



# Moana Glowing Heart of Te Fiti Necklace

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<https://learn.adafruit.com/moana-glowing-heart-of-te-fiti-necklace>

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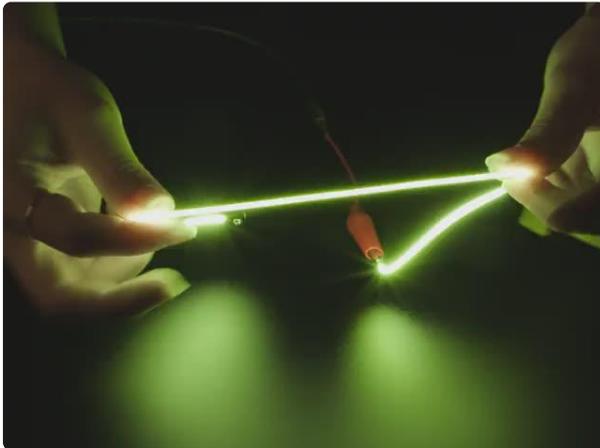
# Overview

I am Moana of Motunui. You will board my boat, sail across the sea, and restore the heart of Te Fiti.

Create your own Heart of Te Fiti necklace and make it glow using a coin cell battery and Adafruit's nOODs - little glowing noodles of light.

nOODs are very cool. They're little silicone-coated strands of teeny tiny LEDs. They're extremely flexible and easy to use. One nOOD works from a single coin-cell battery, with no microcontrollers or noisy inverters needed. These things are absolutely perfect for tiny, self-contained costume pieces. Add some magic to someone special's day!

## Parts



[nOODs - Flexible LED Filament - 3V 300mm long - Lime Green](#)

Our favorite food when hacking on code or electronics is a hot bowl of noodles - and around NYC these are often called 'noods'! What we've got here are flexible LED...

<https://www.adafruit.com/product/5507>



[20mm Coin Cell Breakout w/On-Off Switch \(CR2032\)](#)

Simple but effective - this sewable breakout board has a CR2032 coin cell battery holder soldered on, an on/off switch and 0.1" pitch breakout pins for easy connecting. Great for...

<https://www.adafruit.com/product/1871>



## CR2032 Lithium Coin Cell Battery

A perfect match for our sew-able coin cell holder. This non-rechargeable coin cell is CR2032 sized: 20mm diameter, 3.2mm thick. It...

<https://www.adafruit.com/product/654>

## Tools & Skills

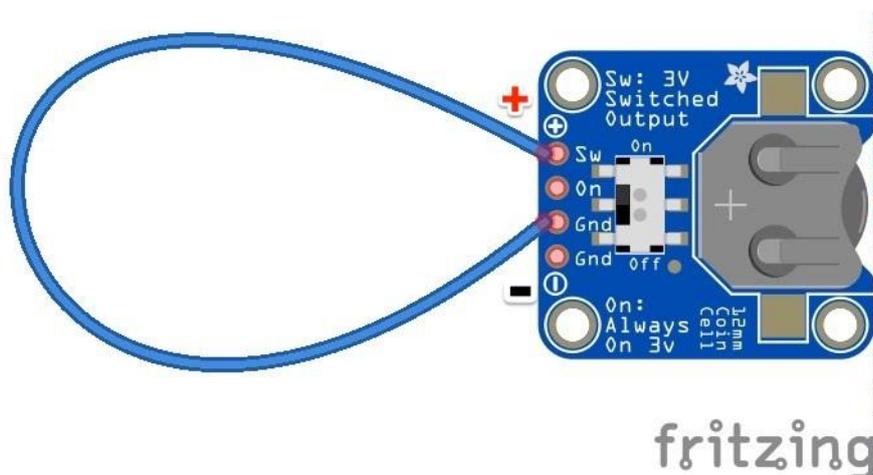
The electronics build requires a little bit of soldering, so you'll need a soldering iron and accessories.

I've 3d printed my necklace using a resin printer, though you can easily use a regular 3d printer as well. Or, take a look online to find a premade one that you can modify. The electronics portion of this tutorial is really simple, and with a little creativity you can make just about any translucent necklace glow.

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## Wiring Diagram

### One nOOd



The wiring for this project is very simple. The + side goes to SW (switch) and the - end goes to Gnd.

[Here's how to identify the + and - ends \(\)](#). Or, you can just quickly touch the ends to the pins with the power switched on. When the nOOD lights up, you've got it right.

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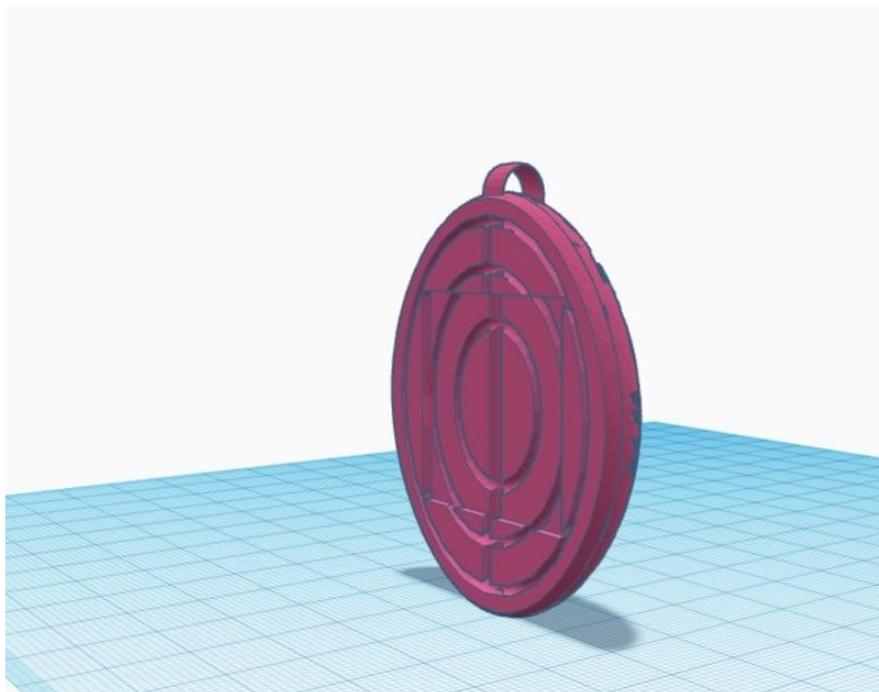
## 3D Printing

This is a popular design, so it was easy to find a good .stl file on [Thingiverse \(\)](#).

I downloaded the file and then uploaded it to [Tinkercad \(\)](#). Tinkercad is a fantastic free online editing program for .stl files. It's pretty easy to use if you just want to make simple edits, and if your .stl file is not too complicated. It's perfect for this project.

I used Tinkercad to flatten the back of the necklace, then added a channel for the nOOD and a slight indentation for the battery case.

Take a look at the video at the top of this guide to follow along with the design process in Tinkercad.



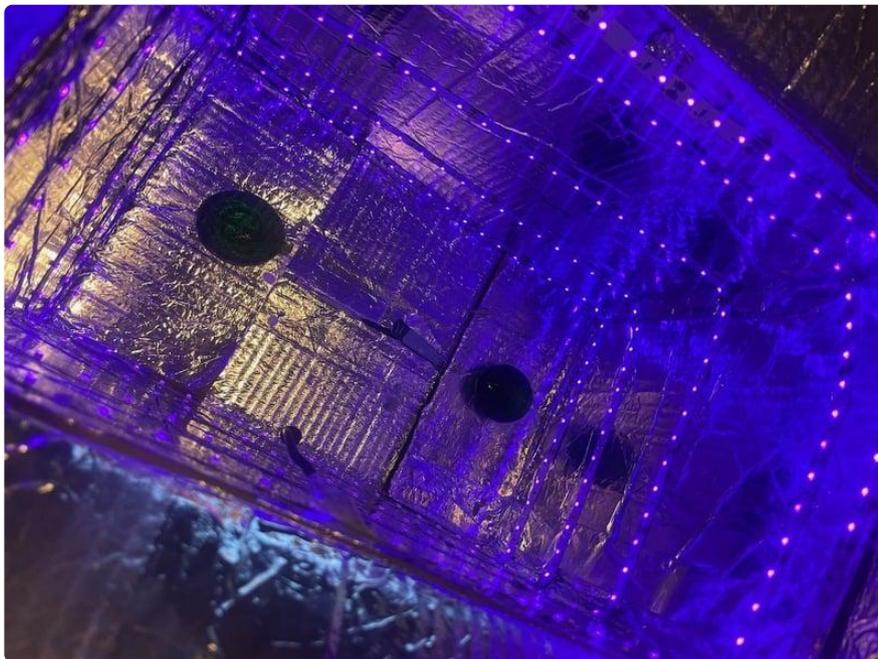
Moana\_Necklace\_wire\_channel.stl

I partnered the Ruiz Brothers to create a press-fit back for this necklace. It's not necessary to have a backing, but it can be nice, especially if you're making this for a child or want to wear it as a cosplay where you don't want the back swinging around and showing.

## Necklace-Cover.stl

1. Turn off the printer and remove the resin vat.
2. Pour isopropyl alcohol (IPA) into a container and place the print in it.
3. Let the print soak in the IPA for 5 to 10 minutes.
4. Use a pair of tweezers or pliers to gently remove the print from the IPA.
5. Rinse the print with water to remove any remaining IPA.
6. Use a paper towel or cloth to dry the print.
7. Post-cure the print with UV light if desired.

Note: It's important to handle the print with care, as it may still be fragile after removing it from the resin.



For post-curing a resin print, you can use a UV light source with a wavelength of 385-405 nm. This is the wavelength range that is most effective for curing most types of resin.

There are several options for UV light sources, including:

1. UV LED lamps: these are compact and energy-efficient, making them a popular choice for post-curing resin prints.
2. UV curing boxes: these are larger, more heavy-duty options that can accommodate larger prints.

3. UV light strips: these are flexible and can be positioned close to the print for more efficient curing.

It's important to choose a UV light source that is powerful enough for your resin and print size, as well as one that is easy to use and provides even and consistent light coverage.

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## Assembly

One nOOd can be powered from a single coin cell battery. This is the easiest way to get your lights up and running.

Take a look at the video at the head of this tutorial for step-by-step instructions.

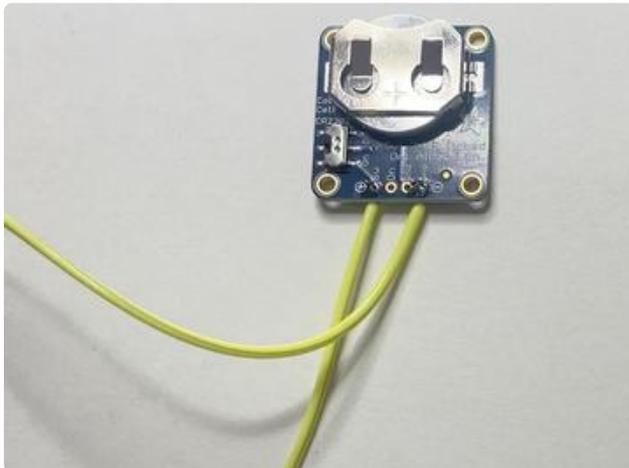
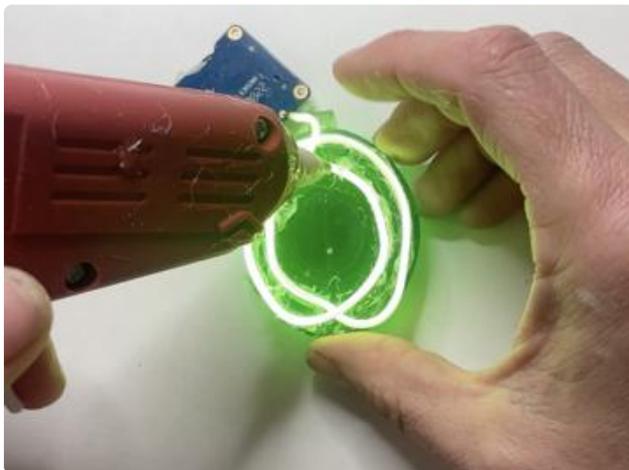


Figure out which end of the nOOd is the + and which is the -.

Insert the + end into the SW hole and the - end into the Gnd hole in the battery case and solder into place. Be sure the switch is turned off, or the battery is removed, before soldering -- you never want to solder to a live circuit.



Use low-temperature melt hot glue to glue the nOOd into the wire channel on the back of the necklace. I found it easiest to find the middle of the nOOd and start there, placing that center point right at the top of the outermost channel and working inwards.

Add some glue to the back of the battery case and press it down as well.

Finish by pressing on the backing and adding a necklace cord. Now you're ready to restore the Heart of Te Fiti.