Sound Sample Sweater

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https://learn.adafruit.com/sound-sample-sweater

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Table of Contents

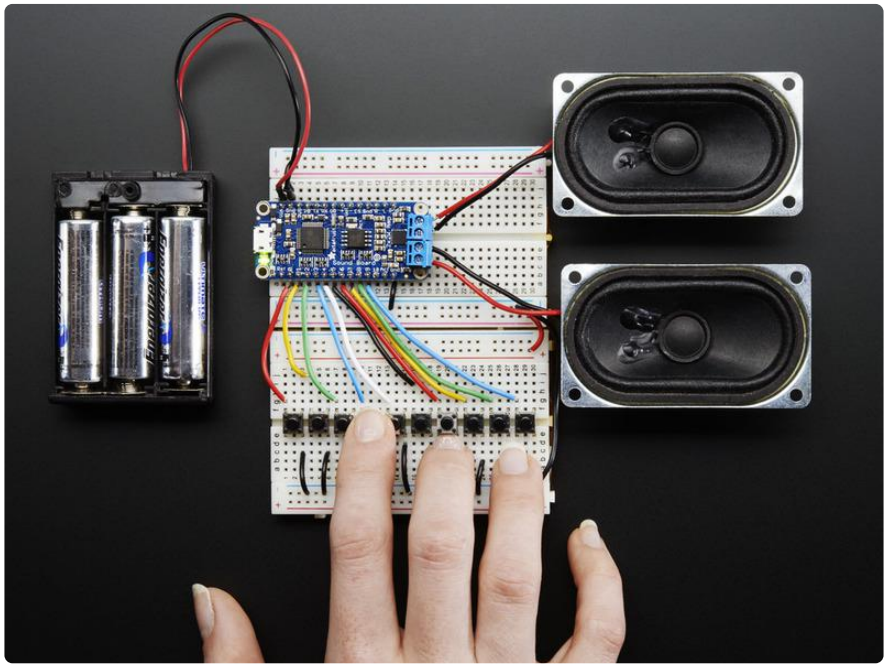
Overview

This holiday season, build some sound effects into your party sweater and turn up the cheer with sleigh bells, Xmas songs and greetings!

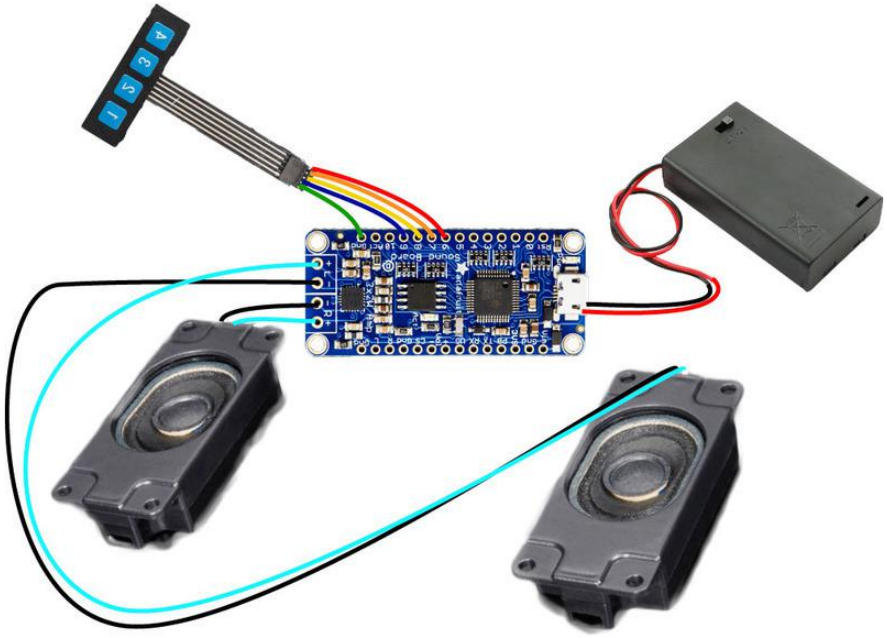
This is a simple soldering and sewing project. No microcontroller programming is required! Learn more about the Adafruit Audio FX Sound Board in its learning guide ().

For this project you will need:

- Adafruit Audio FX Sound Board with amp (2MB or 16MB)
- enclosed speaker set
- membrane keypad
- 3xAAA battery holder and batteries
- premium jumper cables
- soldering equipment and tools
- sweater and scrap of fuzzy fleece fabric
- needle and thread
- sewing machine (optional)
- scissors



Circuit Diagram



Mod Sweater

Pick a sweater to build your project. I'm using an old sweater I've had since eighth grade. It's pretty heavy cotton and not very stretchy. The sleeves are falling apart a little but I'll cover that up.

Seek out garments that are sturdy and not too delicate-- these components amass to about the size and density of a checkbook-style wallet, so lightweight cashmere might not be a smart choice.

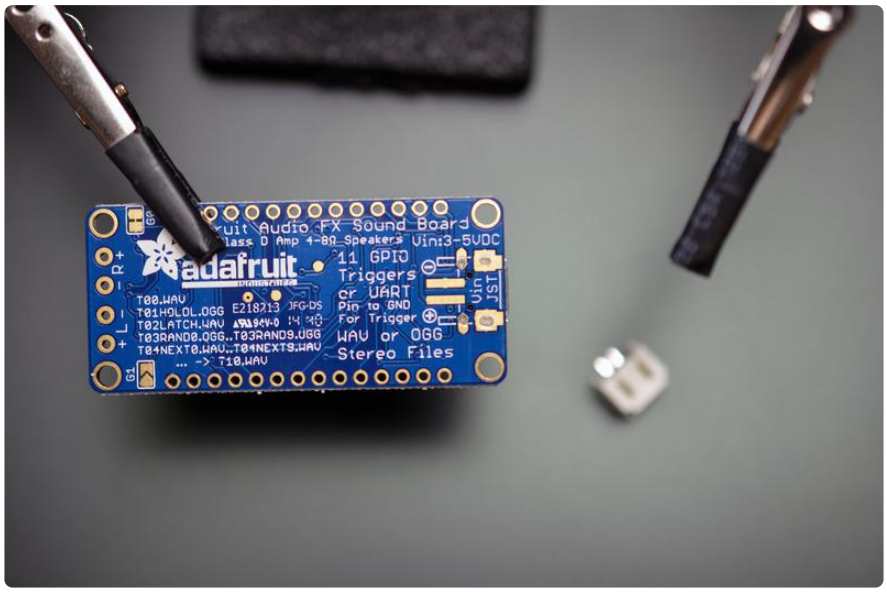
Cut a kangaroo pocket from fuzzy fleece fabric-- it's very forgiving. Pictured is Cuddle Fleece from Fabric.com ().

Turn under the edge and pin the pocket to the front of the sweater.

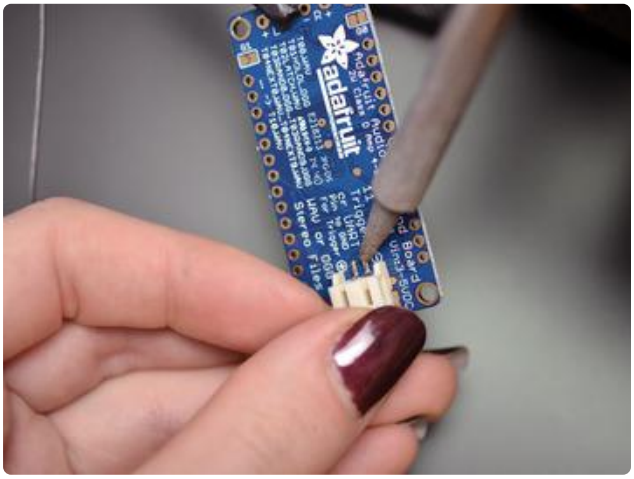
You can stitch the pocket on by hand or use a sewing machine. Remember to only stitch the top and bottom edges of the pocket to the sweater, and then stitch a hem by hand around the pocket openings.

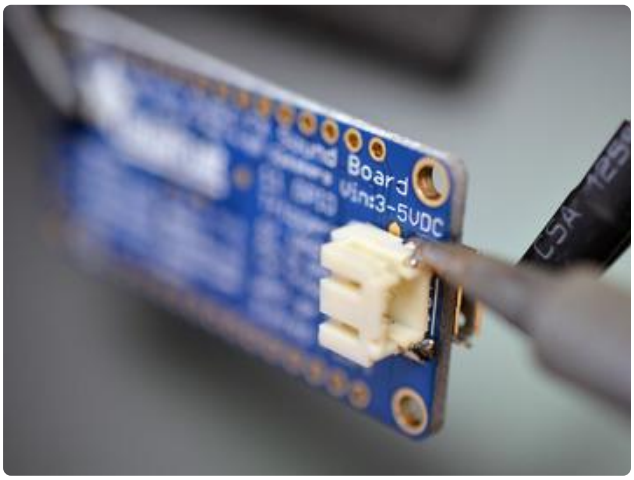
If you want to embed switches in the sleeves, you can cover them in fuzz too. I wanted to cover up the deteriorating sleeves on this old sweater anyway!

Assemble Circuit



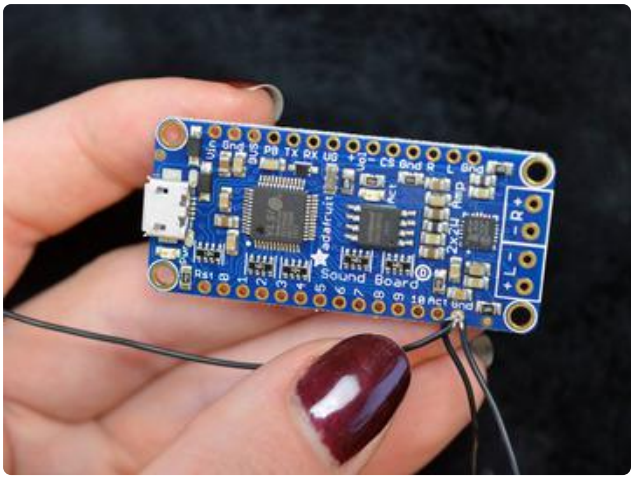
Set your audio board up in a pair of helping hands and heat up your soldering iron. Always solder with good lighting so you can see what you're doing.

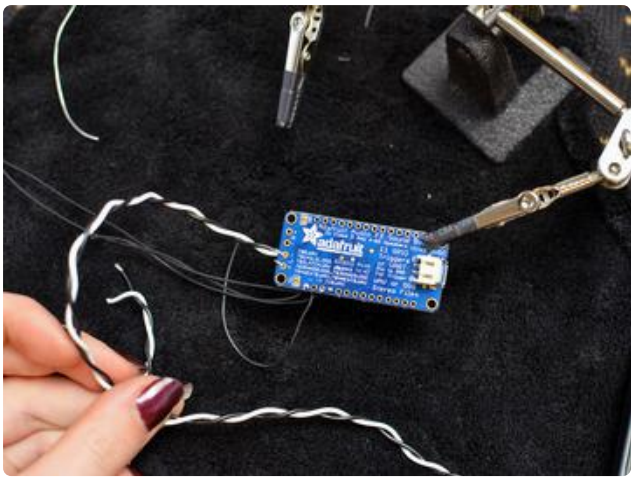




Tin the long battery pads on the audio board with a little solder. Position the JST battery connector on the pads and reheat the connections while pressing the jack to the board for a flush fit.

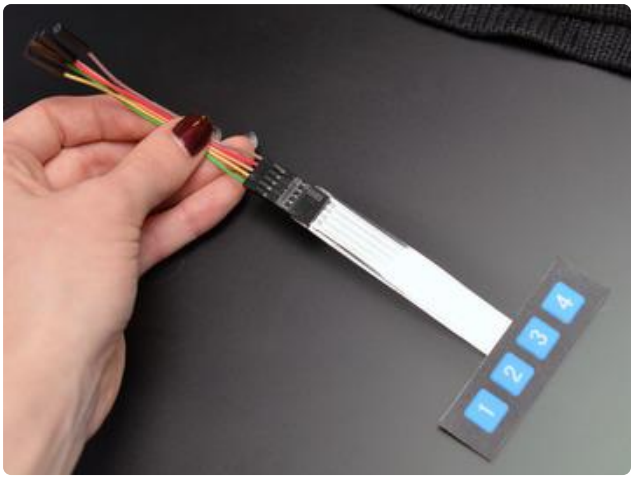
Also solder the metal tabs on each side of the battery connector to the corresponding pads on the circuit board.



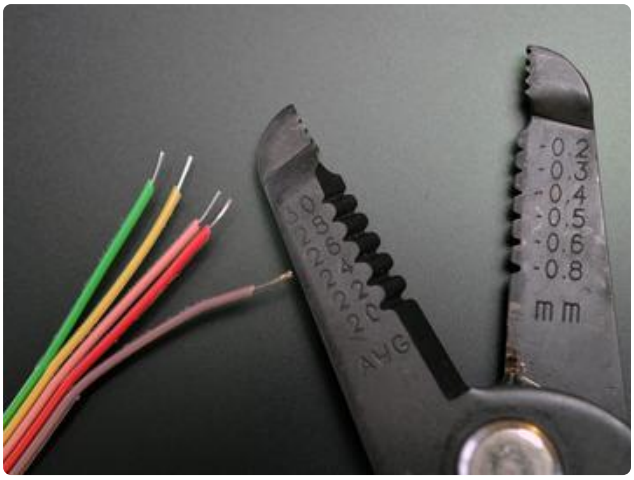


If you have any arm switches, combine their ground wires and an extra for the membrane button pad's ground. Twist the wires together and solder to GND on the circuit board. If you forget, there are other GND pads around the circuit board you can tap into later.

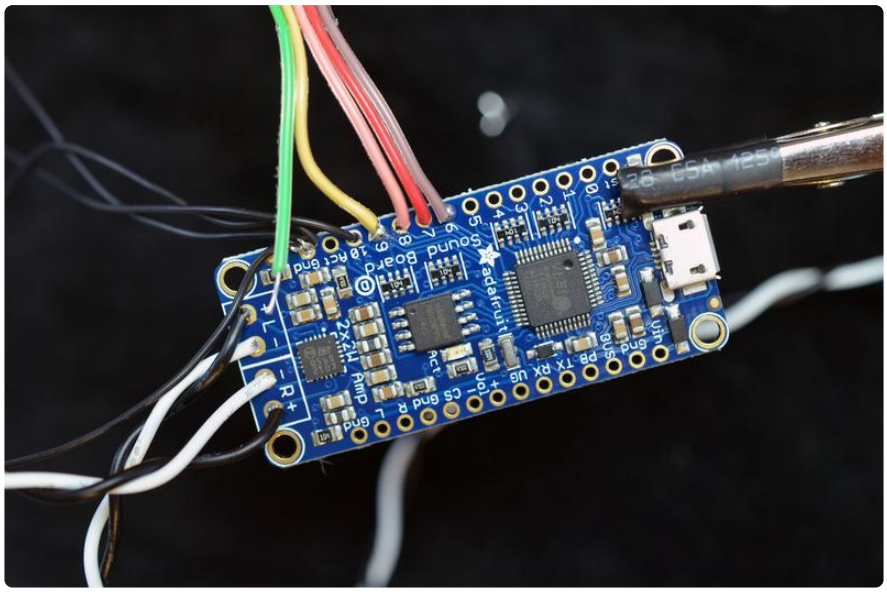
position your speakers at the edges of the kangaroo pocket and trim the wires with a bit of slack to reach your circuit board. Strip the wire ends, twist and tin the leads, then solder them to the speaker outputs on the audio board.



Premium jumper wires can extend the leads on the membrane keypad. Plug in a strip of five headers and strip the wires at the opposite end.



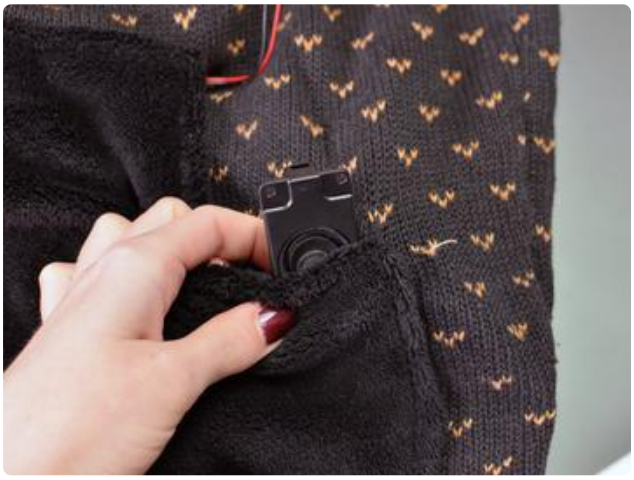
Twist and tin the leads with solder. The wire closest to the end of the strip with the button marked 1 is the ground wire.

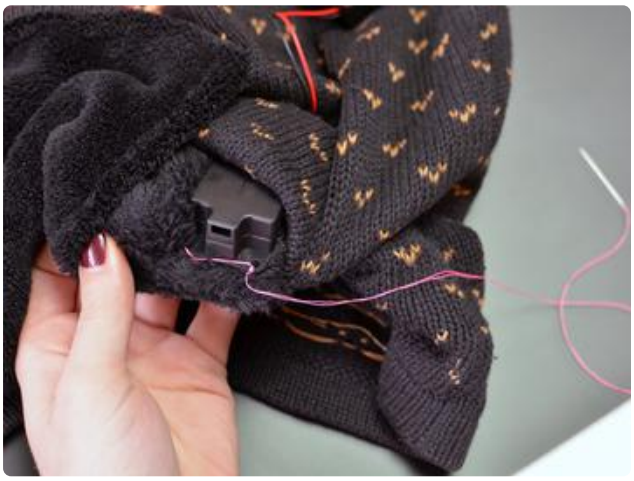


Solder the wires to the numbered pads on the audio board-- you can set up which button makes which sound when you load the files.

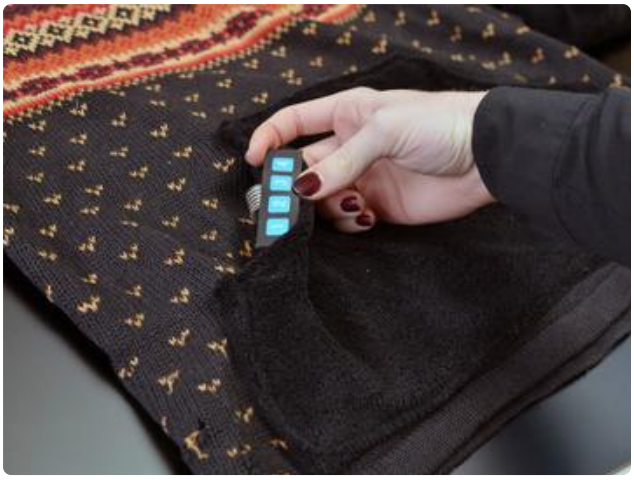
Solder the membrane keypad's ground wire to a GND pad on the circuit board.

Lay out your circuit on the outside of the kangaroo pocket. Grab your battery pack too. Position the membrane button panel to sit at the inside edge of the pocket opening.





Reposition the circuit on the inside of the pocket and stitch the speakers in place using the mounting holes at the corners. I'm using a contrasting thread so you can see the stitches better!

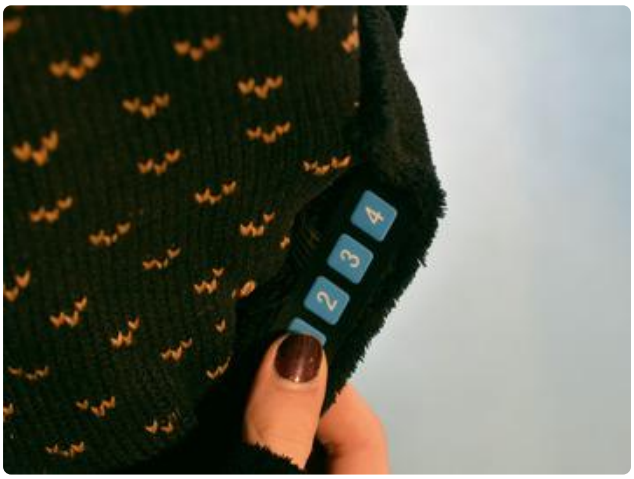


Likewise stitch the audio board to the sweater using the mounting holes at the corners.

Peel off the adhesive backing from the membrane keypad and stick it inside the pocket's opening. You can optionally stitch it to the pocket in a few spots if it does't stick well to your pocket fabric.

Head over to the Audio FX board tutorial to learn how to load sounds onto your board! ()

Wear it!



Use the membrane keypad to activate the sounds of your choosing and delight/ annoy those around you! Happy holidays!