I. **Cloth Mask Instructions:**
   a. These instructions are for making cloth surgical masks that can be worn by themselves, (or in a medical setting) with a surgical mask insert, or over an N95 to allow for reuse of materials. Be sure to wash the mask between each use!
   b. **Materials:**
      1. tightly woven cotton
      2. ribbon
      3. thread
      4. pipe cleaners
      5. 1 cm, 2.5 cm, 4 cm ironing templates (I made these out of printer paper folded in half)
   
   ![Image of ironing templates]

   c. **Instructions:**
      1. Cut ribbon into 16” length ribbons.
         a. If using grosgrain ribbon or another ribbon that frays, run the ends over the tip of a flame to melt the ends and prevent fraying.
2. Cut fabric into 20 x 36 cm rectangles.

3. Fold/iron and fabric in half lengthwise (becomes 20 x 18cm)
4. Wrong side of fabric facing up. Using templates, fold one side 4 cm up, 1 cm down, 2.5 cm up, 1 cm down, 2.5 cm up (the video tutorial for this is in chinese, but you can watch how she does it) https://www.youtube.com/watch?v=an5iCrCr_7Q&feature=youtu.be
   a. Tip: cotton frays very easily. To prevent fraying when you iron, pick up and place the iron down onto the fabric and don’t move it back and forth

5. Repeat ironing/folding on other side.
6. Open up at the center fold and overcast or zig zag stitch the longer sides to prevent fraying.

7. Hem the longer sides, attaching the ribbon to the side you designate as the “front” as you go.
   a. I looked at both sides and determined which side was prettier would be the front. In the case of directional patterns, the front was the side that allowed the pattern to be upright.

8. Cut a pipe cleaner in half and fold it in half. Twist the two metal sides together.
   a. I also like to fold the pointy ends inward so no one gets poked.
9. Using a 5mm wide, 1.4mm long zig-zag stitch, stitch the twisted pipe cleaner onto the mask next to the middle fold on the “back” side of the mask.
   a. I also zig-zag stitched past the ends of the pipe cleaner to make a “case” for it.

10. Fold the mask in half inside-out and sew a straight line to close up the bottom of the mask. Overcast the bottom of the mask to prevent fraying.
II. **Face Shield Instructions**

**a. Materials:**
1. \(\frac{3}{4}”\) x 100’ plastic Hanger Strap
2. 4” cable ties
3. Medium sized hair ties
4. Clear binding sheets
5. Tools needed:
   1. Hole puncher
   2. Scissors
   3. Permanent marker

**b. Instructions:**
1. Cut plastic hanger strap into 2 pieces, each 22 holes long.

2. Round head band ends for comfort

3. Assemble head band by passing single zip tie through 1\(^{st}\) hole of outside band and through 4\(^{th}\) hole of inside band. Next pass end of cable tie back through inside band’s 5\(^{th}\) hole and outside band’s 2\(^{nd}\) hole. Repeat for other side. This allows for spacing between head bands for other protective equipment. Important for this step is to start cable tie from outside so that flat side rests against skin and female part of zip tie is on outside of band. Trim off excess cable tie tail.
4. Cut Single hair tie in half, helps to use existing fused point for cut location as is stiffer and allows for easier passing in subsequent steps. Use point of scissors and expand in circular motion the first holes on inside head band, pass hair tie through each hole and tie know external to head band.

5. Create template for clear plastic shield. Cut a strip of hanger strap 15 holes long. Turn binder sheet in landscape orientation, align newly cut strip along edge of binder sheet with left-most hole just off the left edge of binder sheet. This allows for even spacing of shield on hanger strap and even spacing of cable ties. Now starting on 2nd hole of strip, take permanent marker and mark a dot on 2nd/3rd holes, 6th/7th holes, 10th/11th holes, and finally 14th/15th holes. This leaves a gap of 2 holes in between each sets of marking. Once dots marked, take hole puncher and punch holes in template. Stacking several binder sheets at once will speed up creation. Hint, once first template created with dots on binding sheet, take other binding sheets and trace/transfer dots to others instead of using strip again to save a lot of time. You will now have 8 punched holes along edge of binding sheet, ready to mount on head piece.

6. Take punched binding sheet and align holes, start passing cable ties (through inside of external band now, so female part of cable tie lies inside head band), starting on 3rd hole from cable tie that was placed on step 4. Leave cable ties loose for now to allow wiggle room. Hanger strap holes are not uniformly placed so holes might not perfectly align but will when all 4 cable ties placed. Continue placing cable ties, 4 total, to fix clear sheet to headband. When complete, there will be 2 empty holes on each side of face shield and should be evenly spaced. Now tighten all cable ties and snip off excess tails.
7. Face shield complete!

![Face shield image]


III. Fundraising:

IV. Students Involved with Project
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