

# How to make an Octagon shaped hat box



Once you have been making and wearing costumes for a while, you will begin to see the need for having boxes for storing and transporting hats. If you also purchase vintage hats, you see the need for them even more. You want a place to keep them safe and in good condition. This means making acid free, as well as structurally sound containers. Acid free storage boxes can be purchased, but they are expensive and they do not have handles. So, making your own is a good option. The majority of the time spent in making a hatbox goes into covering it with fabric, but that is also the fun part, and the bonus is that each box in your collection can be made to match your outfit and fit your hat.



This box was made with black board and just the base and the lid where covered with fabric. The base fabric was left over from the hat.



I like making hats with removable feathers that way the feathers can be tucked into the box with the hat and you don't need an over large mostly empty hat box. To wear the hat once the feathers are slipped into place just a quick tack stitch can hold them in place while you are wearing it.



When I started making hatboxes, I started making oval or round boxes. This worked out fairly well. But most of my students found the shaping of the sides into a round somewhat difficult, and sometimes ended up with creases in the board during the process. A friend gave me a 50s Era hat in an octagon shaped box and I noticed that the box top and bottom were the same, except for one thing, the bottom was glued in place. It had another great feature, when sitting on its side it did not roll away. This is really important with large hatboxes. One of the things I could never find in a commercially made hatbox was a hatbox large enough around and tall enough for my Romantic Era bonnet.



I chose to include my pattern for the Romantic Era bonnet box (16"X10") in this article. But, if you want to make another size box, it is important that the top and bottom be between 1/8 and -" wider across than the sides. Less if you have thinner fabric and more if you have thick fabric. You can have the sides of the lid and the base anything from 1.25 to 2". That of course is added to you original octagon plus the 1/8 to -" extra. This large hatbox can be used to store nested hats as well, if they are loosely wrapped in acid free tissue paper. I can pack three hats into this 16"X10" size box.



Hatbox plus 3 1990's hats.

*The hats are lightly wrapped in acid free tissue paper and packed into the box. The brown hat with the standing bow is set upside down so that the bow can fill the extra space along one side of the box. The feathers are removed at added to the top of the box. This makes it easy to check the feathers every so often for insect damage.*



## Tools and Materials

You will need: kitchen shears, fabric scissors, a scribe (embossing stylus or bone folder), a non skid straight edge (at least 12"), 8oz. of an acid free white glue (Elmer's or PVA), a 1" glue brush and a container (cup or bowl) for your glue brush, 16 binder clips (1.25 inch wide) or clothes pins, one or two tassels (optional), 1 1/2 yard of 1/4 inch cord (it needs to slide easily thru a 00 size grommet), 4 grommets 00 size, grommet setting tools, hole punch, and artist tape (this is a good quality repositionable tape). Note about the glue: You can get acid free PVA glue at many art and craft stores, but it can be expensive. So, look for the less expensive brands of acid free white glue like Elmer's.

## Board

You will need: one sheet of acid free 4 ply museum mounting board plus a scrap that is at least 14 by 10". The framing store where I purchase my board has a board cutter that lets me pre cut my 40" by 32" board into my long pieces and the two squares. Cut two 18.75" squares and one 40" by 10", plus the extra piece at 14" by 10". But, if you can't find a store that has self-service cutting, you can cut the large board with a utility knife or razor blade cutter and a long straight edge. This type of board comes in black and white, so the photos that follow show some of the steps with a black board and some with a white. I would like to thank Stephanie and Gail for making boxes while I took pictures. The black board is more expensive, so as a rule, I use white. Also, if acid free is not your main concern, then you can use a 3 ply board that is acid free on the two surfaces but not in the middle. It is about 1/2 the cost of the white board and is a little easier to cut.

## Fabric

You will need: one piece of fabric 54" by 12" and two 21" by 21". If you chose a fabric that does not come 54" wide, you can sew two lengths of fabric together. Tightly woven Home Décor cotton fabric is best. It is very important that the glue does not leak thru the fabric, so pre test your fabric. As an option to fabric, you can cover your box with wallpaper or rice paper. In fact, any paper as long as it has a "high rag content".

## The pattern

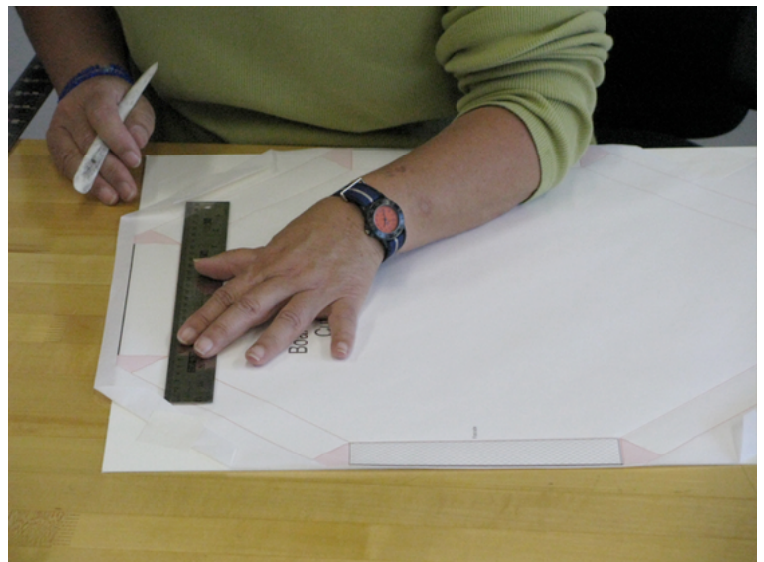
I have broken down the pattern so that it can be printed out with a regular page size printer. That means, you will have to print out 8 of each page for the top and bottom and 6 for the sides, carefully trim them, and then tape together. To make sure that your printer is on scale with my printer, double check the reference squares on each page before you print out 8 copies. To save paper, you may print out only 4 pages, and cut your fabric on the fold. You could do the same for the board pattern, but because the folds of the box sections are more critical, you need to double-check your alignment.

## Board instructions

Up until the sides are added to the base (step 20), both the top and the base follow the same instructions. Therefore, you can complete both at the same time, or do all the steps on one piece at a time.

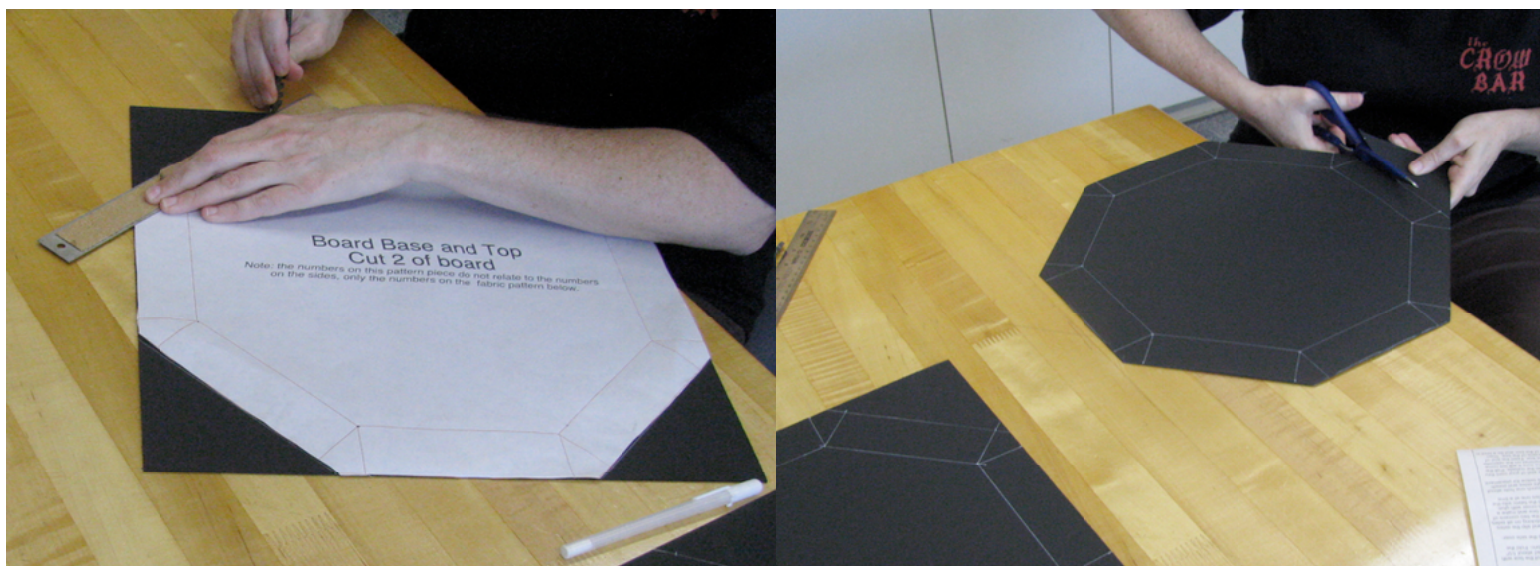
## For lid (top) and base (bottom)

- 1) With the pattern taped in place over an 18.75" square of board transfer each of the red lines to the boards with a scribe and straight edge creating a dent. The deeper you make the dent, the easier the board is to fold. However, it is important not to rip your pattern. The scribed side of the board will become the inside of the box.

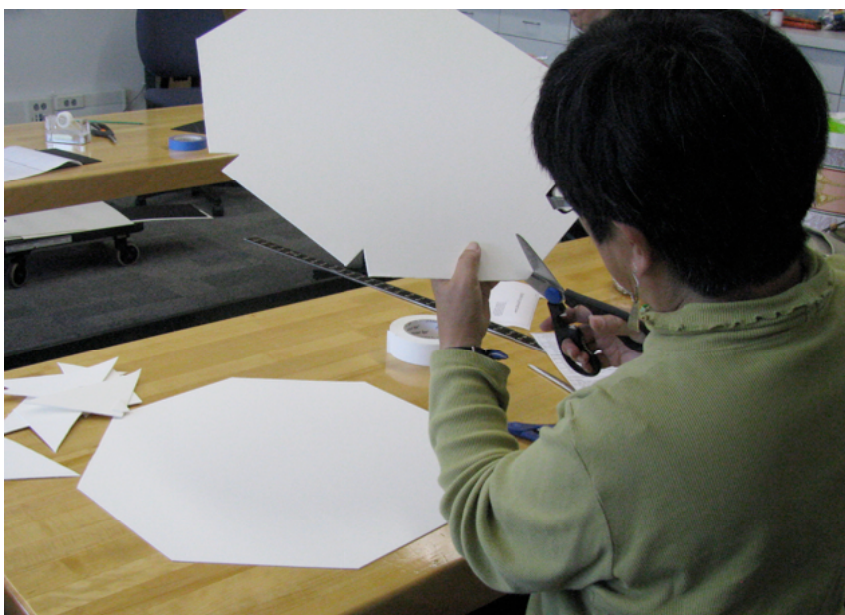




- 2) Mark, then cut away the 4 corners of the square board that go past the pattern to form an octagon with kitchen shears or a razor blade cutter and your straight edge.



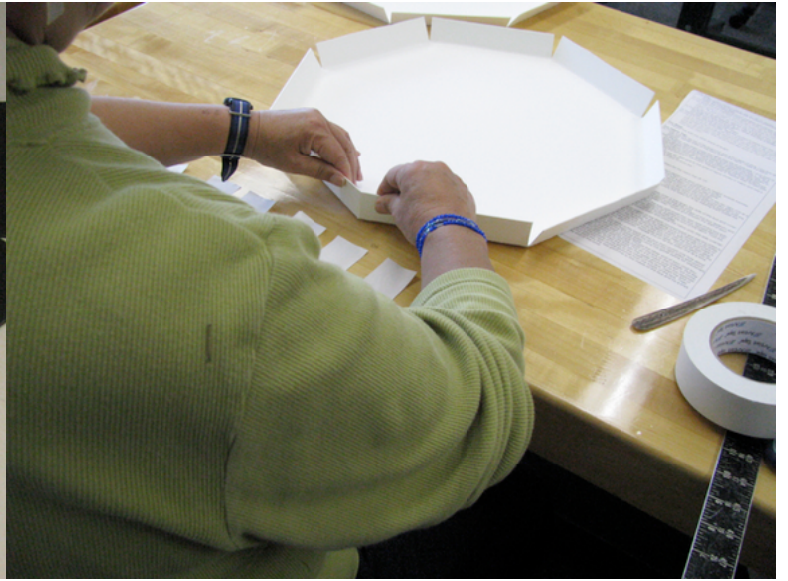
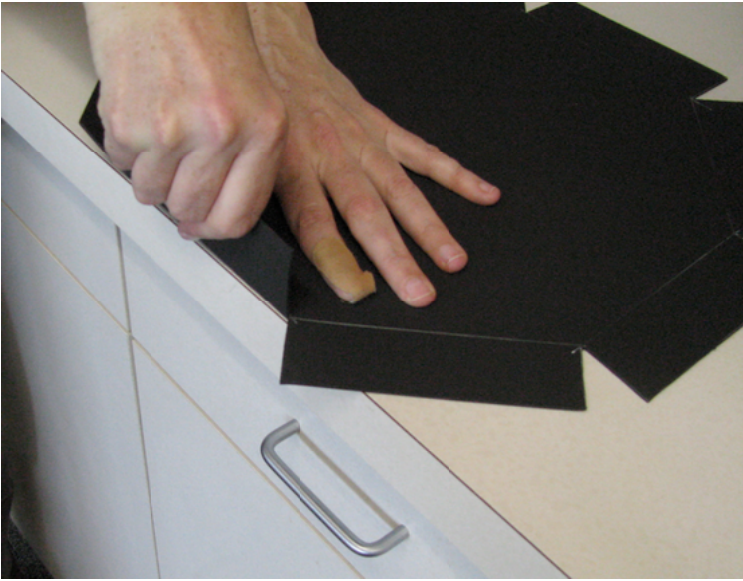
- 3) Cut away the pink "V" shapes.



With the dented side of the board facing you, fold along the dents between the "V" cuts. It is best to line up the dents with the edge of a table and push down. When the side is folded down about  $45^\circ$ , then fold it up to its final  $90^\circ$  (picture next page).







5) Repeat this with the remaining 7 sides.

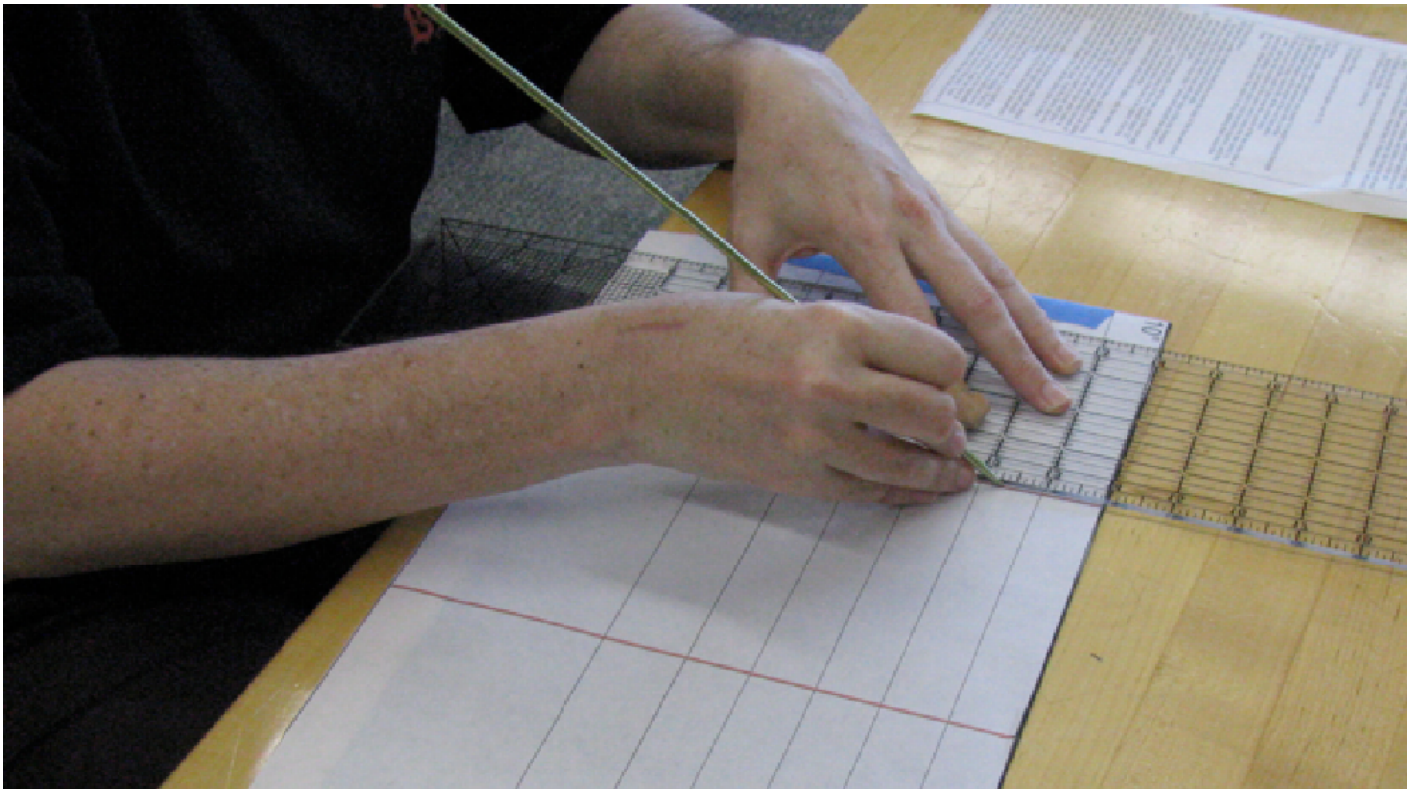
6) Use 4" long pieces of "artist tape" to tape the corners in place from the outside.





### For sides

- 7) With the paper pattern taped over your “precut to height” boards, transfer the red lines with a scribe to the long board, sides 1-6. Repeat with the short piece. Scribe both the red and outside lines for the tab to create the short section, sides 7 & 8.

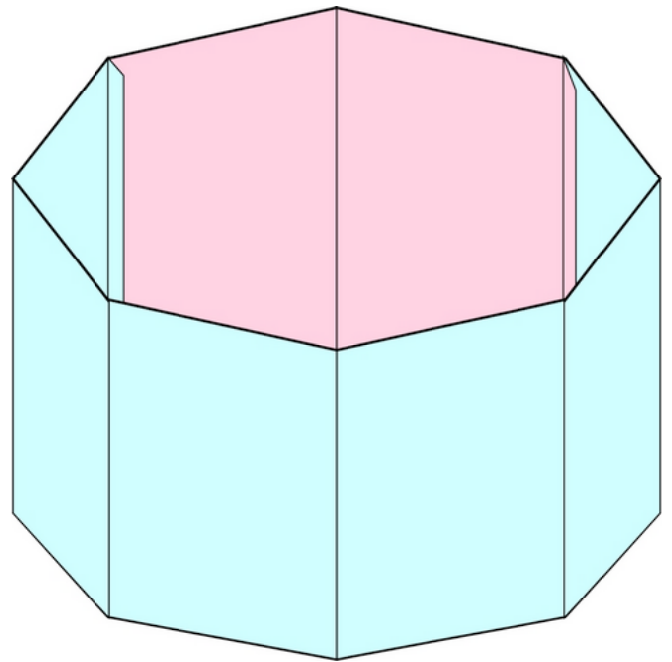


- 8) With kitchen shears, cut the triangle edges of the end tabs away.
- 9) As described in step 4 above, fold all the corner lines.





10) Brush an even, but thin, coat of glue over the outside of the two tabs. One at a time, join the two sections of the sides (one 6 sides one 2 sides) to make the full octagon. Use binder clips to hold the sides together until the glue is dry. When dry, check the sides for fit by slipping them inside the base, but do not glue in place.

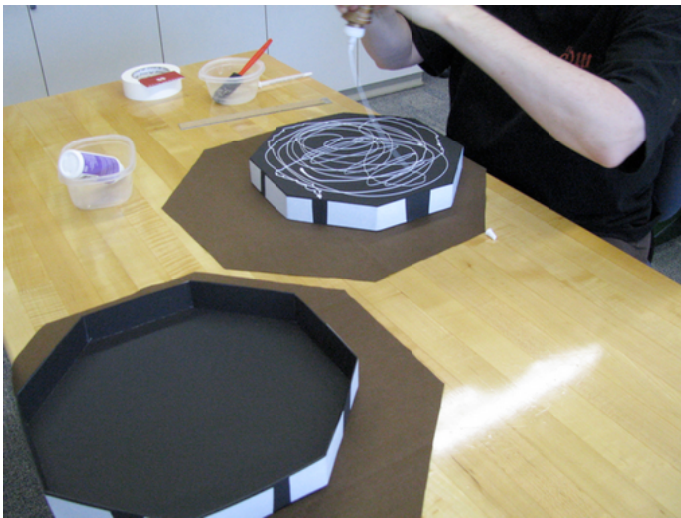


### Fabric instructions

Cut two pieces of fabric using the larger octagon pattern piece and one long piece of fabric 54" by 12". Up until the sides are added to the base (step 22), both the lid and the base follow the same instructions. Therefore, you can complete both at the same time, or do all the steps to one piece at a time.

### For fabric lid and base

11) Cover only the flat top of the board, lid and base, with a thin layer of glue and spread it with a brush or credit card.





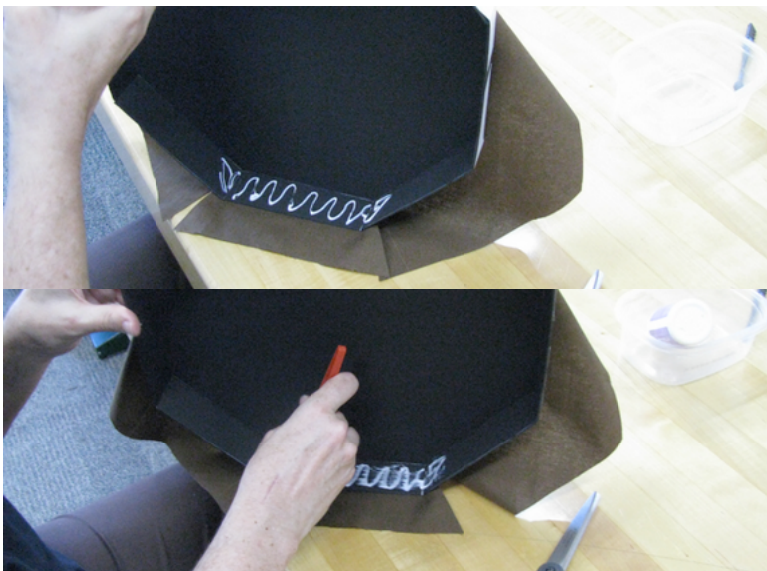
Flip the board over onto the center of the fabric, and line this up with the dashed lines on the backside of the fabric. Press the fabric smooth.

- 12) With the fabric side down, rotate the fabric and top so that side 1 is in front of you. Clip the fabric along the lines to the left and right of side 1. Hold this fabric against the sides of the box and mark the box where it is covered with fabric.



Lay the fabric back down, and with a brush, spread glue over the outside of the first side.

Fold the fabric up and smooth it in place.



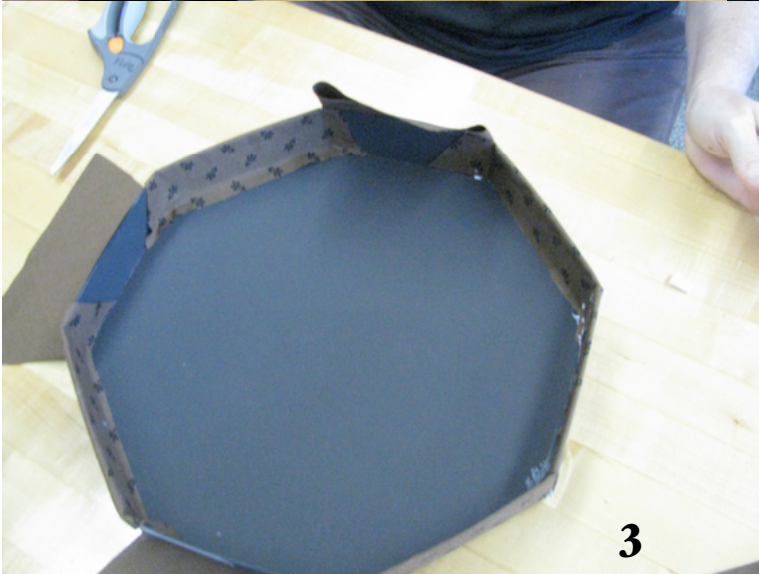
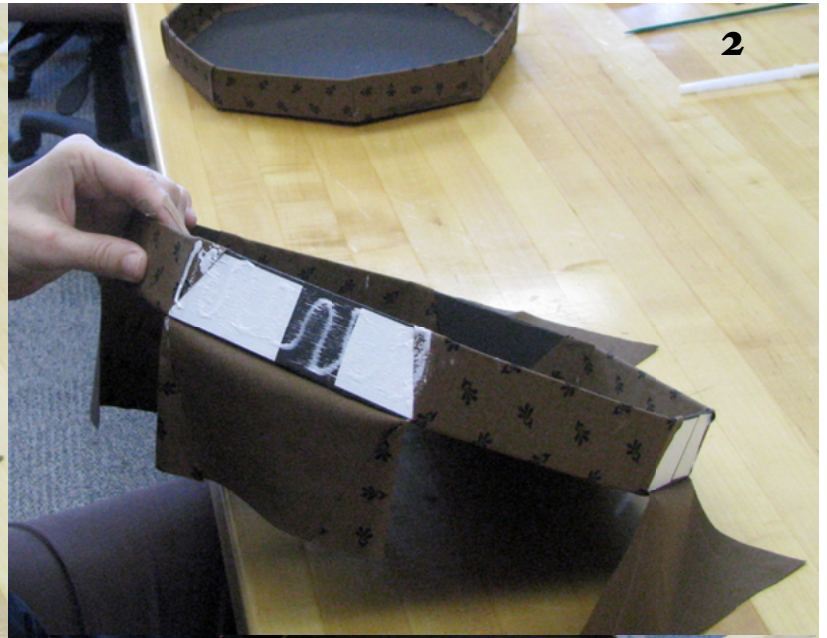
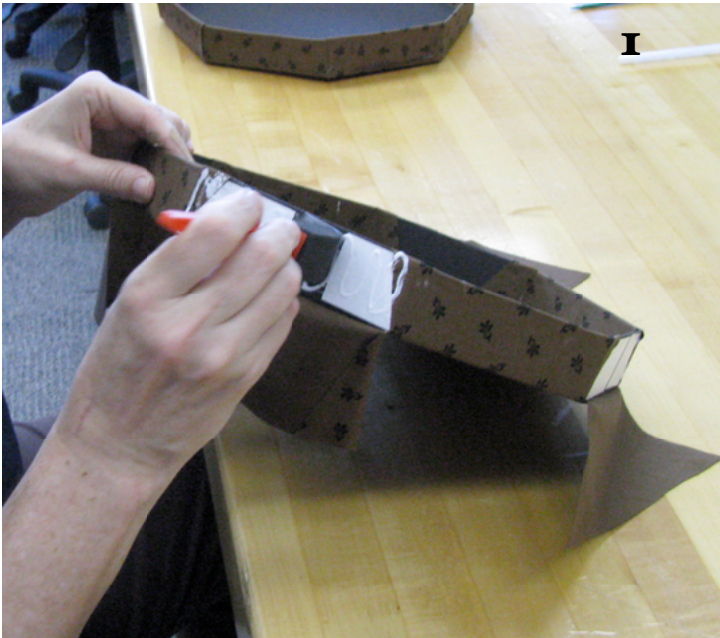
Spread glue in the area of the inside of the first side, press and smooth the fabric in place. Note: the gluing of the overhanging fabric is important, as it will be what really holds the sides together on the lid. The tape will not hold the box together long term.



13) Rotate the top around 90°. Make sure your marked clip lines are still lined up with the corners of the board. Repeat steps 12 and 13 two more times until every other side is covered.



14) Press the corners of the fabric along the blue line. Glue the area of fabric shown on the pattern in hatching, and fold it along the blue line.



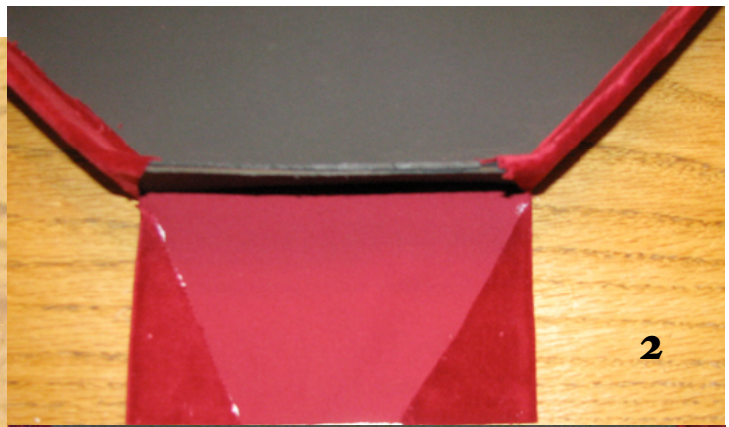
15) Finish gluing the fabric onto the remaining box sides as in steps 12 and 13.

If you know for sure that you have a fabric that does not let the glue seep thru, then I think it is better and faster to add glue to the fabric, and not the box. On the next page are photos showing steps 14 and 15 show where one adds the glue to the fabric.





Here are photos showing steps 14 and 15 show where one adds the glue directly to the fabric and not to the box.



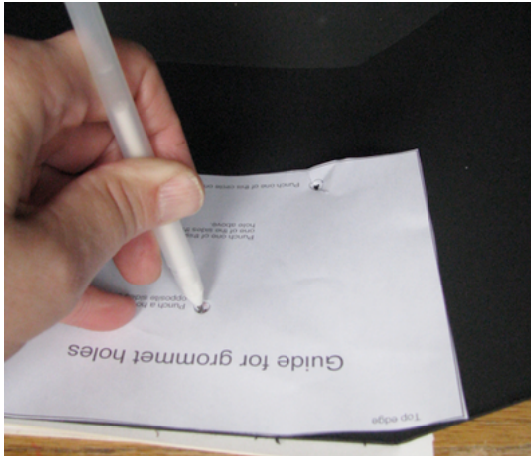
### For fabric sides

- 16) Near the center of one side, draw a line down the side. Add a line of glue about 1/2 inch wide along this line.
- 17) With one long side of the fabric, even with one edge of the box (bottom), and overhanging the other edge (top), press and smooth the start of your fabric piece into the glue.
- 18) Fold the fabric back out of the way, and cover bottom 1" of the remaining sides of the box, one at a time. Smooth and stretch the fabric to cover the sides as you add glue to them. When you get back to the first side, spread a swath of glue about 1/2" wide onto the wrong side of the remaining fabric. Fold the fabric under to create a finished edge.
- 19) Brush glue over this folded edge, and press the fabric onto the side overlapping the start.
- 20) Add glue to the inside edges of the fabric covered base, and slip the sidepiece of the box in place. Press the sides of the base and the box into the glue making sure it is sticking on all sides.





21) Lay the box on one of its sides, clip the fabric even with the two corners of the side that is on the table. Fold this up into the box to see how far it will come. Fold the fabric back and cover this area with glue. Then, fold the fabric over the glue and smooth. Repeat this on all the sides one at a time around the box. (this photograph was taken without the base of the box in place so that you can see what she is doing.)



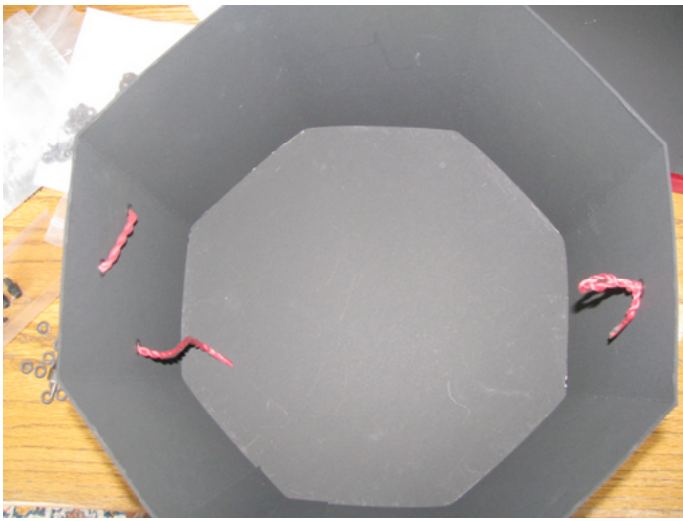
22) If the side with the seam is the back of the box, then punch one hole about 2" down from the top edge on both the left and the right sides (two side panels over from the center back). Punch two more holes on one of these sides using the guide below for placement.

23) Set grommets over each of these holes. Sometimes in smaller boxes or spaces that are limiting, I use my mallet sideways to set the grommets.



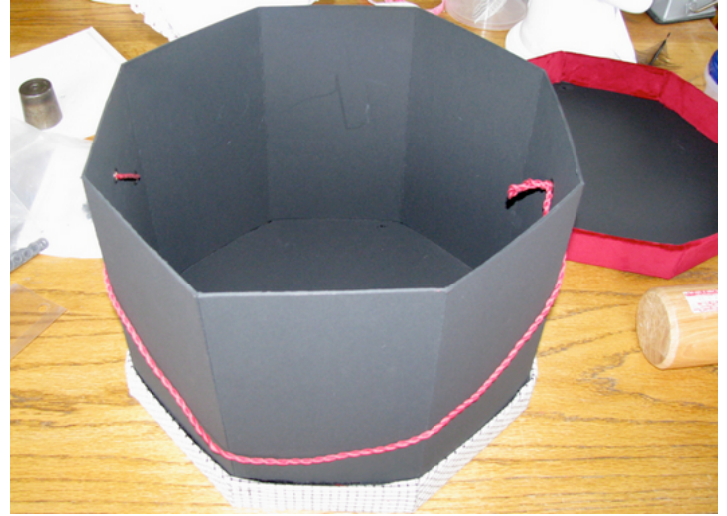
24) Tie a knot in one end of your cord. Thread the other end of your cord thru the single grommet side from the inside of the box to the outside. Pull the cord all the way out up to the knot. Give it a light tug to make sure it will not come thru the grommet.





Thread the end into the upper grommet on the opposite side from the outside of the box to the inside of the box. Feed the end of the cord through the next closest grommet from the inside of the box. Then feed the cord through the last grommet to the inside of the box and tie a knot in the end of the cord.

The section of the cord that holds the lid on has to be long enough to go around the side of the box.



*Note: If you are not going to cover your box with fabric, cut only one red line of the pink triangles on the base and lid. The pink triangles will need to be folded along the other red line to form tabs that will be glued to the adjacent side to hold the corner together. Add glue to the outside of one pink triangle tab, then with the attached side and the adjacent side folded up at 90°, push the tab into place (on the inside of the box) and clamp it until it is dry. Repeat with all 8 sides. Trim off any board that sticks up over the edge with a razor blade cutter when completely dry.*



You can redraft this pattern to make most any size and height of box. The small one on the left is the pattern size and the large one is the largest possible one that you can make from a standard size sheet of board. The one above is only two inches tall made to fit an 18th C brisé hat.