

# MakerMask: Surge

## Required Materials

- Sewing machine
- Freshly washed NWPP bags
- Bias tape or other ties
- Pipe cleaners or coated paper clips
- Scissors and pins
- Measuring tape or ruler



## Instructions

### Gather your materials

Sheets should be 8 inches high by 9 inches wide.



These instructions do not guarantee protection against transmission of any diseases. Commercially available masks meet regulatory guidelines, but homemade masks may not and are to be used at your own risk. Due to variability of materials and construction, the mask's safety or effectiveness for personal protection is not proven and cannot be assumed.

### **Top stitch three layers together**

Sew 1/4 inch from the edge all the way around.



### **Turn both sides and the bottom in**

Fold three sides in approximately 1/2 inch, as shown, leaving the top open for the nose band. Stitch a seam on these three folds, approximately 1/4 inch from the edge.



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## Twist two pipe cleaners together

This will allow the mask to be pressed down over the bridge of the nose to better conform to the face. You can also use coated paper clips for this step.



## Cut the pipe cleaners to length

Trim your nose bridge material just shorter than your mask is wide. If sharp ends remain, fold over the tips to prevent injury to users.



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## Fold the unstitched top over the twisted pipe cleaners

Lay the pipe cleaners 1/2 inch from the top edge, fold the fabric over them, and stitch this in place. Stitch the channel closed on both ends.



## Make three folds to pleat the mask for expansion

Pleats should be approximately 1/2 inch wide. Mark lines on your fabric at 1 1/2, 2 1/2, 3, 4, 4 1/2, and 5 1/2 inches from the bottom of your mask.

Fold the 1 1/2 inch line up to meet the 2 1/2 line, crease, and pin in place on each side. Repeat by folding the 3-inch line up to the 4-inch line. Finally, fold the 4 1/2 inch line up to the 5 1/2 inch line. Stitch these in place by sewing both sides 1/4 inch in from the edge again.



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## Measure cloth ties

Ties should be long enough to tie behind the head (10-12 inches) and hold the mask comfortably to the face. Sew ties to the front of the mask, 1/4 inch from the edge.



## Sterilize before use

Masks should be sterilized before use. While autoclaving is ideal, home users can submerge the masks in boiling water for 10 minutes.

If you need assistance distributing your masks, we are partnering with the community to provide the best information as it becomes available. Check our website for the latest information.

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## Sourcing materials

Masks are made by layering non-woven polypropylene. They include ties/elastic to keep the mask affixed to the face and a nose band to fit to facial contours.

### Non-woven polypropylene (NWPP) Bags

Despite being called "non-woven," NWPP is pressed with a cross pattern that gives it a woven appearance. A common source of NWPP is reusable shopping bags.

Do not use NWPP that is waterproof or insulated.

Look for reusable grocery bags with a cross hatch pattern, no insulation or waterproofing. Hold it up to your nose/mouth, you should be able to breathe through it. NWPP bags can be safely laundered.



### Cloth Ties

For securing the mask to the face, cloth ties may be fashioned from NWPP bags. Ties should be about 1/4 -1/2" wide and roughly 10" long. Shoelaces may also be used.

Bias Tape is a great option and found at craft stores.



### Pipe cleaners or coated paper clips

Needed to fit the top of the mask over the bridge of the nose. Other thin pliable metal may be used. Be sure to dull or bend the ends of these strips to prevent injury to users.



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## Coronavirus disease (COVID-19) advice for the public: When and how to use masks



<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks>

## Understanding the difference between Surgical Masks and N95 Respirators



<https://www.cdc.gov/niosh/npptl/pdfs/>

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