Laugh Track Jacket

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https://learn.adafruit.com/laugh-track-jacket

Last updated on 2023-08-29 02:44:08 PM EDT

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Overview

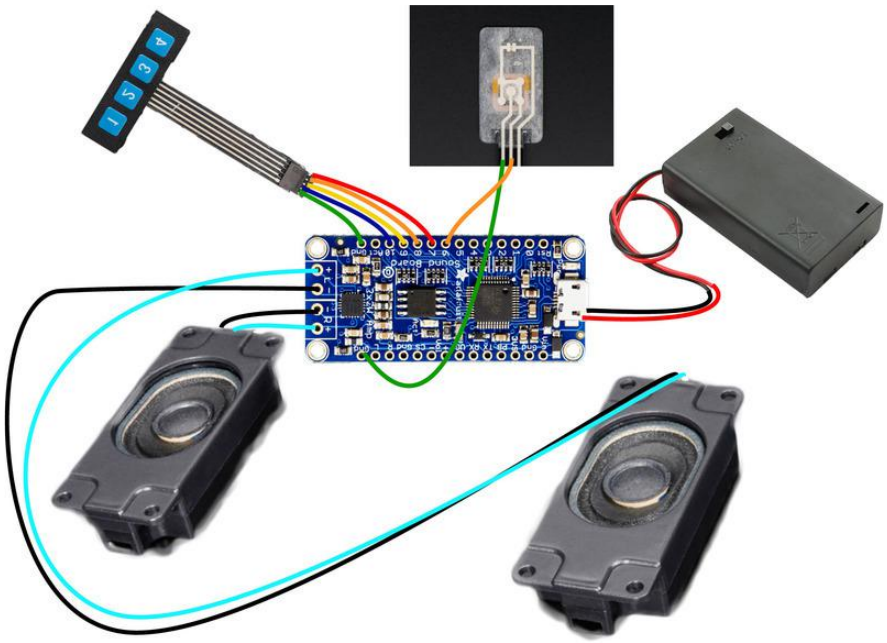
Bring your own sound FX to the party! Turn a blazer into your own personal theme music machine, foley artist, or comedy audience. Battery powered speakers in the pockets blast your sound while membrane switches in the pocket and lapel activate the audio.

Before beginning this easy soldering + sewing project, check out the Adafruit Audio FX Sound Board guide ()!

For this project, you will need:

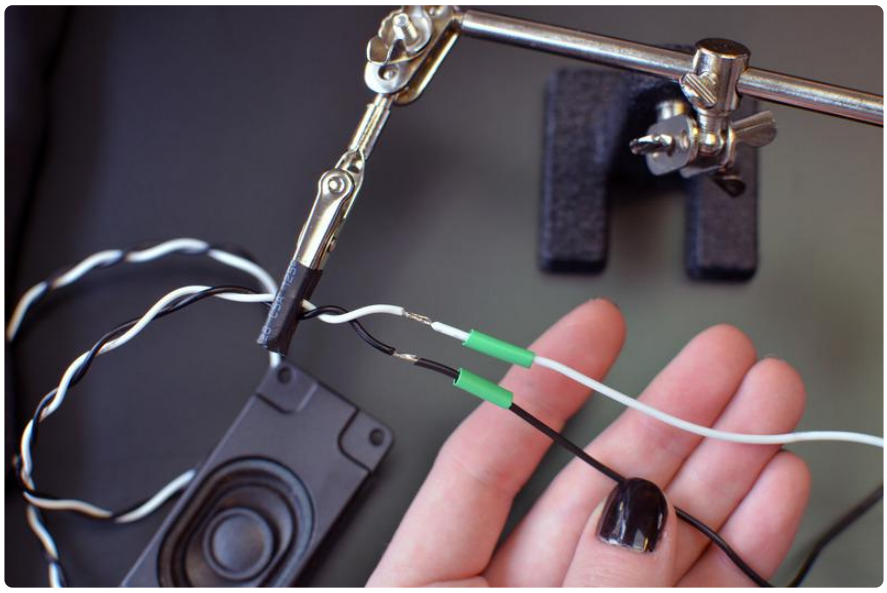
- Adafruit Audio FX board with Amp (), in 2MB () or 16MB () storage size
- stereo enclosed speaker set ()
- JST-PH 20pin SMT right angle connector ()
- membrane keypad ()
- membrane 1x4 keypad ()
- 3xAAA battery holder () and batteries ()
- ribbon cable with headers ()
- stranded wire ()
- soldering iron and tools ()
- needle and thread
- seam ripper
- scissors
- multimeter ()
- alligator clips () (optional)

Circuit Diagram

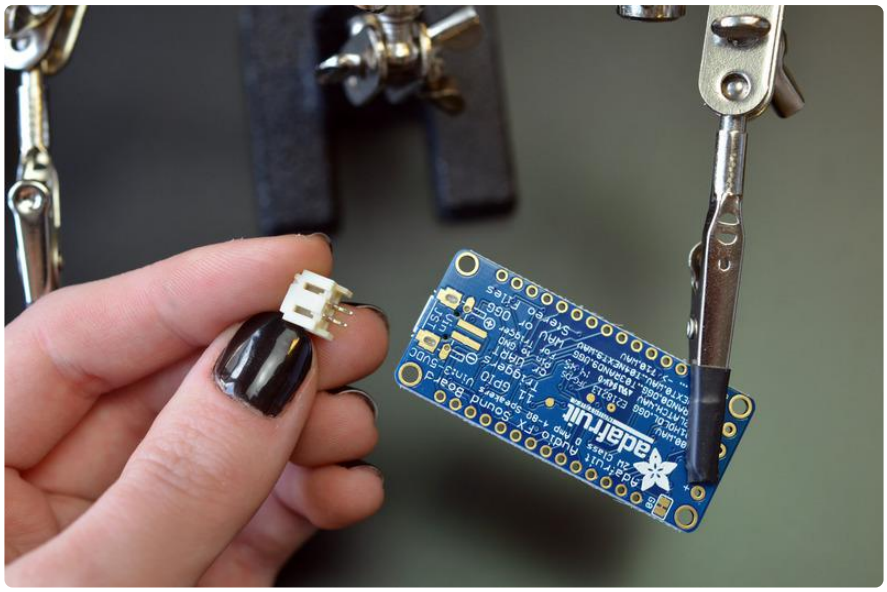


Click to enlarge.

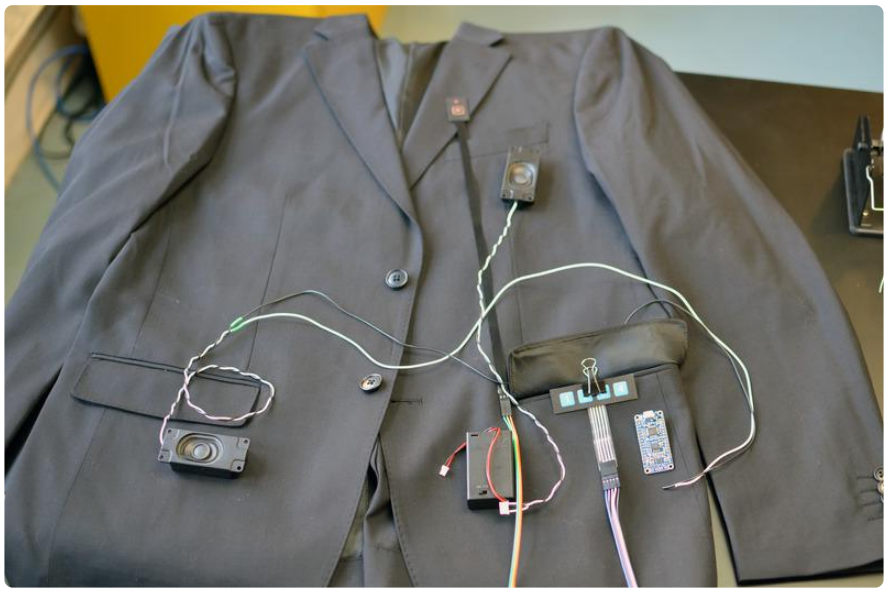
Prepare Components



Solder long stranded wires onto one of the speakers so that it can reach all the way to the second jacket pocket.



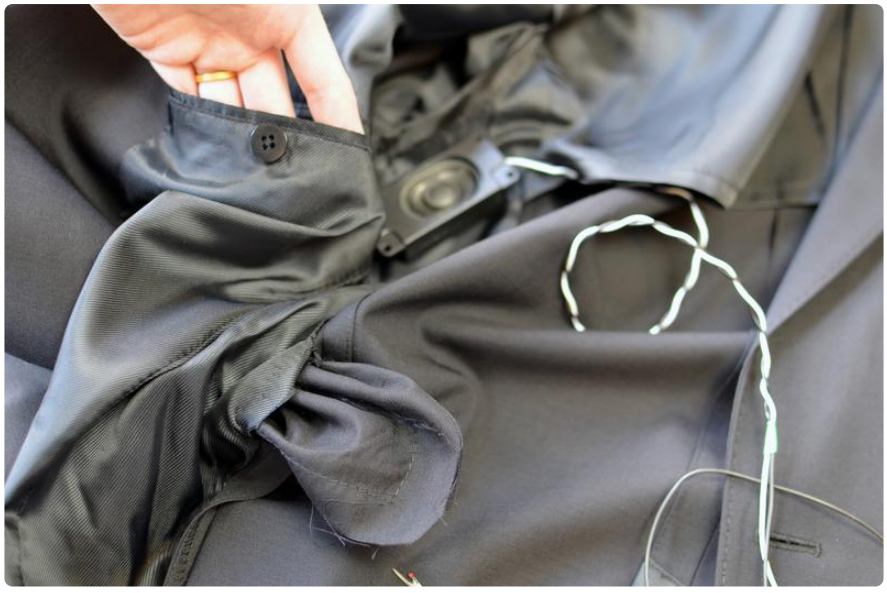
Solder a JST battery connector to the back of the audio board.



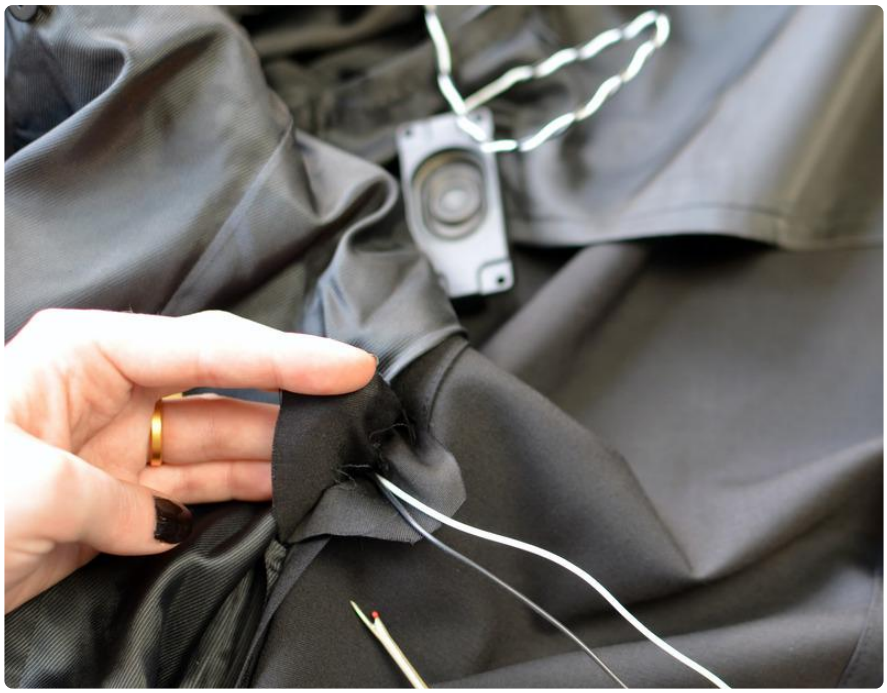
Position your components on the jacket while flat on a surface, and plan where your triggers, speakers, and battery will go. Use jumper wires to extend the membrane keypad wires.

Use a seam ripper to carefully open seams inside the lining of the jacket to gain access to the pockets for the next step.

Assemble Circuit

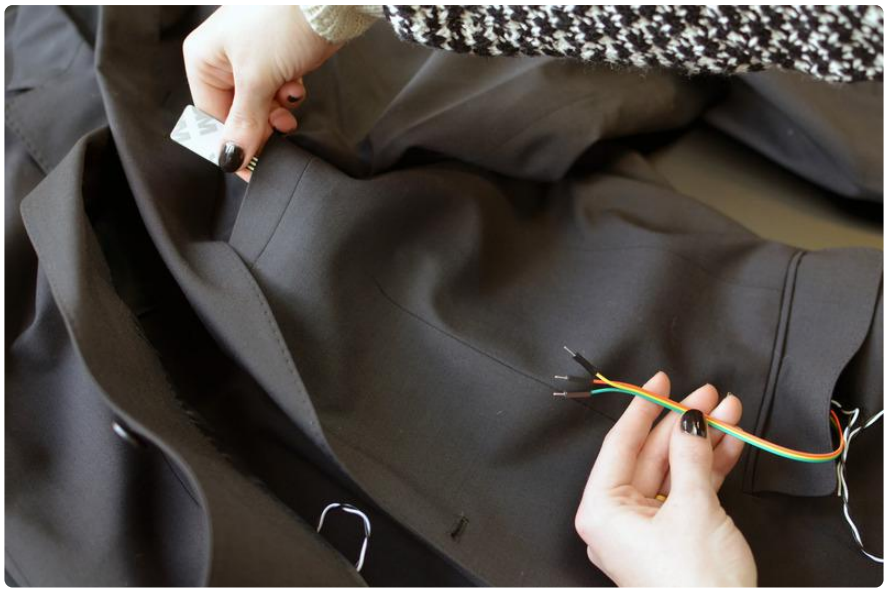


Find the seams at the bottoms of the pockets where you wish to store the speakers, and use a seam ripper to open small holes for the wires to poke through.

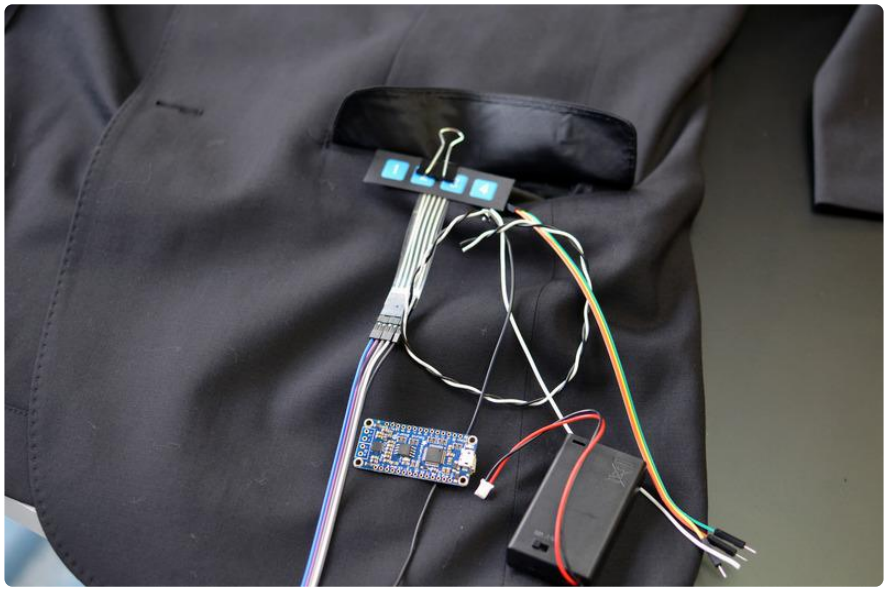


Thread the wires through.

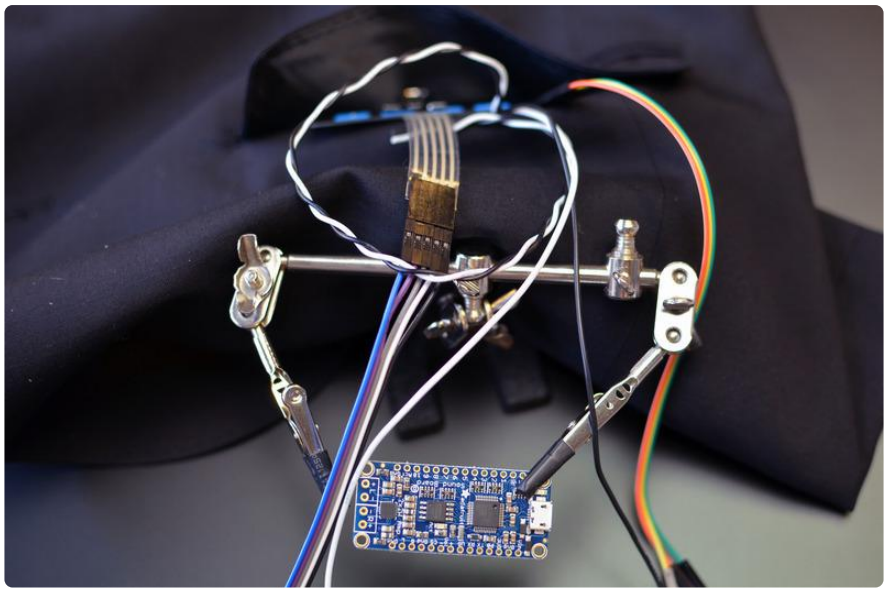
Always leave a little extra wire slack! As you move your body you want the wire to stay loose enough not to pull on any of the components.



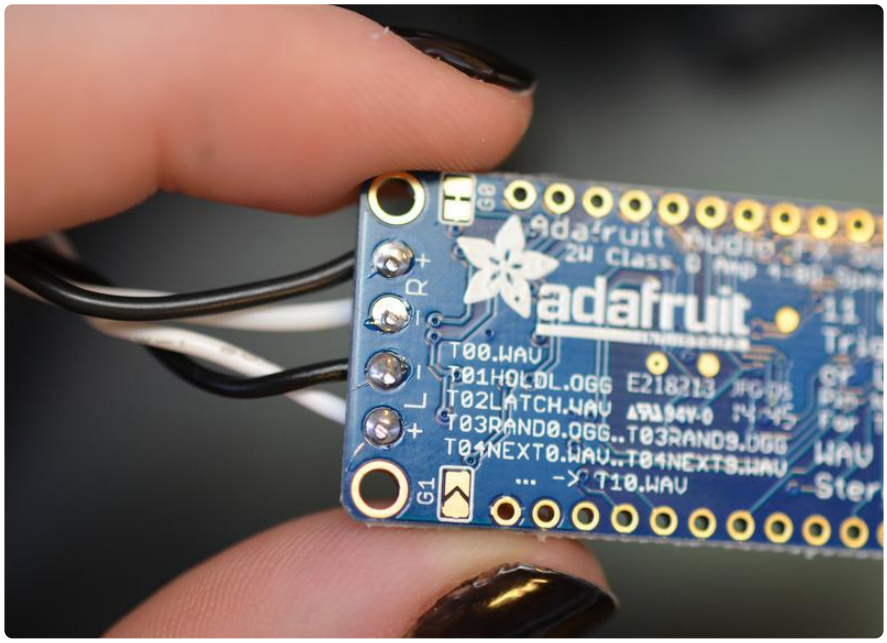
Continue installing components and routing wires back to one pocket using your seam ripper. This step is a bit awkward as you have your arms inside the jacket lining trying to route tiny wires.



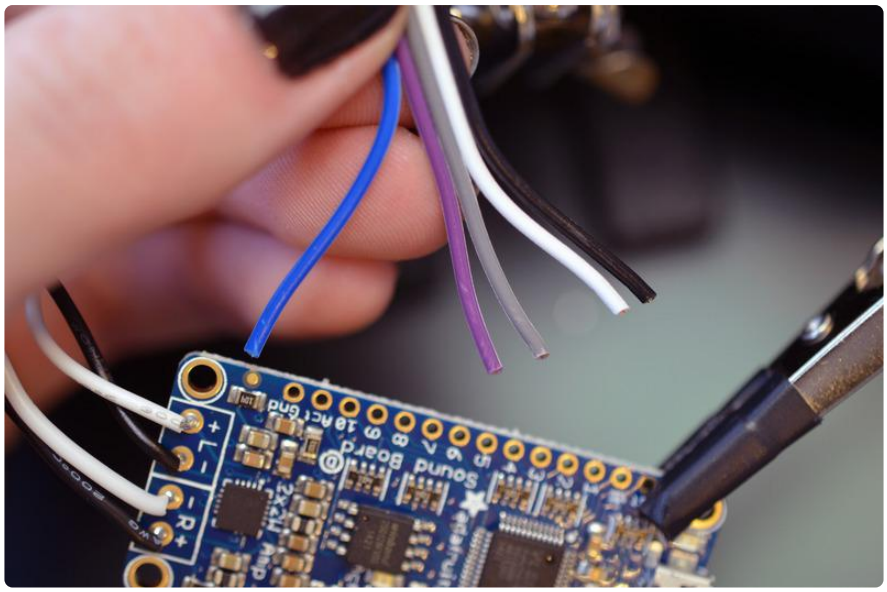
All your wires should convene in one pocket where you'll store the audio board and battery.



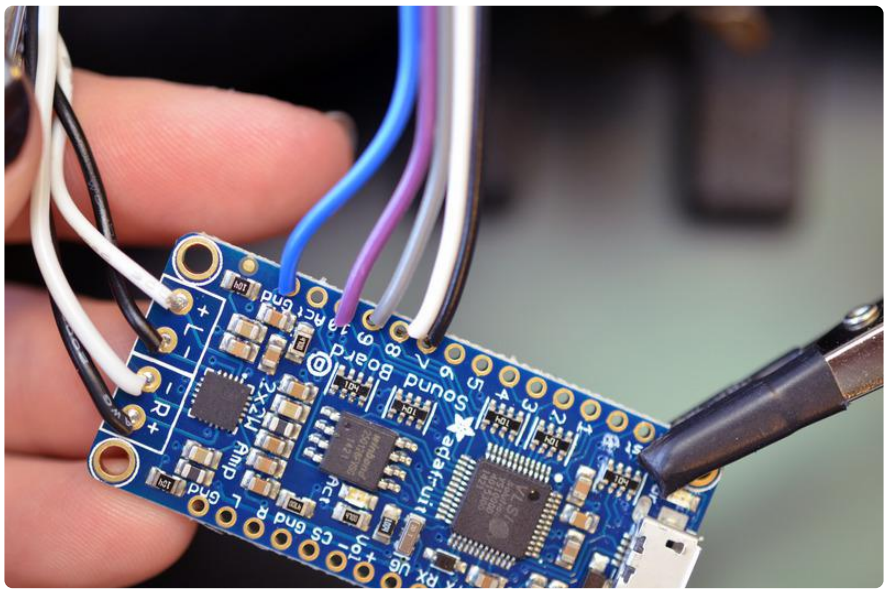
Set up your audio board in a pair of helping hands or panavise, and bring over the wires sticking out of th pocket. Be careful when using your soldering iron near the jacket, accidentally grazing it could leave permanent burn marks.



Solder the speaker wires directly to the outputs marked on the audio board.

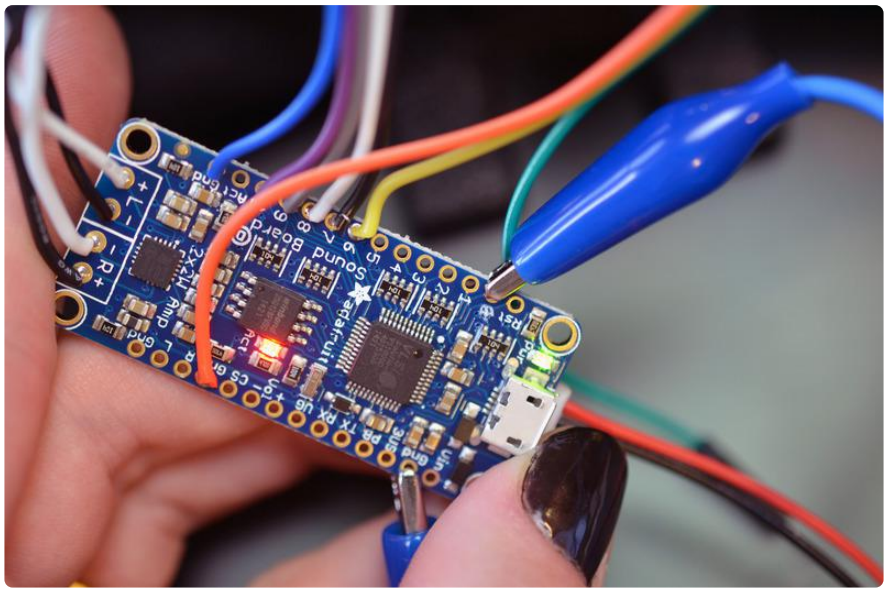


Prepare the ribbon wires coming from the triggers by snipping, stripping, and tinning the leads.



Solder these wires to the trigger pins and ground, according to the circuit diagram.

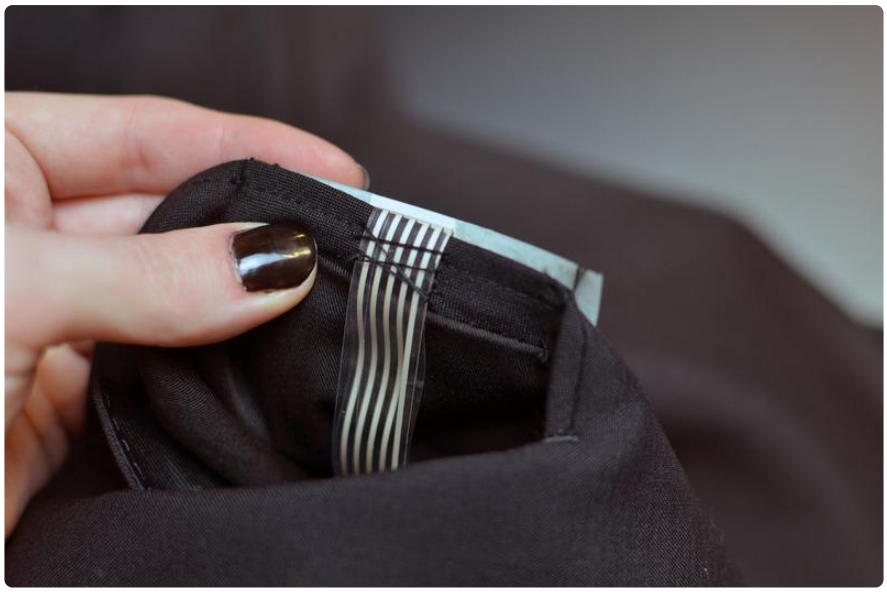
Stitch and Load Sounds



Test that your audio board is working! Plug in the battery pack and switch it on. Use an alligator clip or piece of wire to connect GND to pin 0. A sample sound should play.

Plug in the audio board over USB and load the sounds you like. Refer to the Audio FX Board guide () for more info on loading sounds.

Use a needle and thread to secure the memberane switches to your jacket.



Also tack down the speakers and sound board using the provided mounting holes. Restitch any seams you cut with the seam ripper and tack down any remaining wires running through the inside of the jacket. Enjoy!