

Forehead Add-On for 3D Printed Face Shields



by sophywong

This add-on for 3D printed face shields is cut from plastic transparency sheet and attaches to the pegs of the visor frame over the full sized plastic sheet, extending coverage upwards over the forehead. Quick and easy to make, works with already 3D printed parts.

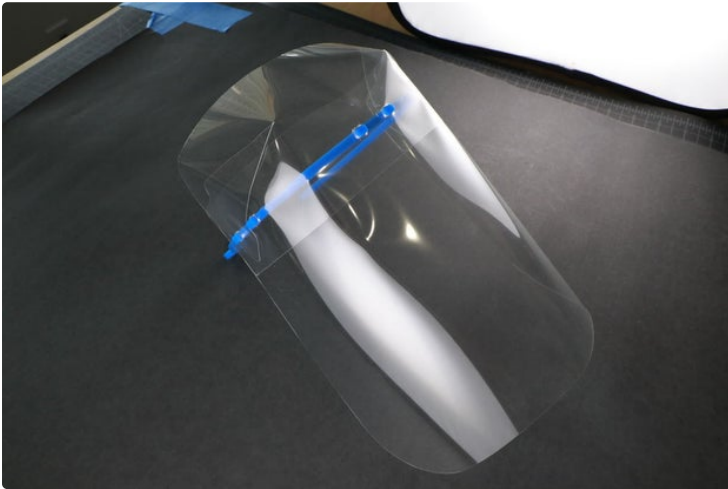
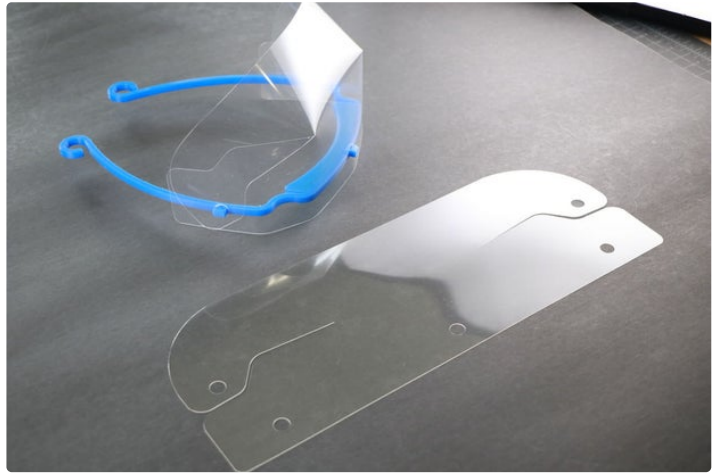
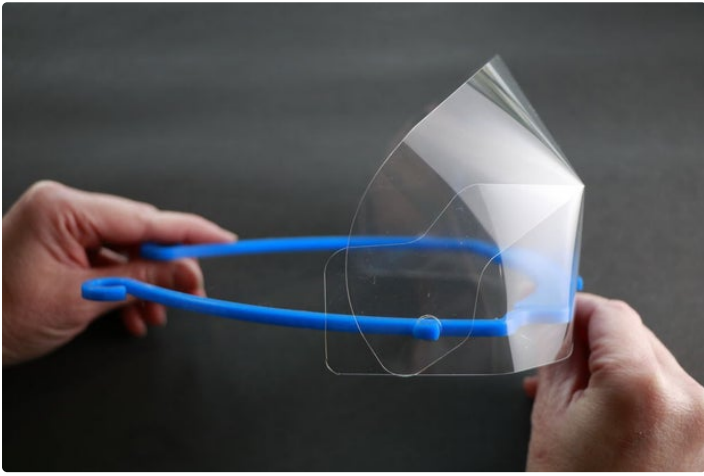
- Light weight, does not block light.
- 2 add-ons can be cut from 1 sheet of letter size plastic transparency.
- Cut with laser cutter, vinyl cutter, or by hand.
- Shown with [3DVerkstan's FaceShield](#) design, but also compatible with other face shield designs using 6-hole and 3-hole peg configurations.


*NOTE: This add-on is an independent project by me, I am not a medical professional, and this add-on has not been tested or approved by anyone. It's just an idea I had, and I'm sharing it here in case it's helpful or useful to anyone. If it is useful to you, please let me know!

There are many great designs for 3D printed face shields making the rounds, and one of my favorites is the lightweight and quick-to-print model from [3DVerkstan](#) in Sweden. The frame of the shield is 3D printed, then a plastic transparency sheet is punched with a standard hole punch, and attached to the pegs of the frame. This design is being printed and used in hospitals fighting the COVID-19 pandemic around the world. However, some other designs incorporate more coverage at the top of the shield, to provide more protection from aerosolized droplets from above. 3D printed solutions for added upper face coverage result in heavier face shields with significantly increased print times. I wondered if there was a way to incorporate this additional protection into the 3DVerkstan model while still keeping it quick and easy to make.

My design solution is to add another half sheet of transparency plastic to the top, using the same holes and pegs that already exist in the design. This results in no added print time, and the add-on can be attached to existing face shields that have already been printed. I designed this add-on to use half a sheet of transparency plastic, so that 2 add-ons can be cut from 1 sheet of plastic. The add-on snaps onto the frame's pegs over the full sheet, extending upward, then its side tabs are pulled down and snapped onto the outermost pegs, creating a domed upper shield.

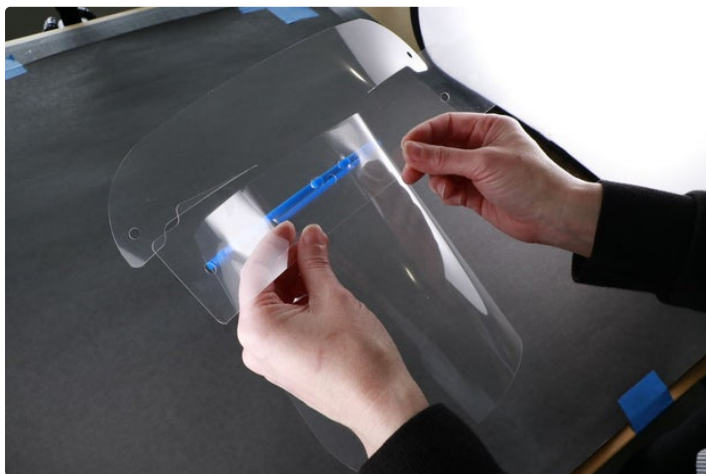
The design cuts in less than a minute on a vinyl or laser cutter. It can also be cut by hand by printing the included files and using as a cutting pattern, or eyeballed (instructions follow).



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Step 1: If Cutting With a Vinyl or Laser Cutter:

Use the appropriate file for your 3D printed frame (3-hole or 6-hole format) and cut from 8.5" x 11" transparency sheet. Two add-ons will fit on one sheet, so I have provided 2-up files as well. Once cut, attach to 3D printed frame pegs over the full sized sheet, extending upwards. Then pull outer tabs downward and attach onto outermost pegs on each side of frame, creating the domed structure.

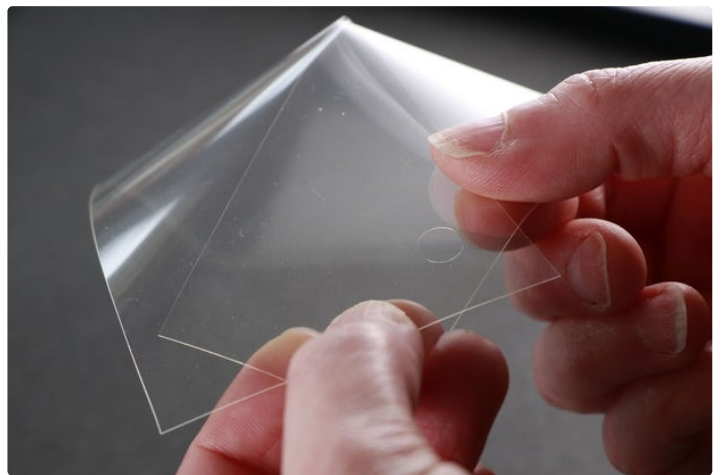
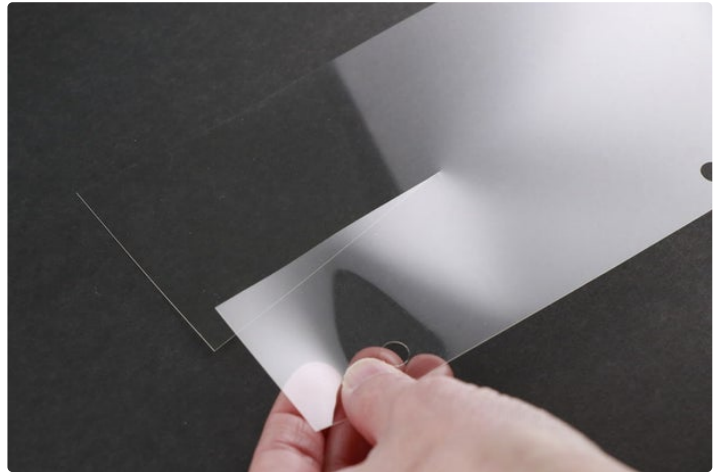


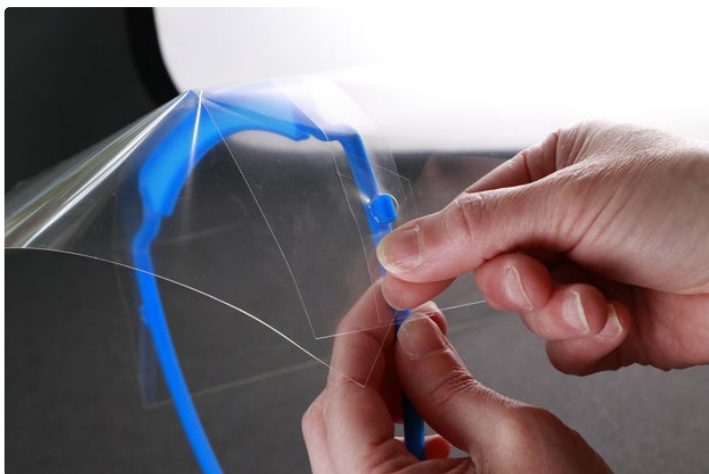
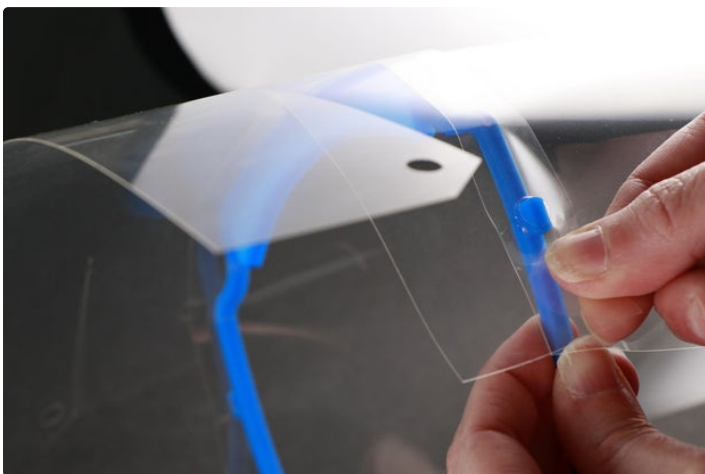
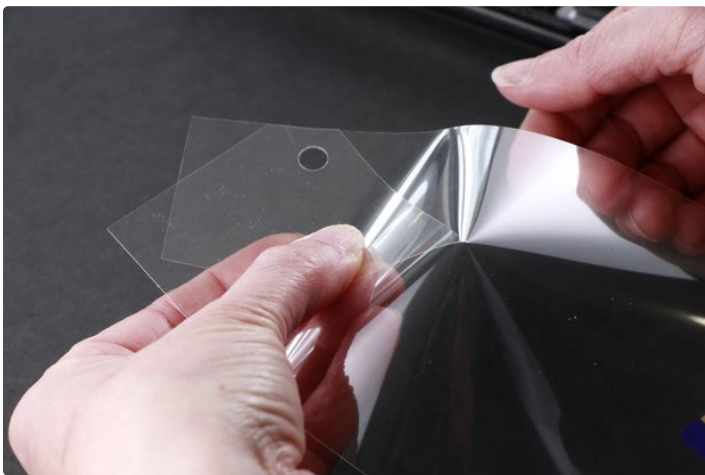
Step 2: If Cutting by Hand

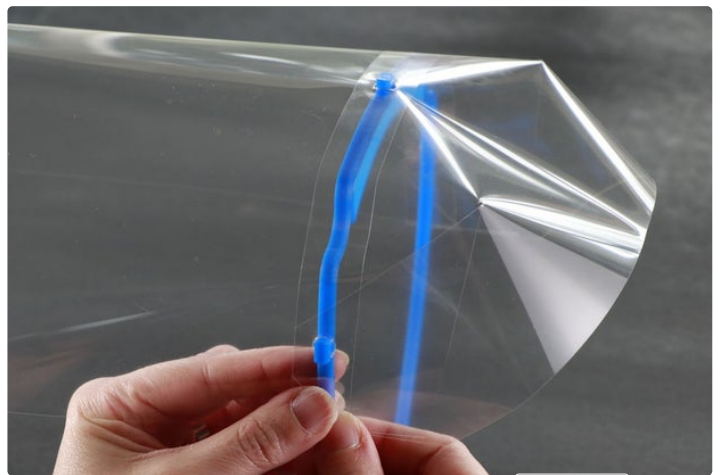
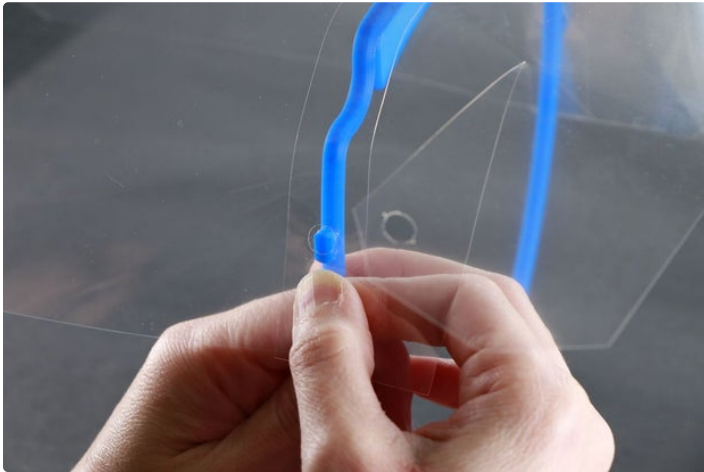
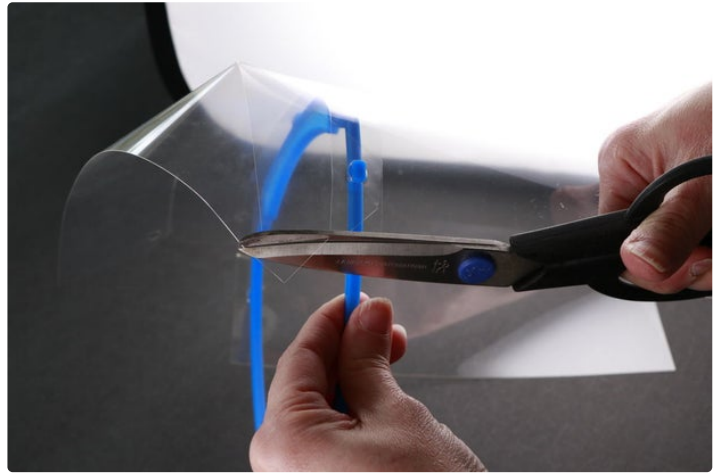
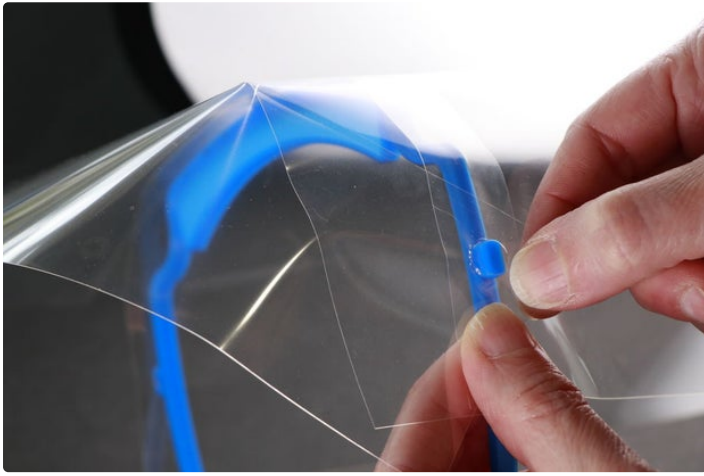
Cut a transparency sheet in half on the long axis to make 2 rectangles 4.25" x 11" each. Each rectangle makes one add-on. Use a 3-hole punch to make holes along one 11" edge, matching the hole spacing for your 3D printed frame (3-hole or 6-hole). Refer to the instructions for your frame design for spacing information. This punched edge is the bottom of your add-on. Use scissors to make a cut at the two bottom

corners of the add-on, as shown (or refer to pattern). On one side, slide the top section down to the bottom corner, overlapping the punched hole. Mark the location of the hole and punch. Repeat for both sides. Attach add-on to face shield frame over the full sized plastic sheet covering the face. Use scissors to trim any protruding sharp corners.









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