SUAY

Updated Version 1.1

THE SUAY FACE MASK PATTERN
ONE PATTERN, TWO VARIATIONS:

Variation A: Self, Lining (Using Filter Material), Elastic, Nose Clip
Variation B: Self, Lining, Filter Pocket, Filter Insert, Elastic, Nose Clip

DISCLAIMER

*This mask pattern is optimized for production, developed for a universal adult fit. There is an optional variation to the pattern (see below). These materials are just suggestions, as we have only been able to do particulate testing as included. Even so, our testing results are not guaranteed, and this mask pattern is not approved by the FDA or CDC, and these filter options have not been approved for mask making materials. We encourage you to stay curious and only use what you feel comfortable with, and always follow the guidance of the CDC available here.

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MATERIALS + TOOLS

1. Tight Woven Cotton - washed and dried (*quilter's cotton, tight woven muslin, old twill pants, etc.)*
2. Shop Towels *(below recommendations)*
3. 2 yards of ⅜"-½" finished fold over elastic/braided elastic OR ½" -1" inch bias cut spandex, swimsuit material, or lycra
4. Thread *(cotton or synthetic)*
5. Fabric Scissors
6. Ruler (if cutting bias)
7. Stoked, curious, do-er attitude. (most importantly)

OPTIONAL NOSE CLIP MATERIALS

- Coffee Bag Tin Ties
- Floral Wire
- Twist Ties (for trash bags, bread bags, etc.)
- Paper Clip

OPTIONAL FILTER/LINING MATERIAL

1. Wypall X80 Towel
2. Zep Shop Towel
3. Toolbox Shop Towel
4. Scott Shop Towel
5. Oil Absorbent Towels

CONSTRUCTION INSTRUCTIONS

VARIATION A

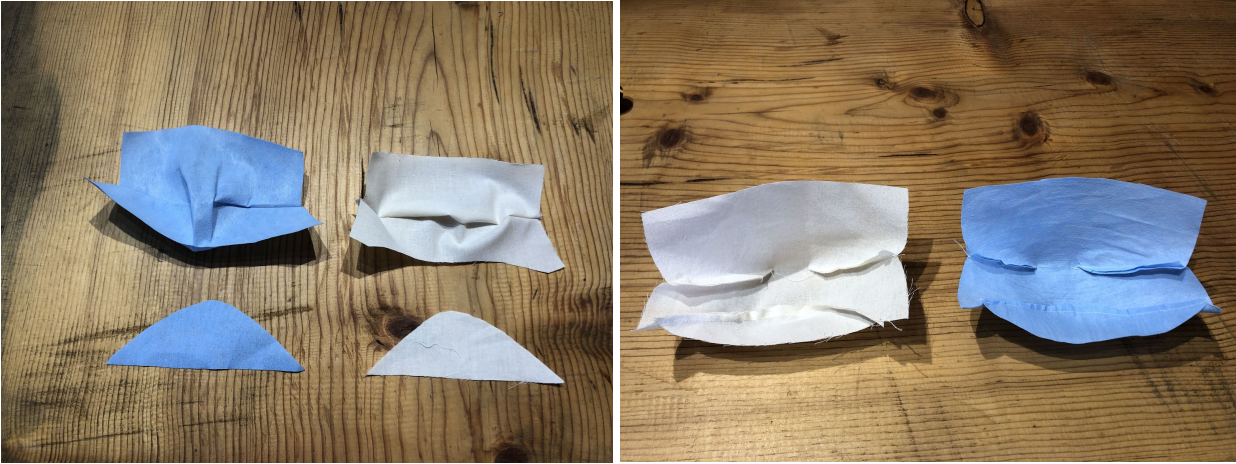**Step One:** Cut your materials based on your preference

Step Two: Stitch all darts: self and lining

Step Three: Stitch chin gusset to face mask body out of self fabric. Repeat step for lining.

Step Four: Stitch self and lining together. Both face out. (face means front)
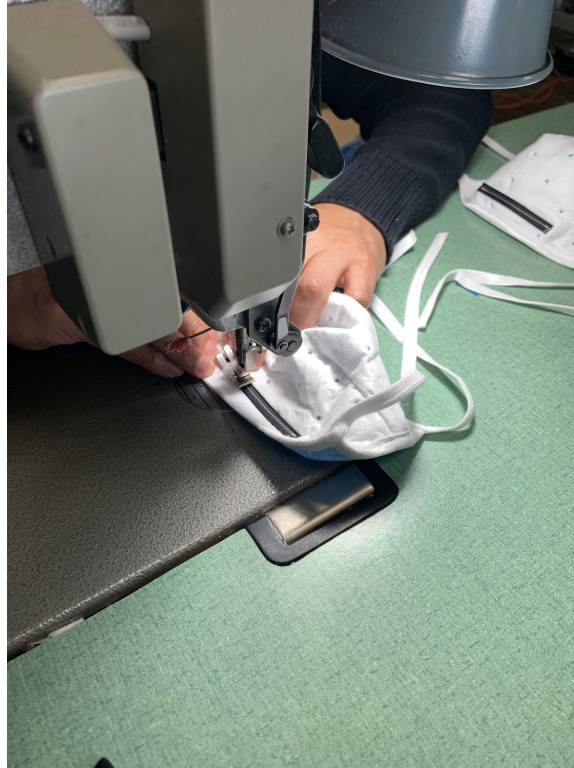
Step Five: Attach side bindings to mask base

Step Six: Attach top and bottom binding to mask base
(these bindings are the tie straps for adjustability)

Step Seven: Attach recommended nose clip to the top nose position of the mask body. It can be stitched into position or adhered to fabric. If you're wanting to sew in an alternative nose clip between layers, position the nose clip and stitch around it between the lining and the self layers in step three. If using an adhesive back we recommend stitching down and tacking to ensure security.

*Note: These steps can be adjusted based on your variation.

VARIATION B

Step One: Cut your materials based on your preference

Step Two: Stitch all darts: self, lining and filter pocket.

Step Three: Stitch self fabric chin gusset to face mask body. Repeat step for lining.

Step Four: Stitch self and lining together. Both face out. (face means front)

Step Five: Clean finish sides of filter pocket and attach filter pocket to self and lining (at notches) to make mask base

Step Six: Attach side bindings to mask base

Step Seven: Attach top and bottom binding to mask base (these bindings are the tie straps for adjustability)

Step Eight: Attach recommended nose clip to the top nose position of the mask base, can be stitched into position or adhered to fabric (if wanting to sew in an alternative nose clip between layers, position alternative nose clip and sew around it between the lining and the self layers in step three) If using an adhesive back we recommend stitching down and tacking to ensure security.
*Note: These steps can be adjusted based on your variation.

SUAY PRO TIPS

TERMINOLOGY

> <u>Self</u> - main outer fabric, outer piece, "fashion fabric" etc. Welcome to the production sewing world! You got this!
> <u>Clean finish</u> - "twice-turn hem", folded once @ ⅜" then again @ ⅜"
> <u>Bias</u> - when the fabric is cut at a 45 degree angle

CHOOSING YOUR FABRICS

There are multiple variations to this pattern. This is where you get to decide what mask version feels most suited for your needs. We recommend you read through the entire instructions and testing before you decide upon your materials. If this is a high use, lower exposure situation, perhaps a mask base constructed entirely out of tight weave cotton, with just a filter insert of your choice is best for you.

If you are in a very high contact/high exposure situation and are looking for more disposable/sem-disposable options, using a filter material built in as your lining might suit. Again this is a personal choice based on needs/comfort.

FOLDOVER ELASTIC VS. STRIP CUT KNIT FABRIC

On our production floor we are attaching the elastic binding with a coverstitch machine. Most home sewers will not have access, so you could use a folder attachment on your home sewing machine. These can become fussy in addition to fold over elastic being trickier to source. Therefore, we came up with a slightly more cost effective and easier to obtain substitution: strip cut spandex, lycra, swim material, an old tshirt - whatever you got! If you have never made bias trim from your own fabric, please see [this tutorial](). Use a zig zag stitch on your home machine to attach all trim, thus preventing thread from breaking as it stretches across the face and ties.

There is no right or wrong way to attach your homemade binding! Yes, use old t-shirts if you want. You can attach the binding in 2 steps, if that helps: make a first pass attaching one side of the binding, then fold your material over and top stitch. Whatever you are most comfortable with!

THE IMPORTANCE OF USING TRIM THAT STRETCHES

A tight fit is key here as it's aiding keeping protection high. Substituting the trim for a woven, non-stretching trim instead of an elastic/knit could shift the ability to achieve a comfortable, more effective mask fit.

WEAR + CARE

TYING OPTIONS

We have only particle tested the mask with tie option one, which is what we are recommending. However, if you find that uncomfortable please see option 2 as an alternative. Again, having a tight closure/seal is one of the best ways to heighten protection.

TYING OPTION 1

TYING OPTION 2

WASHING YOUR MASK

If using Variation A with the filter sewn as the lining, the life of your mask will be more limited. Although we have tested our in-house made masks with a washing machine with positive varying degrees of success, we do not recommend machine wash for Variation A.

Our best result has been from hand washing with soap and hot water. Feel free to include whatever sanitizing components you feel comfortable with.

Drying recommendations are as follows: line dry or machine tumble with a clean dry towel.

FILTER SIZE

We made the filter pattern a base size. It fits comfortably above the chin gusset on most folks.

PLEASE feel free to adjust to your personal needs.

TESTING

We tested our masks for fit and filtration effectiveness on a PortaCount Pro.. The PortaCount measures particles ranging from .02-1 um. [Current estimates](#) place the COVID-19 virus size at .125 microns. We are posting our lowest readings. We did get consistently higher readings but thought best to post lowest read.

All supplies are in bold and have links in the supply list at the top of the document.

The following aspects were important to the fit to filter particles.
+ The chin piece (which is in our pattern)
+ A bendable nose clip piece which can be made out of **coffee bag tin ties** or a sturdy twist tie, adjusted tightly around nose
+ **Elastic ties** to give a tight fit to face

When we made the masks out of the following materials they filtered out 87% of particles based on the Portacount fit test:
+ One layer of oil absorbent towel + one layer of shop towel (Zep, Wypall or Toolbox brands)
+ Two layers of shop towel (Zep, Wypall, or Toolbox brands

When we made the mask out of **tight woven cotton** and added the *optional pocket piece*, filling it with any of the following filters, the mask filtered out 82% of particles based on the Portacount fit test:
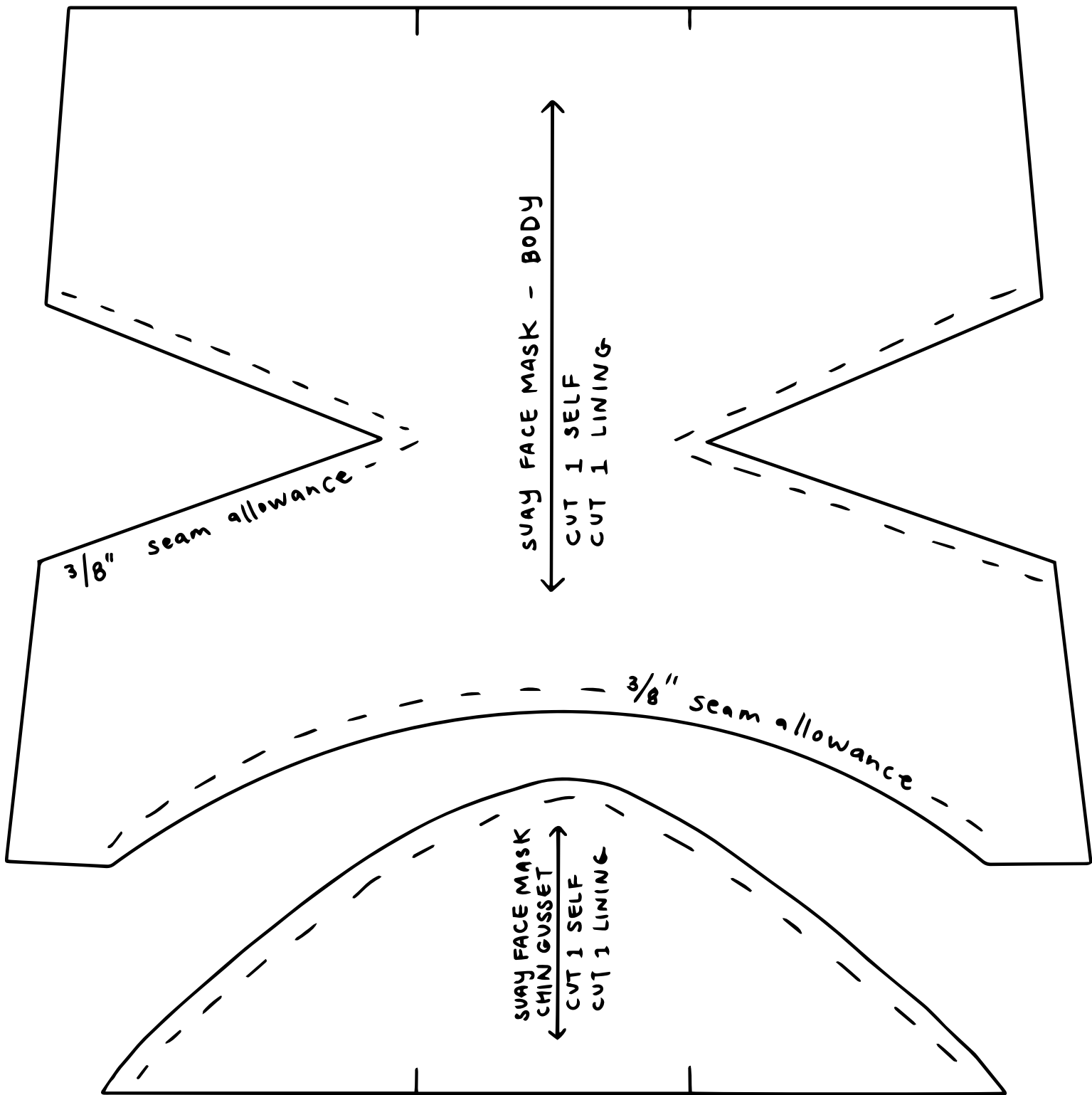-**Wypall X80 Towel**
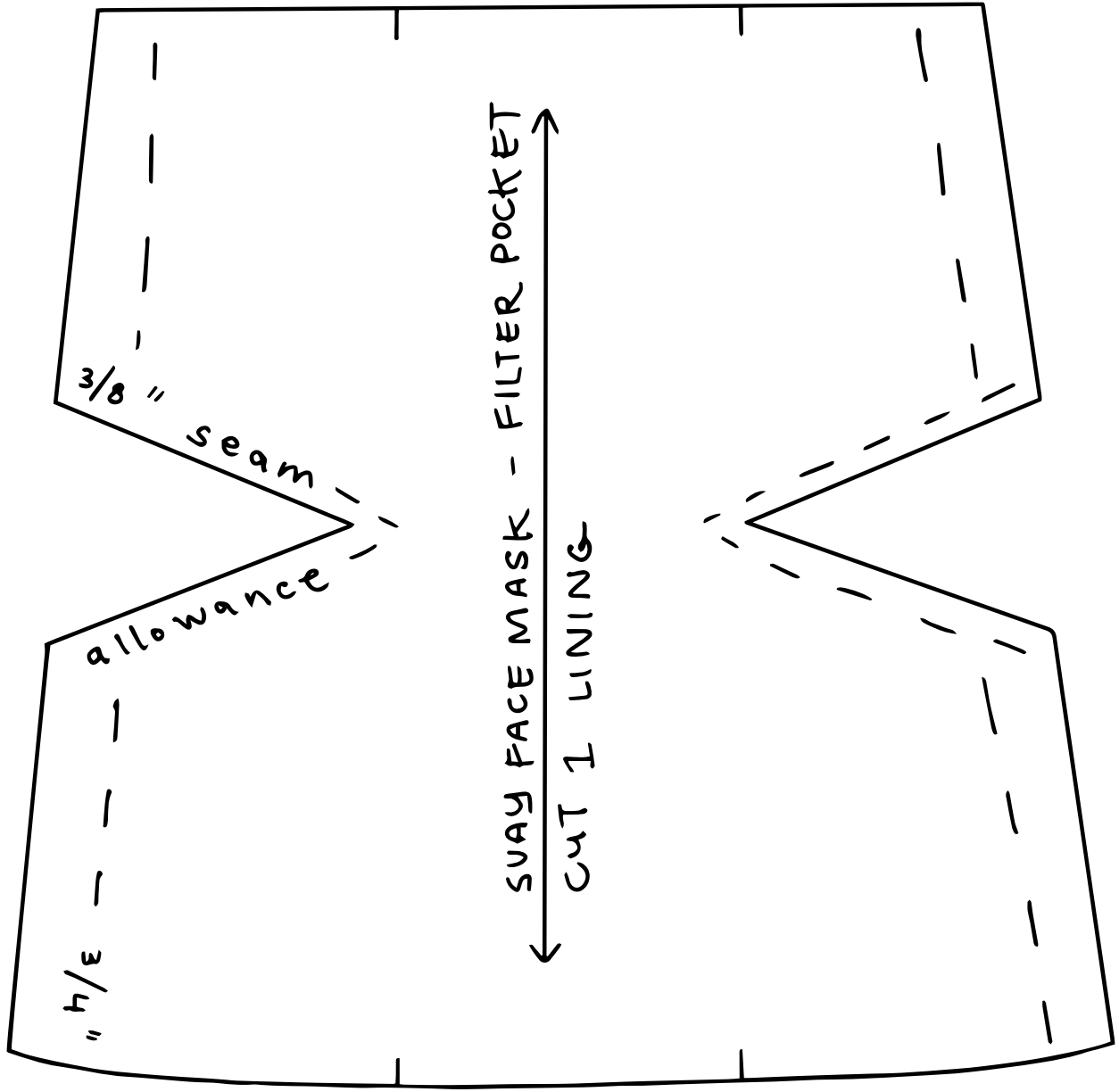-**Zep Shop Towel**
-**Toolbox Shop Towel**

When we made the mask out of **tight woven cotton** and added the *optional pocket piece*, filling it with the following filter, the mask filtered out 70% of particles based on the Portacount fit test:
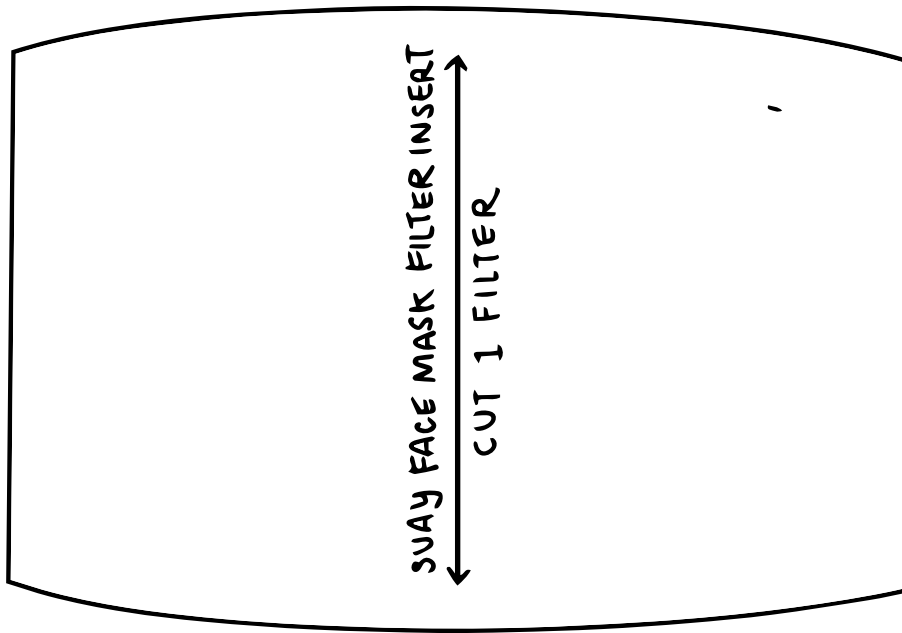-**Scott Shop Towel**

When we made the mask out of **tight woven cotton** and added the *optional insert piece* and filled it with **no filters**, the mask filtered out 52% of particles based on the Portacount fit test.

We cannot guarantee these filtration percentages as they rely on the user to adjust fit and seal. We are not experts in the fields of masks or filtration, our attempts to quantify the effectiveness of our masks is a group of logical minded creatives trying our best to make something that we believe will help **when the correct PPE is unavailable**.
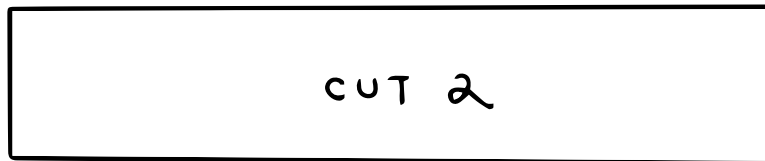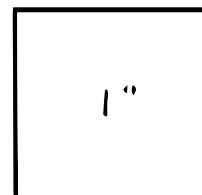
SUAY FACE MASK – BODY

CUT 1 SELF
CUT 1 LINING

3/8" seam allowance

3/8" seam allowance

SUAY FACE MASK
CHIN GUSSET

CUT 1 SELF
CUT 1 LINING

1"

3/8 " seam

allowance

3/4 "

SUAY FACE MASK — FILTER POCKET

CUT 1 LINING

1"

SUAY FACE MASK FILTER INSERT

CUT 1 FILTER

CUT 1

3" wire nose piece

CUT 2

4" binding strips for sides

CUT 2   28" binding strips
for top + bottom

1"

SCALE