Cindy Drozda's Triangular Box

This design starts with a dry blank 3" x 3" x 3 _ "

1. Layout top and bottom of box
2. Mount blank between centers, taper to Blue (major) diameters, scribe ref. line
3. Part in to Orange (solid) diameters on ends to create chucking points
4. Chuck on bottom, part off the 1" long piece that will be made into the top of the box.
5. Hollow, sand & finish inside of box. Create lid recess 1 3/8" – 1 5/8" diameter.
6. Chuck on lid, cut tennon to fit recess in box. Hollow, sand & finish inside of lid
7. Glue lid and box bottom together with thin line of glue, lining up ref line
8. Turn multi-axis triangle using the 3 centers on the Green diameter
9. Sand the outside of the box completely
10. Mount on center point and cut in to separate box halves
11. Jam fit both lid and base onto waste blocks to complete shaping

    -or-

    Re-cut chucking point on large end, chuck to tool bottom and separate halves of box, jamfit lid to finish.
12. Sand, finish, and sign your work

Done!

These layouts are for one specific size and shape of box, but many variations on this concept are possible. It can also be adapted to make items other than boxes. Try peppermills, vases, accent trim rings, bowls, tool handles, candle holders, etc. The possibilities are endless!

Here's how I determined the relationships in the layout

(this formula works in this size range, and may (or may not) work the same way in much larger layouts):

Starting with the largest diameter available in my blank:

1. Multiply the major (Blue) diameter by .77 to get solid (Orange) diameter
2. Subtract _ " from the Orange diameter to get the centerpoints (Green) diameter

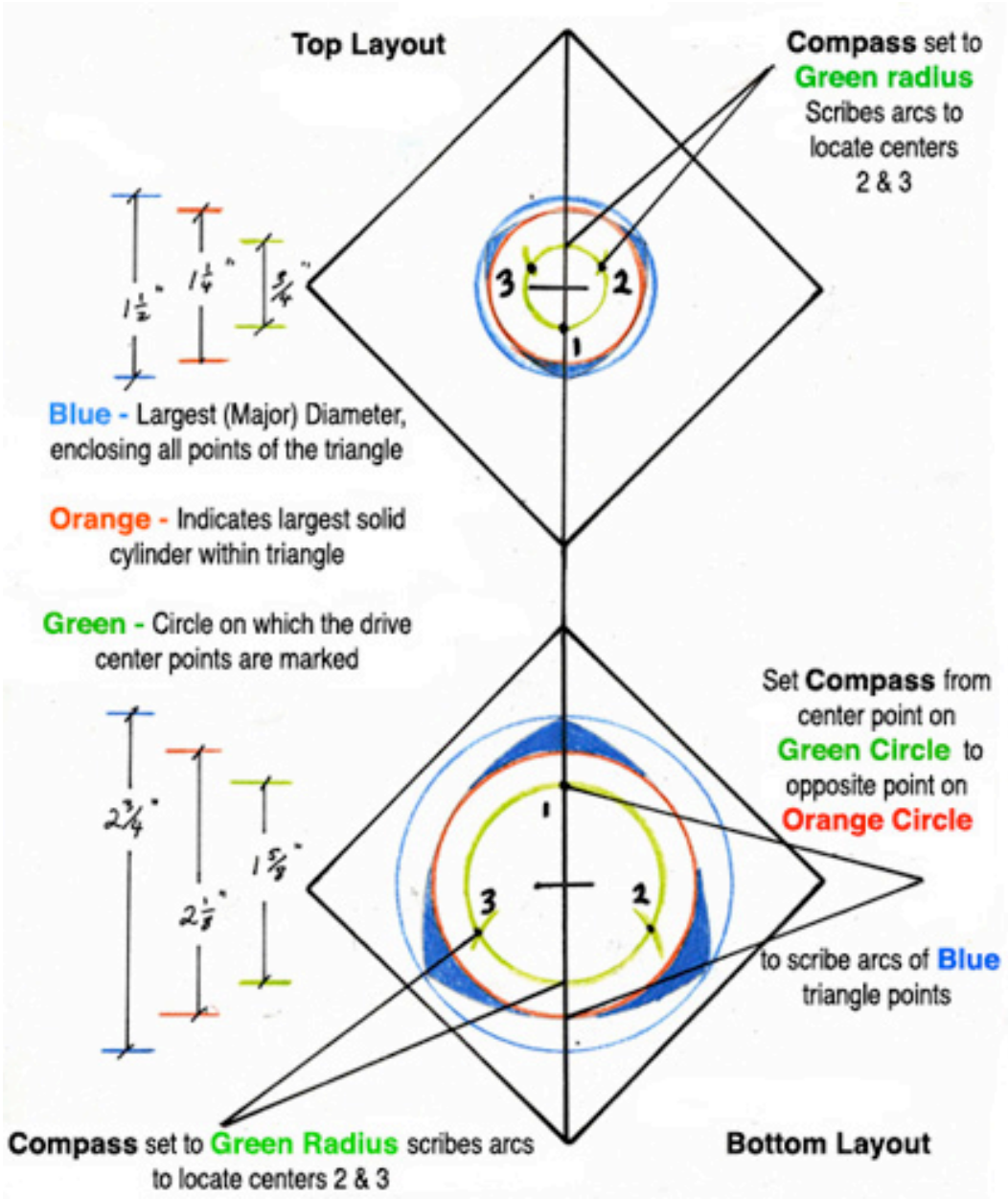
Starting with the smallest possible chucking point diameter that my chuck can use:

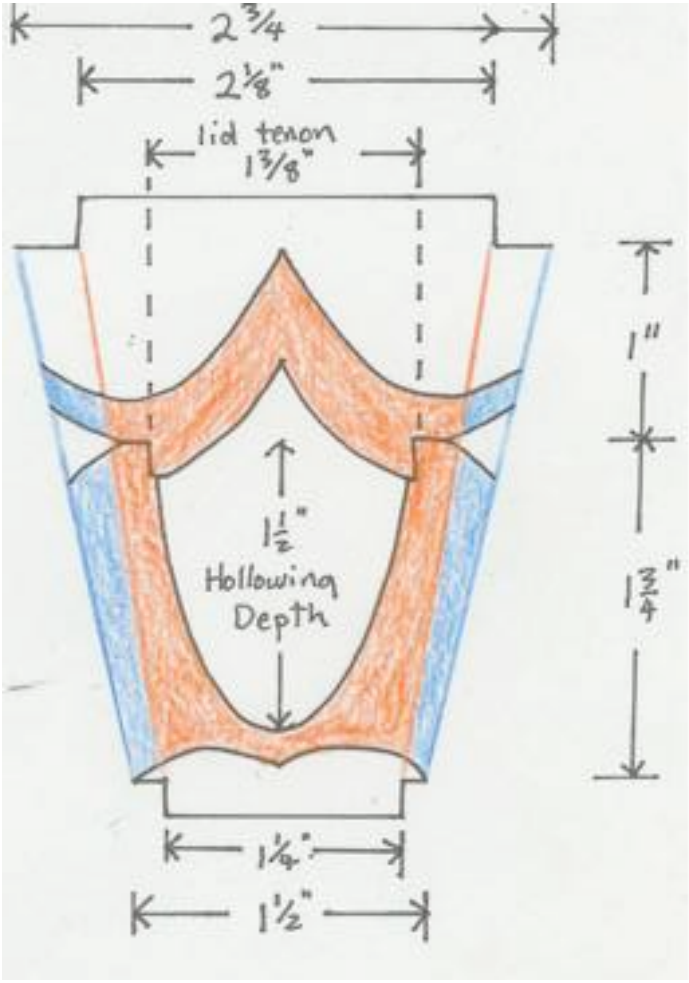
1. Multiply the Orange diameter by 1.3 (or divide by .77) to get the Blue diameter
2. Subtract _" from the Orange diameter to get the Green diameter

Other things I have discovered:

1. The larger the radius of the outer arcs, the more "triangular" the box appears.
2. The smaller the radius, the more like a circle it looks
3. Centers outside the finished piece does work, but presents more of a challenge and wastes wood
4. Centers within the corners also works, but planning is required and chip-out is more likely
5. If the design of the box doesn't fit within the Orange cylinder, the hollowing will cut through the sides. This could be either a good thing or a bad thing!
6. Other numbers of centerpoints are also possible using the exact same ideas. 6, 4, and 8 are easy to figure out. Don't feel limited by symetrical points!
7. If the centerpoints 1,2, &3 are shifted in relation to each other, you will get a "twisted" triangle (or whatever). This looks cool but is a lot harder to sand.
8. This same idea works well by only shifting the centerpoints on one end of the block, also. It makes the taper more dramatic.
9. Try tapering in more than one direction on the same piece! More planning required, but an interesting result. Also try tapering from top to bottom instead of from bottom to top.

Triangular Box Layouts





Blue = "Points" of the triangle

Orange = Solid material to design box within