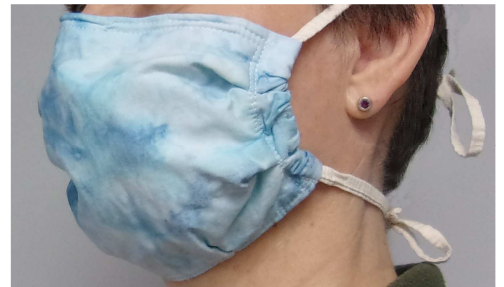


# Fabric Mask with Modifications<sup>®</sup>

## Basic Instructions

*Wired for fit across nose, all-fabric ties for custom fit behind ears or behind head & neck, washable, reusable.*

*Instructions include modifications for 1) an inner pocket to hold an extra filter layer, 2) a flannel lining, 3) a ridge to hold mask away from the face, and 4) child-sized masks.*



### **Important:**

- Start with freshly washed fabric.
- Wear a mouth/nose covering while working.
- Wash your hands thoroughly before starting.
- Sanitize your work surfaces and tools.
- **Note: Wearing a mask in public is not a guarantee of safety. Keep appropriate distance, wash hands often, avoid crowds, etc.**

### **Time to complete:**

With basic sewing skills, about 30-40 min at first, then maybe 20-25 minutes once you have made a few and gotten the hang of it.

**Materials cost:** Approx. \$3

## Tools & Materials Needed for One Adult Mask:

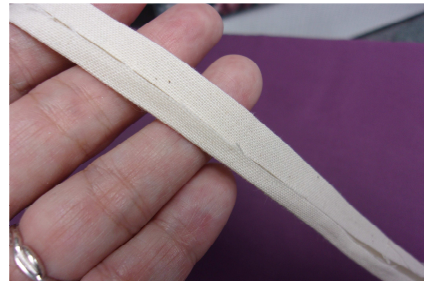
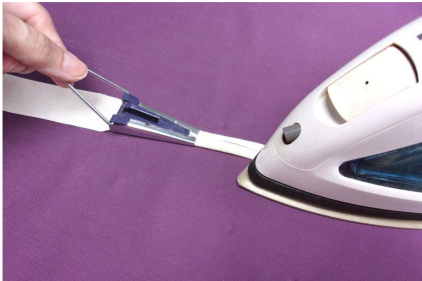
- One 7" x 18"\* piece of quality 100% cotton fabric for the mask (*Batik or other tightly-woven, sturdy cotton works best. Batiks have no "wrong" side which is handy.*)
- Two 30" x 1" pieces of lightweight cotton fabric for the ties. (*I use inexpensive muslin.*)
- (*Optional but helpful*) 12mm binding maker.
- (*Optional but helpful*) Rotary cutter, mat & ruler. Otherwise, sharp scissors and ruler or tape measure will do.
- Safety pin, tube turner or small bodkin (*for pulling ties through side casings.*)
- 6" piece of thin, flexible insulated copper wire. (*In a pinch, a pipe cleaner will do but they are fragile and will not hold up for long. Copper doesn't rust and insulated coating withstands high heat so it holds up well over multiple washings.*) I use twisted red and white insulated doorbell wire from the hardware store. Untwist and use white wires with light colored fabrics, red wires with dark fabrics.
- Wire cutters
- Iron & ironing surface
- Thread, pins
- Pen or water-soluble marker
- Sewing machine. (*I recommend using a "walking foot" if you have one.*)



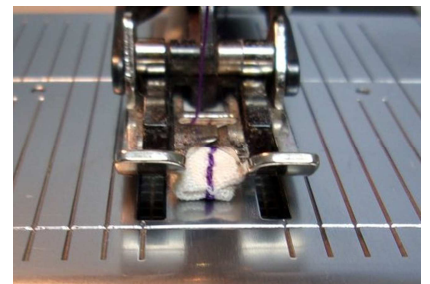
\* Once you've made and tried out one mask, you can adjust length and width of cotton to make masks that are larger or smaller as needed. Same with tie lengths.

## *Making the Ties*

1. Put the 1" strips, one at a time, through a binding maker and iron to create two inward folds, each long side folded to the middle. *(If you don't have a binding maker you can pin or carefully fold the strip by hand, ironing as you go but **BE CAREFUL NOT TO BURN YOUR FINGERS!**)*

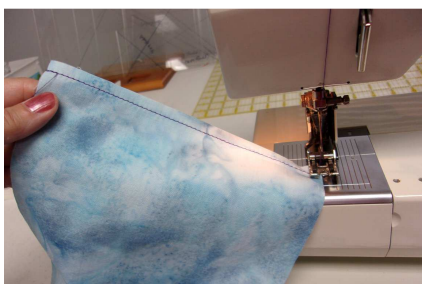


2. Fold the prepared strips in half lengthwise, stitching closed along the folded edges as you go. For a more finished look to the ends, you can fold the raw edges of the ties inward before stitching the edges of the ends closed. Make a backstitch to secure the ends. *(Personally, I find it difficult to start with a turned-in raw edge. It tends to get pulled into the footplate hole or caught up in the walking foot so I start sewing a few inches down from the far end, finish the end as shown below, then turn the tie around and finish the end where I started.)*



## *Preparing the Mask*

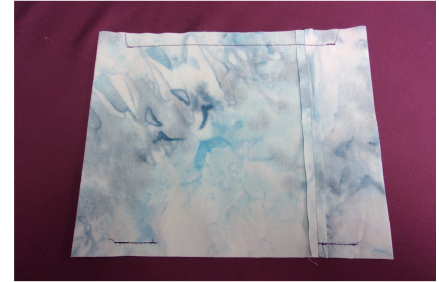
3. Take your 7" x 18" rectangle and fold it in half, right sides together, matching the two 7" short ends. Stitch a 1/4" seam along the short ends to create a tube. Place the seam off-center of the tube so the seam won't irritate the wearer's nose. Iron the seam open.



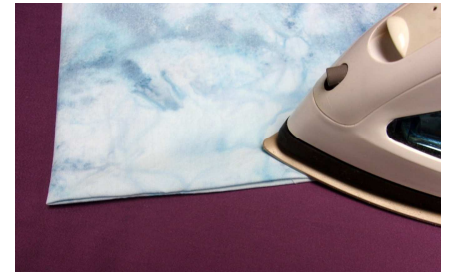
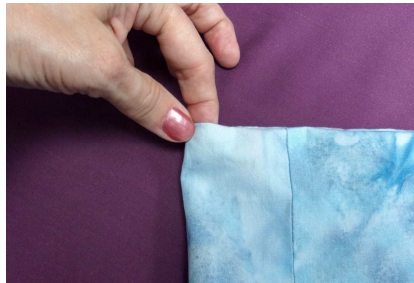
4. If there is an “up” side to the fabric design and a “down” side, determine which long side of the mask will be the top. Starting and stopping about  $\frac{3}{4}$ ” from the folded ends, stitch a  $\frac{1}{2}$ ” seam across the top of the mask. (*The reason you don’t stitch all the way to the folded ends is because you need to leave openings for a “casing” or channel that will enclose the ties later.*)



5. Along the bottom of the mask, again starting about  $\frac{3}{4}$ ” from each folded end, stitch two  $\frac{1}{4}$ ” seams about  $1\frac{1}{2}$ ” toward the center, leaving an opening in the middle to turn the mask inside out.



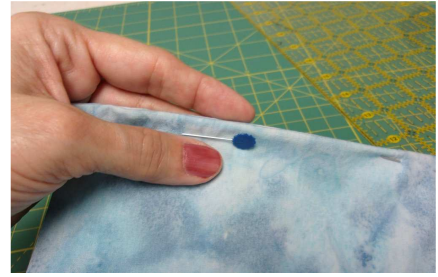
6. Turn the mask inside out, then pull up the fabric from inside the casings at the corners to make the corners square. (*Tip: Keep hand sanitizer nearby and moisten your fingers to help get a grip on the corners as you pull them square.*) Iron the mask flat, turning the edges of the opening up and in to make a clean, straight edge along the bottom.



7. Place the mask front side down—the front will be the side without the seam that closed the tube—on a table with the opening toward you. Insert the 6” wire UNDER the  $\frac{1}{2}$ ” seam allowance at the top of the mask. (*You want to keep as much fabric as possible between the wire and the wearer’s face.*)



8. Flip the mask over—front side up—center the wire across the top of the mask and pin the wire in place so it's snugged up firmly to the top seam.

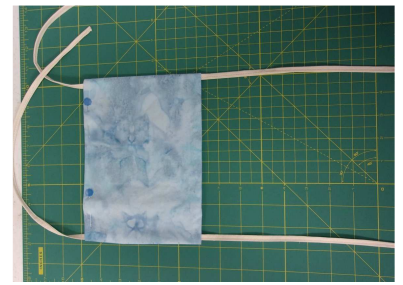


9. Using a pen or water soluble marker, make four marks along the edges: 1" down from the top edge, 2¼" down from the top edge, 1" up from the bottom edge and 2¼" up from the bottom edge. (You'll save time if you make a template so you don't have to measure each time.)



### ***Inserting and Securing the Ties***

10. Catch the end of a tie in a safety pin, tube Turner or small bodkin to give you a grip, and work one tie through each of the open channels along the sides of the mask. Pull each tie so that 10" of tie is exposed at the bottom of the mask.



11. Nudge the ties all the way to the outside edge of the casing, pin the ties in place and make a few anchor stitches in the center of the side edge so ties don't work their way out in the washing machine.

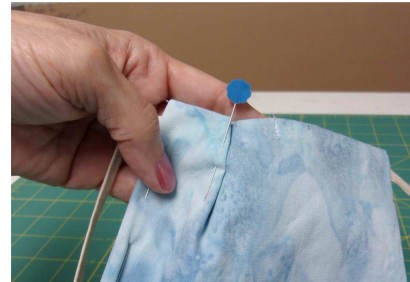


## *Preparing Side Pleats*

12. Starting from the top (wired) edge of the mask, make a downward pleat along one side edge. Make the pleat by bringing down the top mark you made (at 1" down from the top) so it's even with the next mark down (at 2¼" down from the top.)



13. Spread the pleat out toward the middle of the mask and pin in place. (*Spreading the pleat allows for a more generous pocket for breathing and helps keep the mask out of the wearer's mouth.*)



14. Make a second downward pleat along the same edge by bringing the next mark down (at 2¼" up from bottom) even with the last mark (at 1" up from the bottom.) As above, spread out the pleat toward the middle of the mask and pin in place.



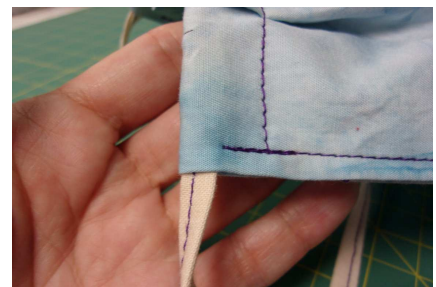
15. Repeat the process along the other edge, making sure all pleats fold downward, away from the wired top edge.



## Finishing the Mask

16. Stitch all around the mask keeping these things in mind:

- Stitch fairly closely at the top (*to capture the wire securely along the top edge*), about  $\frac{3}{4}$ " in from the side edges (*to create casings for the ties*) and about  $\frac{1}{4}$ " from the bottom (*to close the opening.*) Make sure the ties do not get caught in the edge stitching; except for the anchor stitches in the middle, you want the ties to move freely in the casing.
- As you get to each corner, stitch to a spot as close to the tie as you can get without actually catching the tie in the stitching, then backstitch to continue around the mask. (*This makes for a snug casing opening which helps hold the gathers in place when the wearer "scrunches" the side gathers to close any gaps.*) If you accidentally catch the tie, just take out that stitch and secure the correct ending with some backstitching.



17. Go around the mask a second time, making two small angled pleats to close gaps under the chin. Fold each small tuck outward toward the side edges about  $1\frac{1}{2}$ " from the first round of stitching down each side edge. If desired, you can pin the pleats ahead of time. (*With practice, you'll be able to make the pleats just with your fingers and sew them as you go.*) Make a quick back stitch to secure the pleats. (*Tip: make a mental note of where on your finger this  $1\frac{1}{2}$ " length falls. That way you don't have to measure each time. For example, I make the tucks about two "knuckles" away from the previous stitching.*)



18. When finished, do a quality check: Make sure side pleats are facing down, ties move freely in casings, wire is secure, loose threads are clipped away, etc.

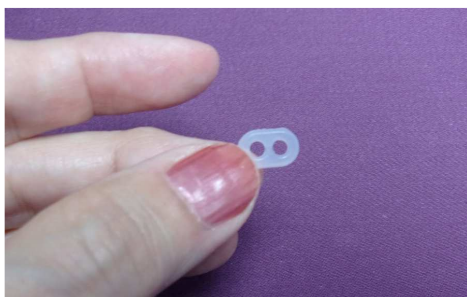


Gathers left flat



Gathers scrunched

19. If you don't want to mess with tying the ties (which may be difficult for, say, children or people with arthritis) you can experiment with cord stops to hold ties in place. My favorite are these stretchy little silicone cord locks available online. They work to adjust elastic ear loops or fabric ties.



## ***Washing & Wearing***

Wash mask(s) in a hot wash cycle with detergent. (*Tip: Gather ties and gently knot them together to keep them from tangling in the wash. It helps to wash mask(s) in a mesh bag if you have one.*) Dry mask(s) in a hot dryer cycle and, if desired, iron on a clean surface. If giving to others, seal mask(s) in plastic bags.

(*Tip: to help the mask stand away from your face and mouth, dampen the mask, mold it over some clean rags or paper towels and spray it lightly with spray starch. Let the mask dry completely before wearing.*)

**To secure around head & neck:** Secure ties behind your head and neck and mold the wire to fit snugly over your nose and cheeks. Grip each tie and “scrunch” side gathers to close gaps, then adjust tie tightness as needed.

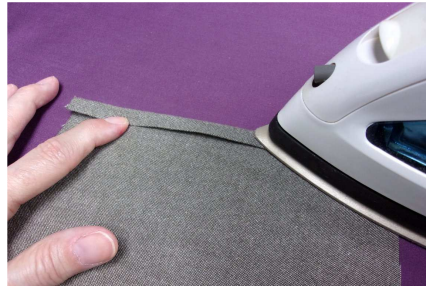
**To secure behind ears:** Adjust as above but with ties secured behind ears. Excess lengths of ties can be loosely knotted behind your neck so it will stay handy if you need to take it off. If ties are longer than you would like, you can cut them to the appropriate length and tie knots in the ends to prevent fraying. If you have silicone cord stops, make sure they're where you want them before tying off ends.

## **Modification #1: Including a Pocket For Insertion of an Extra Filter Layer**

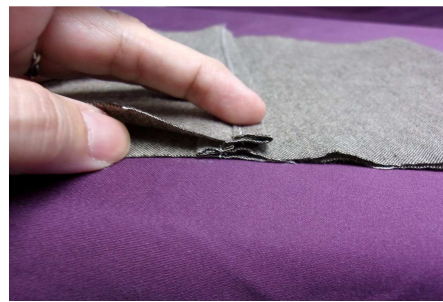
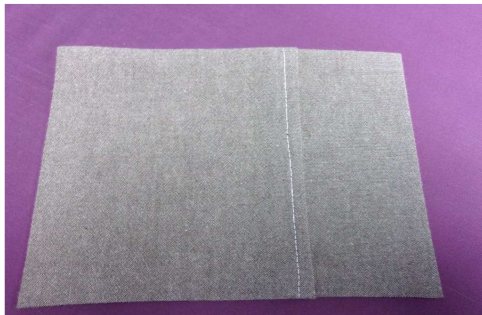
*Wearer may want the option of adding an additional layer of filtration (flannel layer, HEPA filter material, trimmed paper towel, hankie, etc.) If so make these adjustments:*



1. Cut the rectangle 7" x **19"** inches (instead of 7" x 18")
2. Instead of sewing the rectangle into a tube, lay the rectangle down, wrong side up, then fold and press each short end of the rectangle down ¼", then fold and press another ¼" to enclose the raw edges. Stitch down the inside edge of each double-folded hem to secure.



3. With the right side of the rectangle facing up, fold the short ends inward and overlap them away from the center so overlap won't irritate the wearer's nose. Abut the stitched hems so that they lay smoothly and don't create too much bulk.



4. Hold or pin the abutted hems in place and, starting and stopping about ¾" from each folded end, sew across the top with a ½" seam. Then, again starting and stopping about ¾" from each folded end, sew a ¼" seam across the bottom. *(You don't need to leave an opening in the middle since the pocket will give you access for turning inside out and inserting the nose wire.)* It's not a bad idea to backstitch across the abutted hems to make sure the pocket is secure.





5. Proceed with the process from step 6 of basic instructions.
6. To add an extra filter layer in the finished mask, cut the filter material to the appropriate size and insert the filter in the pocket, smoothing it under both flaps of the mask's inside layer. Smooth down the pocket edges, tucking into pleats as desired, and wear with the pocket side against the face. *(If you're having trouble inserting the filter, you can turn the larger side of the mask lining inside out, insert the filter under the smaller flap, then turn the larger flap back over it.)*



## **Modification #2: Including a Flannel Layer**

*Rather than using one continuous piece of folded cotton, this modification provides a flannel lining. Some people like the softer feel of the flannel; others may find it too warm. Some research indicates that flannel may provide better filtration. Try one and see what you think.*



1. Cut one 7" x 10 1/2" piece of quality cotton and one 7" x 7 1/2" piece of cotton flannel (*instead of the one 7" x 18" piece of cotton in the basic instructions.*)



2. Instead of sewing just one 1/4" seam to make a tube, you'll be sewing two 1/4" seams to make the tube. If the flannel has a non-fuzzy and a fuzzy side, place the NON-FUZZY side of flannel against the RIGHT side of the fabric. Sew two 1/4" seams to connect the 7" ends of the flannel to the 7" ends of the cotton. This will make a tube with a flannel insert. Center the flannel and iron seams open. (*Why not just cut two even-length pieces of both fabrics? Because the cotton-to-flannel seams would add excess bulk to the side gathers making them harder to "scrunch". Why the non-fuzzy side to the face? Can feel too hot otherwise.*)



3. With the flannel panel centered on the flattened tube, proceed from step 4 of the basic instructions.

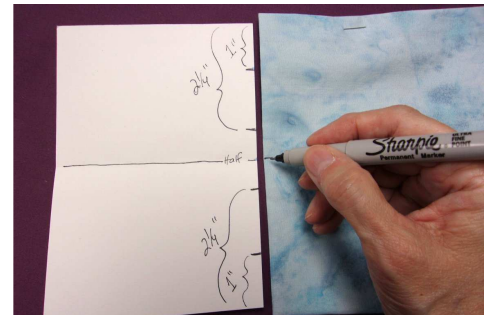
### **Modification #3: Adding a Ridge to Hold Mask Away from Face**

*Having a mask touch your mouth when you're speaking can be annoying. Adding a small ridge across the front of the mask gives it just enough structure to stand away from the face more consistently.*



*Notes: Adding the ridge will take about 1/4" away from the top-to-bottom measurement of the mask. Also, be mindful of where the ridge will land on your fabric. For example, if your fabric features faces, you might want to cut your fabric in a way that the ridge doesn't cut across a face or other important feature of the fabric design.*

1. After marking the pleats on the front of the mask (step 9 in the basic instructions) flip the mask over, inside of mask facing up, and make a mark half way down each short side. (You can add a halfway mark on the same template you used to mark the pleats.)



2. Draw a line across the middle of the inside of the mask about an inch or two in from each short side.



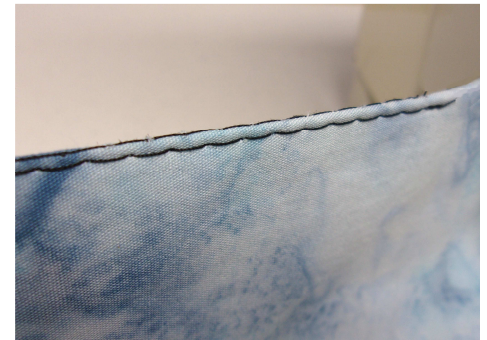
3. Sew along the line you just drew, backstitching at the ends to lock stitches.



4. Fold the mask along the mid-line stitching, with inside of mask inside the fold and outside of mask showing. Press along fold.



5. Take the folded, pressed mask to the sewing machine and sew a second line just barely next to the mid-line stitching to form a tiny ridge.



6. Unfold the mask and proceed from step 10 of the basic instructions. Do not press ridge up or down. Just let it stand up straight.



7. Proceed from step 10 of basic instructions

## **Modification #4: Child-Size Masks**

*Kids need protection, too! Below are instructions for two sizes of child masks with extra adaptations to enhance safety.*

***NOTE:*** *There are differing opinions regarding at what age, how and under what circumstances children should be masked. I am a well-intentioned quilter, **NOT A MEDICAL PROFESSIONAL** so I leave it to you to do your own research and consult your own health advisors to decide how to mask your children. Monitor children closely when they are masked.*

For both large and small child masks, I like to 1) add a center ridge (Modification #3) to help keep mask off the face and 2) use silicone cord stops—which have some “give”—so that there is less risk of injury if the mask gets snagged or tugged when playing. For small masks, I also pad the nose wire which you can do for larger masks also if desired.

### **A. Large Child Mask**

For a larger child’s mask, just follow the basic mask instructions, making the following adjustments:

For plain cotton masks:

- Cut cotton to 6 ½” x 16”

For flannel-lined masks:

- Cut plain cotton to 6 ½” x 9 ½”
- Cut flannel to 6 ½” x 6 ½”

For both flannel and non-flannel masks . . .

Make pleat marks

- 1” down from top
- 2” down from top
- 1” up from bottom and
- 2” up from bottom

Cut ties . . .

- to 1” x 28”

Cut nose wire . . .

- to 5”



## **B. Small Child Mask**

Based on my research I feel more comfortable using elastic ear loops for young children rather than fabric ties. I make small masks with fixed side pleats since elastic isn't strong enough to support adjustable side gathers. I also include a sewn-in silicone cord stop--pictured on page 7 of basic instructions--on each elastic piece to allow for a custom fit. However, if you don't have cord stops, there is an easy alternative included here.



### **Materials:**

- Two pieces of 5 ½" x 7" cotton
- 4 ½" piece of insulated copper wire ("doorbell wire," untwisted)
- 5" x ¾" piece of fleece or batting
- (Optional) 2 small silicone cord stops
- Two 12" pieces of ¼" elastic
- **OR, if not using cord stops . . .**
- Four 6" pieces of ¼" elastic (instead of two 12" pieces)  
**(Modifications for four elastic pieces are in bold)**



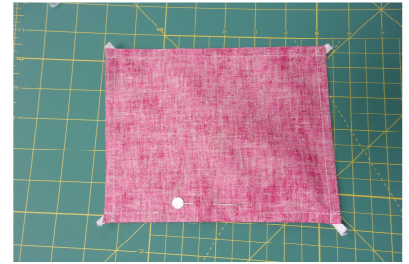
1. Decide which piece of fabric you want for the front of the mask and which for the back and take note if there is an "up" side to the design. (*It's much simpler to use a fabric with an all-over design so you don't have to worry about image placement or direction. Even better are batiks that have an all-over design and also have no "wrong" side.*)
2. If using cord stops, pull each end of the elastic through its own hole in a cord stop, leaving a loop at the center. (*Tip: Tweezers help in pulling elastic through tiny holes.*)



3. Place the BACK fabric **WRONG SIDE UP** side up on a table and pin ends of each elastic to the corners of short sides. Make sure the rest of the elastic stays away from the edges. **(If you're not using cord stops, do the same pinning with a piece of 6" elastic pinned inward at each corner.)**

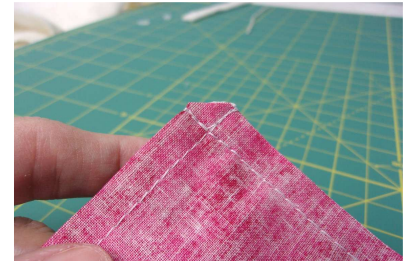


4. Place the FRONT fabric, WRONG SIDE UP\* on top of the pinned back fabric, re-pin elastics in the corners and stitch all around the mask, about ¼” - ½” in from the edges and leaving a 5-6” opening at the bottom for turning inside out. Stitch all the way to the ends of each side and backstitch to continue around to securely catch elastic at the corners. *(Be careful to avoid catching any other parts of the elastic in the stitching.)*

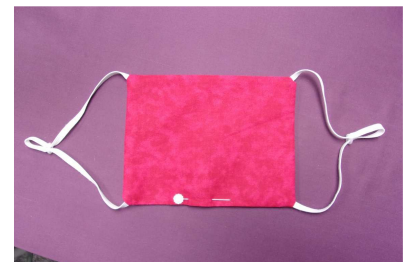


*\*(Why put both pieces wrong sides up? When turned inside out, the front of the mask will show the right side of the fabric and the back of the mask will show the wrong side. That way, if the child takes the mask off they won't accidentally put the mask back on backwards.)*

5. Trim off the corners to reduce bulk for when you turn the mask inside-out. Don't clip the stitching.



6. Turn the mask inside out and pull elastics taught to pull out the corners. Press the mask, including turning up the edges and pressing the opening at the bottom.



7. Take the wire, fold the fleece or batting over it lengthwise and stitch down short end, long end and short end to enclose the wire.

*(Tip: Putting a piece of scrap fabric underneath as you sew the ends can keep the fleece/batting from getting pulled into the machine. Scrap fabric can then be trimmed away.)*

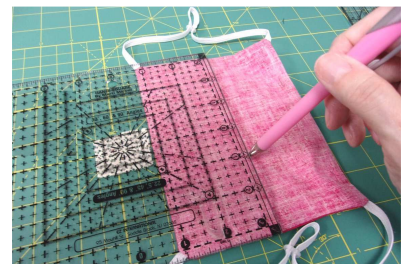


8. Insert the padded wire into mask, against the top edge and centered across the top, and preferably with the wire under the top seam allowance to put as much fabric as possible between the child's face and the wire. From the front side of the mask, pin the wire snugly against the top seam.



**If you want to include ridge to help hold the mask away from the mouth, continue here. If not, skip to step 13.**

9. Mark a line halfway down the mask width on the wrong side of the mask. Stop and start the line about a inch from each short end.



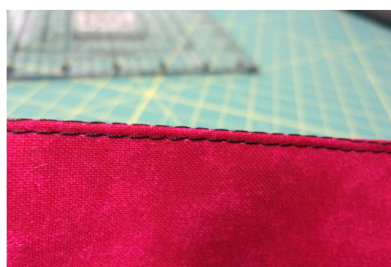
10. Stitch along this center line on the wrong side of the mask.



11. Turn mask over and fold mask, with wrong sides together, along the ridge stitching and press along the ridge.



12. Keeping the mask folded, stitch a second line right next to the ridge stitching (1/8" or less.) When you open the mask, you'll have a padded wire pinned across the top and a ridge sticking up slightly across the center front.





13. Pin two downward-facing pleats along each short end of the mask, one above the ridge and one below it. Splay the pleat out toward the center of the mask when pinning to allow a more generous “pocket” for breathing. (*Described in steps 13 and 14 of the basic instructions.*)



14. Stitch all around the mask once, stitching about ¼” to ½” from each edge, capturing the padded wire & side pleats and closing the opening at the bottom. (Not pictured.)

15. Go around the mask a second time, stitching slightly inside the previous round of stitching. Incorporate two small pleats, folded toward the short ends, along the bottom edge to help the mask fit under the chin. (*You can fold and pin the pleats ahead of time or just “eyeball” them and make the pleats as you go around.*) Do a quick backstitch over the chin pleats as you go to make sure they’re secure.



16. Place mask on child’s face, fitting wire across top of nose and cheeks, then place elastic behind ears and adjust cord stops--**or tie ends of 6” elastic ties**--to get the best fit behind the ears.