



3D Printed Glow-Spike Bracelet

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<https://learn.adafruit.com/3d-printed-glow-spike-bracelet>

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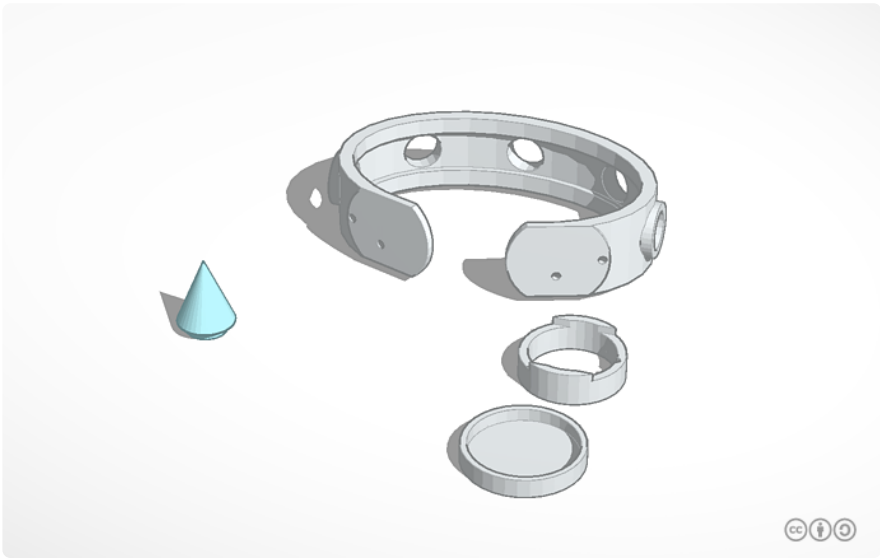
3D Printing

Fire-up your 3D printer... it's time to make a fun and glowy wearable!

Tinkercad is a great tool for creating 3D models. It's online, and it's easy to use.

Print the parts below in any color plastic that suits your fancy - clear or natural PLA works great for the spikes.

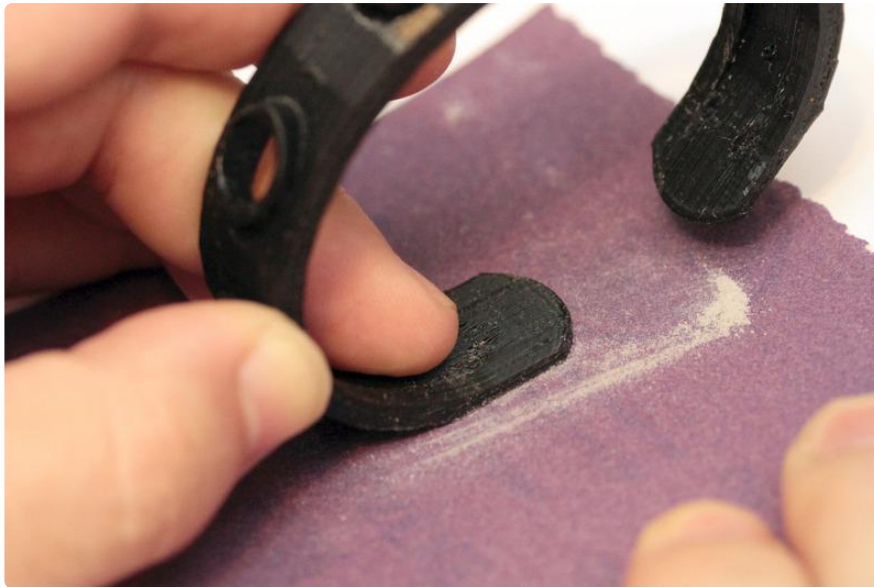
You will have to print the bracelet with rafting... to support the holes where the LED spikes are inserted.



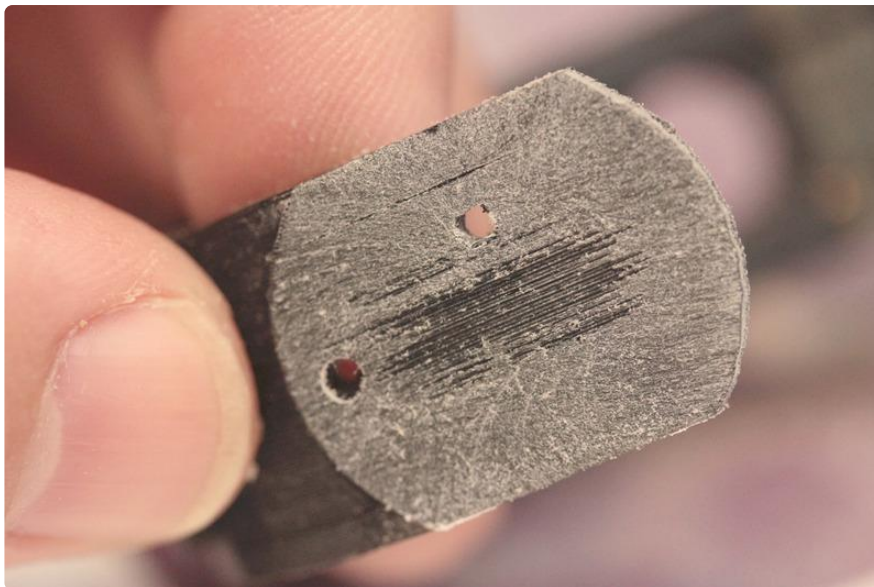
LED Spikey Bracelet on Tinkercad

Battery Compartments

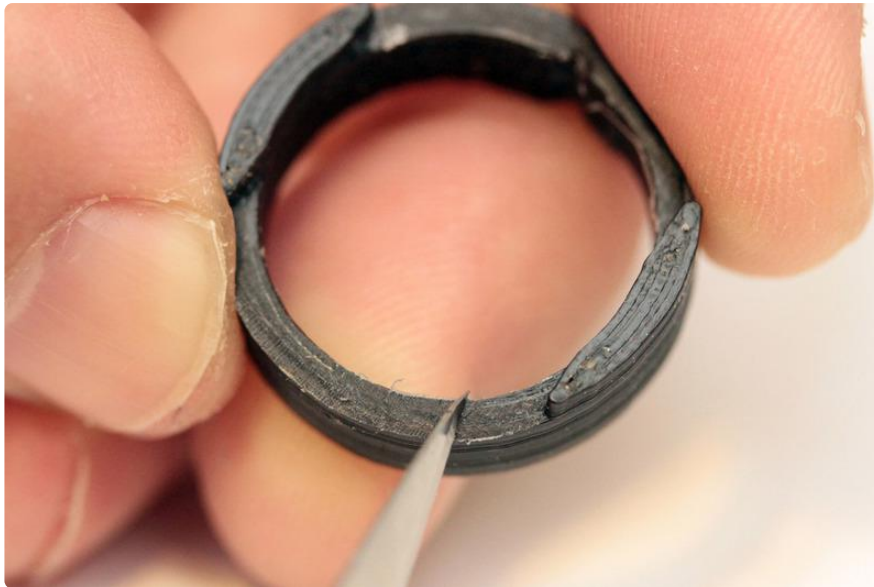
Sand the outside of the batter compartment flat... glue will stick better and the battery compartments will be much stronger.



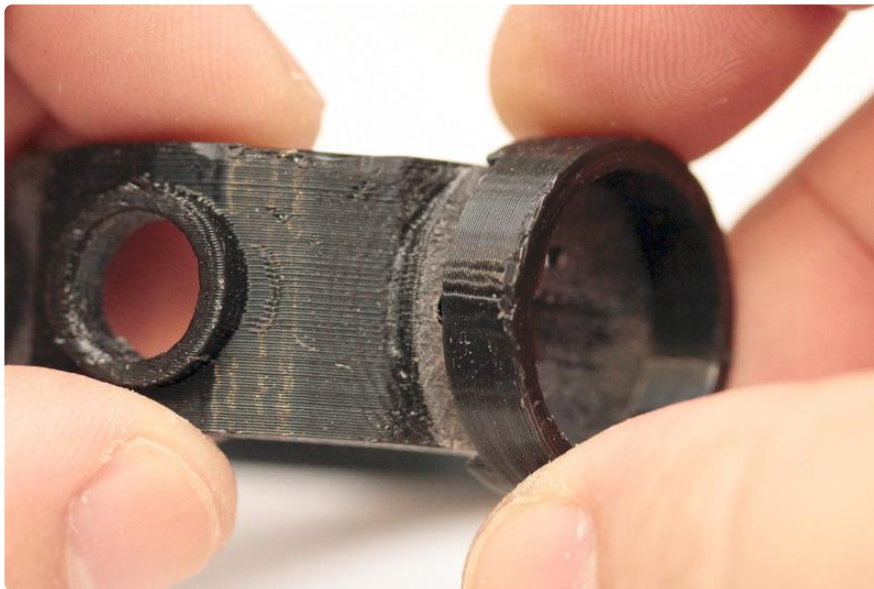
Did you know that when you add super glue to the plastic dust it creates a super strong bond?



Scrape the battery compartment ring flat on the side that meets with the bracelet.



Test-fit your parts... snug as a bug on punk rock rug!



Super glue is great and dries in no time. When you press the two part together, align the notch in the ring with the wire hole on the bracelet.



Press and hold for 20 or so seconds... and then repeat these steps for the other side.

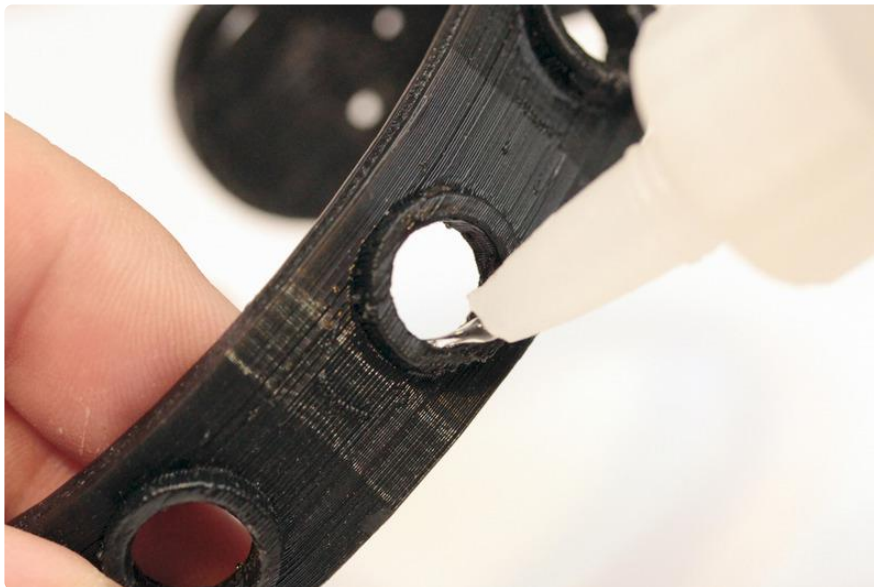


We're ready to install the spikes, LEDs, and wire it all up.



LED Spikes

Add a little bit of adhesive around the neck, where each LED spike will be inserted.



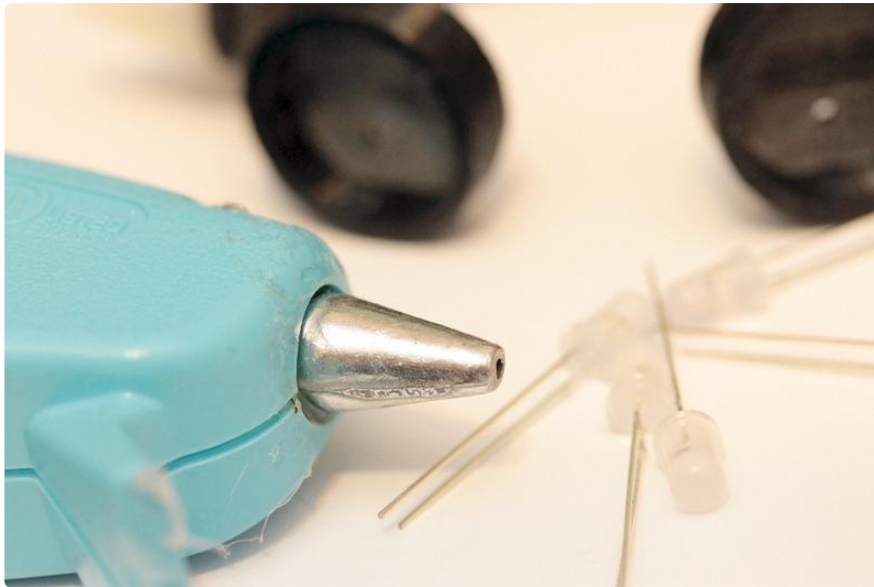
Depending on what kind of adhesive you use, you might want to set the bracelet aside for a little while to cure.



Repeat for each of the five spikes.



Grab your trusty hot-glue gun and five LEDs.



When gluing-in your LEDs, make sure that the short and long legs of the LEDs are all oriented the same.

This will help simplify the soldering step.



Don't snip the legs of the LEDs! We will use them to wire-up the circuit.



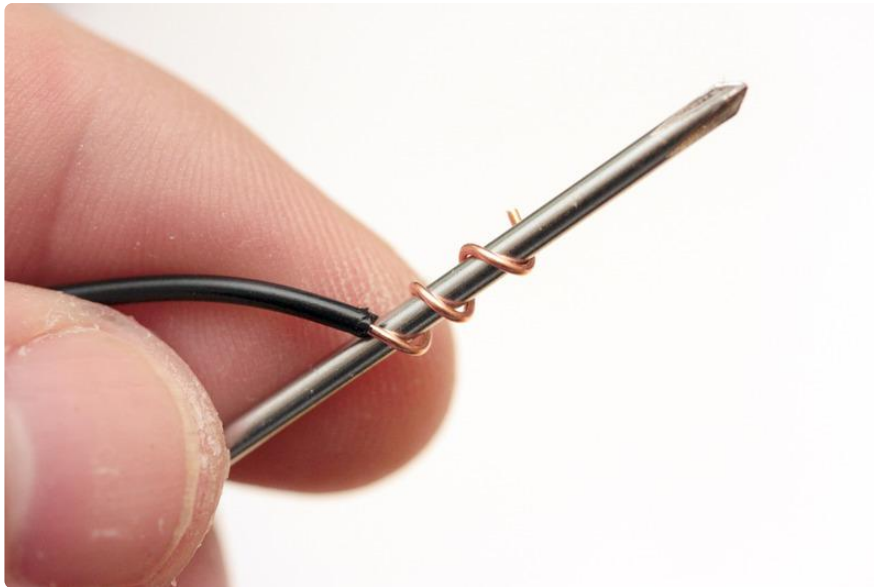
Wiring / Soldering

Start at one end of the bracelet, and bend the legs of the LEDs to their nearest neighbor. In most cases, they will overlap just enough to solder the two connections together.

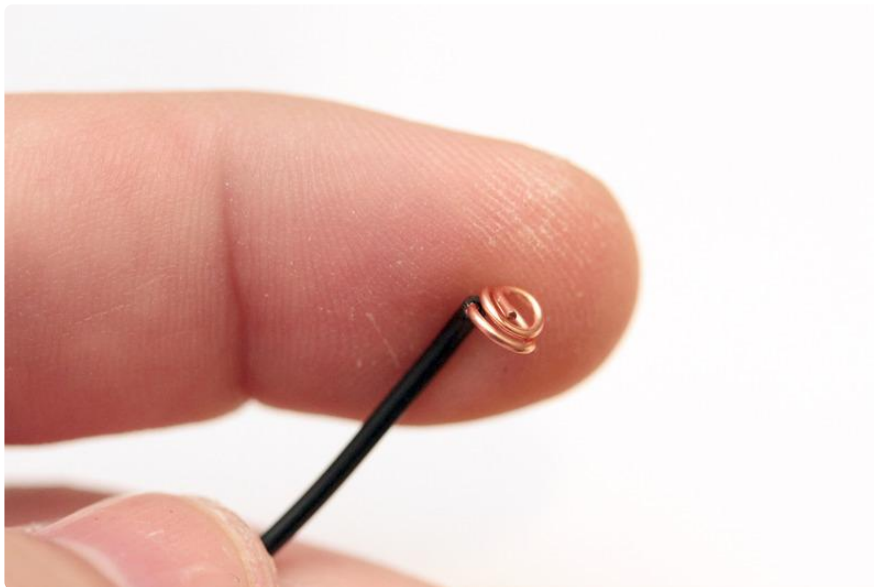
Continue soldering short legs to short legs and long legs to long legs until you reach the other side of the bracelet.



Take a small bit of your hookup wire and strip the insulation about 3/4 of an inch down. Wrap that around a small screwdriver.

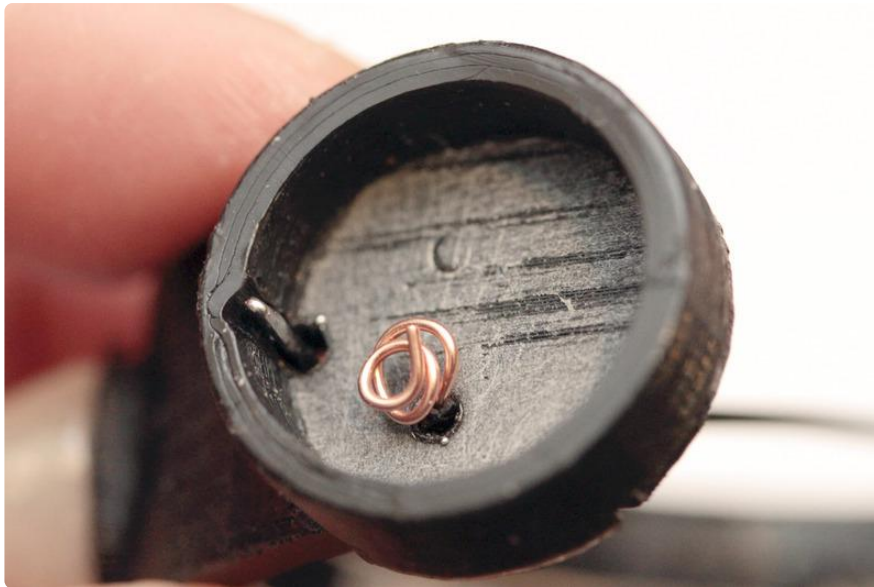


Smash the coil...



And pass the wire through the hole in the base of the battery compartment.

Grab your other spool of hookup wire, and pass 1/4 inch of bare wire up through the bottom of the battery compartment.

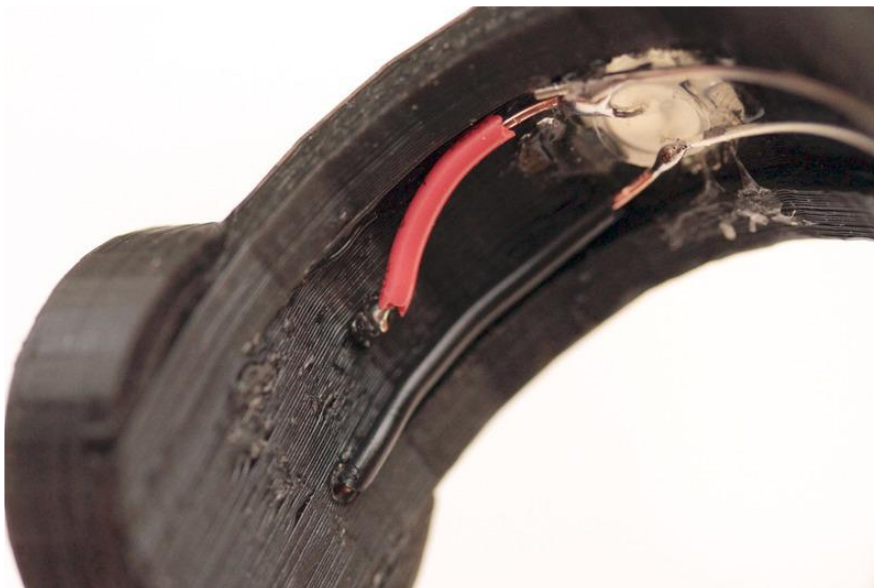


Solder each to appropriate legs of the LEDs.

BLACK = negative = shorter leg

RED = positive = longer leg

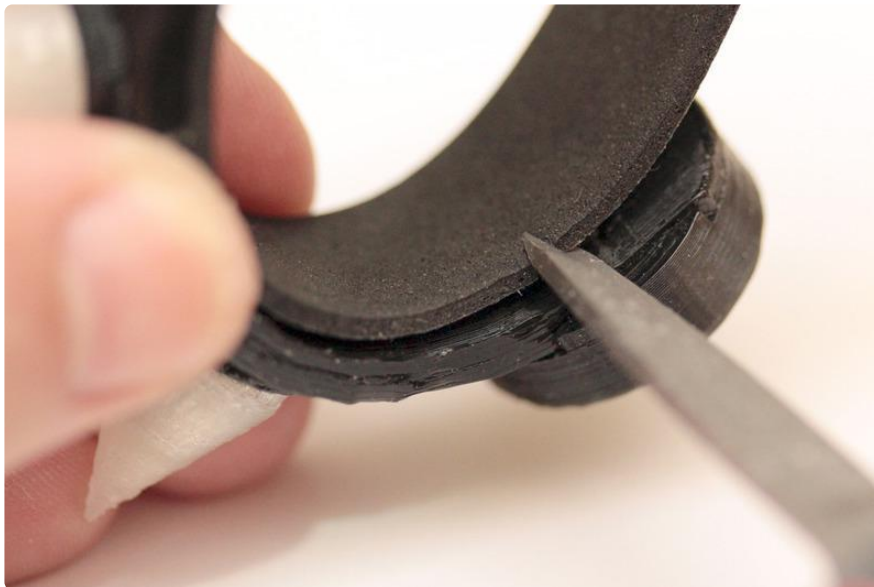
Repeat this step for the other side.



To protect the wires, you can cover them with electrical tape... I had some sicky-back foam handy.



Trim to fit!



And install your batteries. The bracelet will work with just a single battery, but won't last quite as long.



What are you waiting for?

Go show somebody what you made!