



Add MONSTER M4SK to your Costume Mask

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<https://learn.adafruit.com/add-monster-m4sk-to-your-costume-mask>

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Overview

The Adafruit MONSTER M4SK's screens are perfect for adding animated eyeballs to your costume mask. With some simple additions made from craft supplies, we can make the M4SK comfortable to wear and allow you to see your surroundings through the costume mask's eye holes.



[Adafruit MONSTER M4SK - DIY Electronic Eyes Mask](https://www.adafruit.com/product/4343)

Peep dis! Have you always wanted to have another pair of eyes on the back of your head? Or outfit your costume with big beautiful orbs? The MONSTER M4SK <https://www.adafruit.com/product/4343>

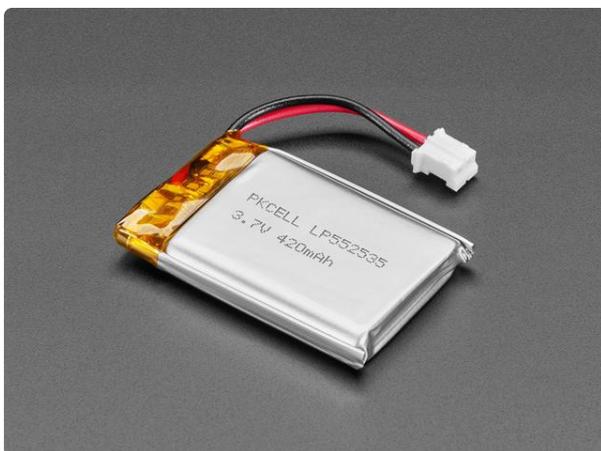
2x Convex Lenses



[Convex Plastic Lens with Edge](https://www.adafruit.com/product/3917)

The eyes have it! Add this little lens to make a big expression with our Spooky Eyes demo for microcontrollers or Raspberry Pi. These are plastic lenses, with brilliant clarity and a...

<https://www.adafruit.com/product/3917>



[Lithium Ion Polymer Battery with Short Cable - 3.7V 420mAh](https://www.adafruit.com/product/4236)

Lithium-ion polymer (also known as 'lipo' or 'lipoly') batteries are thin, light, and powerful. The output ranges from 4.2V when completely charged to 3.7V. This...

<https://www.adafruit.com/product/4236>



Materials

In addition to the parts above you'll need:

Costume mask (I used [this Dollface mask \(https://adafru.it/FI9\)](https://adafru.it/FI9))

Thin neoprene rubber or foam, such as a soft glasses case, thin mousepad, black craft foam, or a sleep mask

Two small Velcro strips

Scissors

Black permanent marker

Optional:

Black hose or other thin, stretchy fabric to cover the eye holes from within if your mask doesn't have this feature -- you may need to cut out larger eye holes on a mask such as this clown mask

Hot glue or contact cement

Black gaffer's tape

Mount the M4SK in the Mask



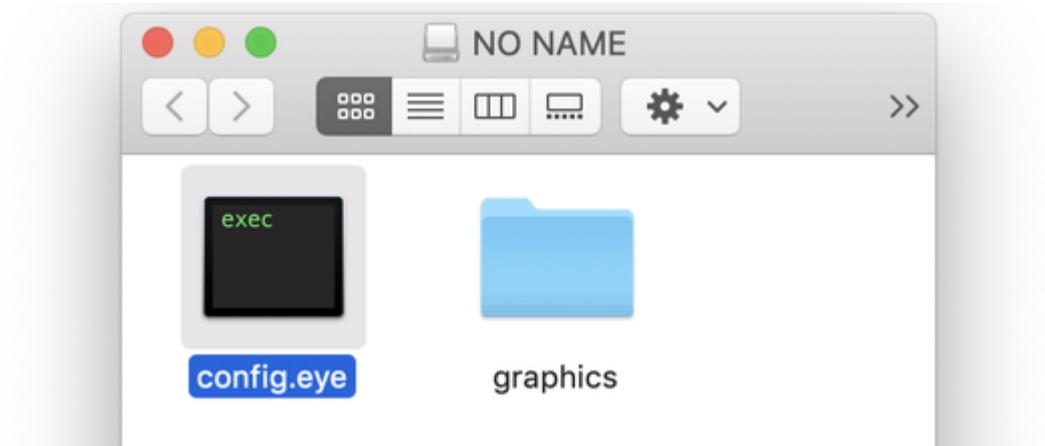
Quickstart

You should be familiar with the basic setup of the M4 Eyes project based on the most excellent [Adafruit MONSTER M4SK guide Quickstart \(https://adafru.it/FDD\)](https://adafru.it/FDD). Before you proceed with making your own texture maps, be sure you've got the [M4Eyes.UF2 \(https://adafru.it/FDD\)](https://adafru.it/FDD) working properly using the default [Hazel eyes graphics \(https://adafru.it/FDD\)](https://adafru.it/FDD).



Customization Basics

You will also need to be familiar with the how the eye system works -- check out [this Customization Basics page \(https://adafru.it/FDE\)](https://adafru.it/FDE) next. Make sure you're comfortable editing and saving the `config.eye` JSON file onto your M4SK and resetting the board to invoke your changes.



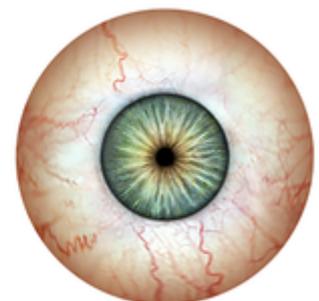
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Preparing Graphics

Another important section to absorb from the MONSTER M4SK guide (are you noticing a trend here? It's a very important guide!) is on [preparing graphics \(https://adafru.it/FDF\)](https://adafru.it/FDF). This is important so that we are all on the same page with regard to eye anatomy and terminology.

The most critical bit being the two texture maps we'll be using, how they work, and the image file formats/sizes to use.



adafru.it/FIb

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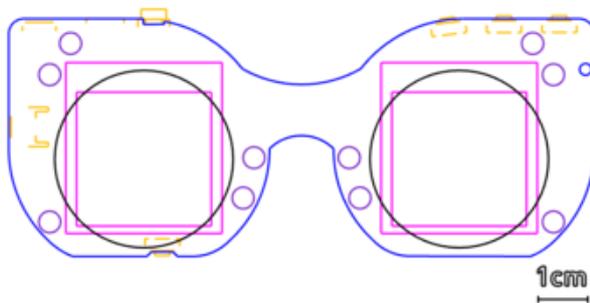
Custom Eyes

If you'd like to create fully custom eyes, [have a look at this guide \(https://adafru.it/F1c\)](https://adafru.it/F1c) before proceeding.

M4SK Holder

We'll kill an unprecedented THREE birds with one stone here:

1. Hold the lenses to the screens
2. Mount the MONSTER M4SK in the costume mask's eye sockets so we can still see out of the mask
3. Provide comfortable forehead padding



Template

You can measure the mask and lenses in order to mark your material for cutting, or print out the handy template.

To use the template to guide your cutting, download the `M4SK_template.pdf` file linked below and then print it at actual size (1:1 ratio) on your printer.

Cut it out along the blue board outline, and also cut out the black lens holder circles. This will then make a great way to mark up your foam or fabric M4SK holder.

Note: don't print the `.png` file to the right, that's not to scale and is for illustration purposes only. Please use the PDF linked below.

[M4SK_template.pdf](#)

<https://adafru.it/F1d>



Cutouts

If you have a glasses pouch or sleep mask, your work is nearly done when you start! If you're using a thin mousepad or craft foam, you'll want to cut out a piece just big enough to wrap around the MONSTER M4SK and tape or glue it into the sleeve shape.

Using either the template or some measurements taken from the board and lenses, mark and then cutout the two circles for the lenses so they'll rest right on top of the screens.



Optional Light Blocking

If you want to take an extra step to ensure no light leaks out from under the screens and into the lenses/eye sockets, you can use small strips of black gaffer's tape around the screen edges.

The lenses will still simply rest on top of the screens, but with light only coming from the screens, not their backlights.



Insert the M4SK

Connect the battery and then slide the MONSTER M4SK and battery into the sleeve.

Mark and cut out an opening for the USB port so you can later charge the battery and/or upload different eye texture maps and edit the `config.eye` file.



Add Lenses

Next, add the lenses to the sleeve. You can fit them through the top by stretching the holes a bit.





Eye Coverings

Some masks have black fabric mesh covering the eye holes, some may not (or you enlarged the eye holes yourself).

If you want to be able to see out of the mask but not have your own eyes visible (only the electronic eyes), get some black mesh fabric or black nylons, cut two pieces and glue them around the eye holes. Be sure you can see out of the eyes before permanently attaching the fabric.

With this mask, the electronic eyes are mounted high and the wearer can see through the lower portions of the eye holes camouflaged by the mesh.



Velcro Mounts

Two small strips of adhesive backed Velcro (hook and loop fastener if we must get generic about it!) are all it takes to securely mount the M4SK holder inside the costume mask.

Make sure the surfaces are clean of dust and oils before adhering the Velcro.







Now, you can simply put on the mask using the original elastic band, and you'll be able to see out from under the M4SK holder, yet your horrified onlookers will only see those big, beautiful animated peepers!

