turn rancid over time.