

 adafruit learning system

LED Bicycle Handlebars

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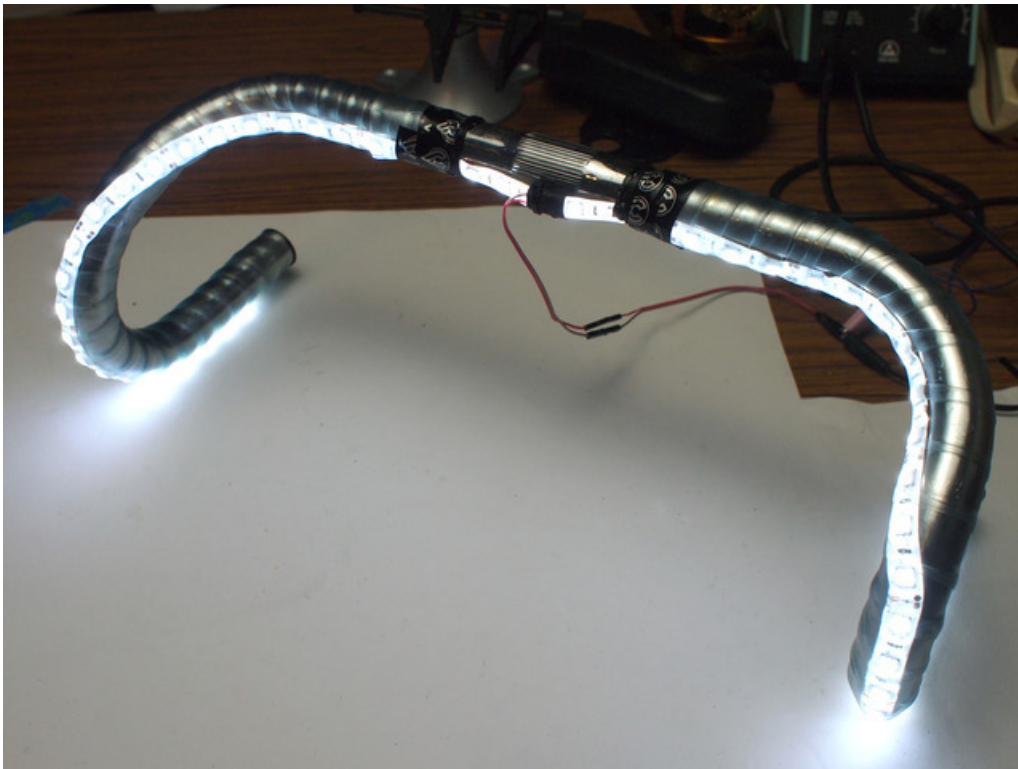
Overview

Light up your ride with some LED handlebars! You will need:

- [Cool white LED strip \(http://adafru.it/887\)](http://adafru.it/887) (1m or 2m - available as a [project pack \(http://adafru.it/932\)](http://adafru.it/932) in the Adafruit store)
- [Waterproof DC Power Cable Set \(http://adafru.it/743\)](http://adafru.it/743)
- [8 x AA battery holder \(http://adafru.it/449\)](http://adafru.it/449)
- [Heatshrink tubing \(http://adafru.it/344\)](http://adafru.it/344)
- [Clear handlebar tape \(https://adafru.it/aHW\)](https://adafru.it/aHW)
- Scrap fabric
- Tablecloth vinyl or other waterproof fabric
- Velcro closure tape
- Electrical tape
- Zipties

Tools:

- Soldering iron and solder
- Wire strippers
- Scissors
- Needle and thread
- Sewing machine (optional)
- Measuring tape
- Multimeter
- Lighter (or heat gun-- for shrinking heatshrink tubing)
- Utility or craft knife



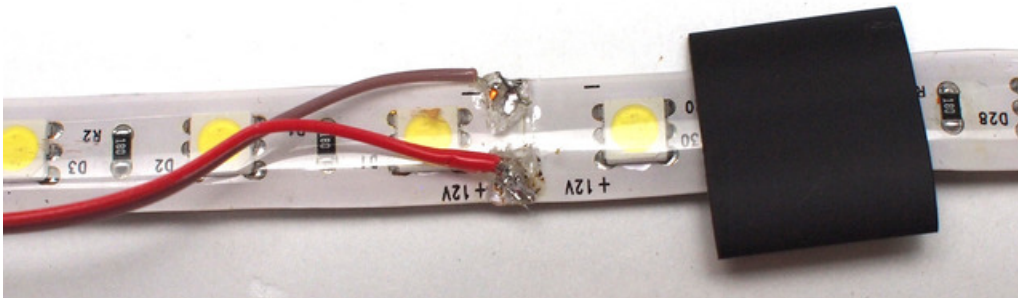
This project was inspired by [Mitchell Silva, who created GLOBARS \(https://adafru.it/aHX\)](https://adafru.it/aHX) with LEDs inside the

handlebars.

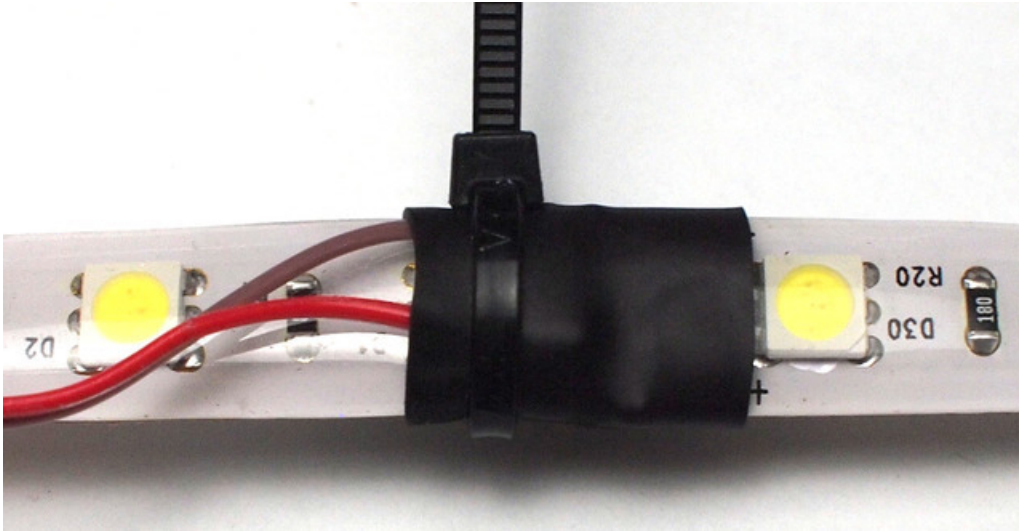
Solder LED Tape



Scrape away the plastic coating over two solder pads at the center of your LED strip.

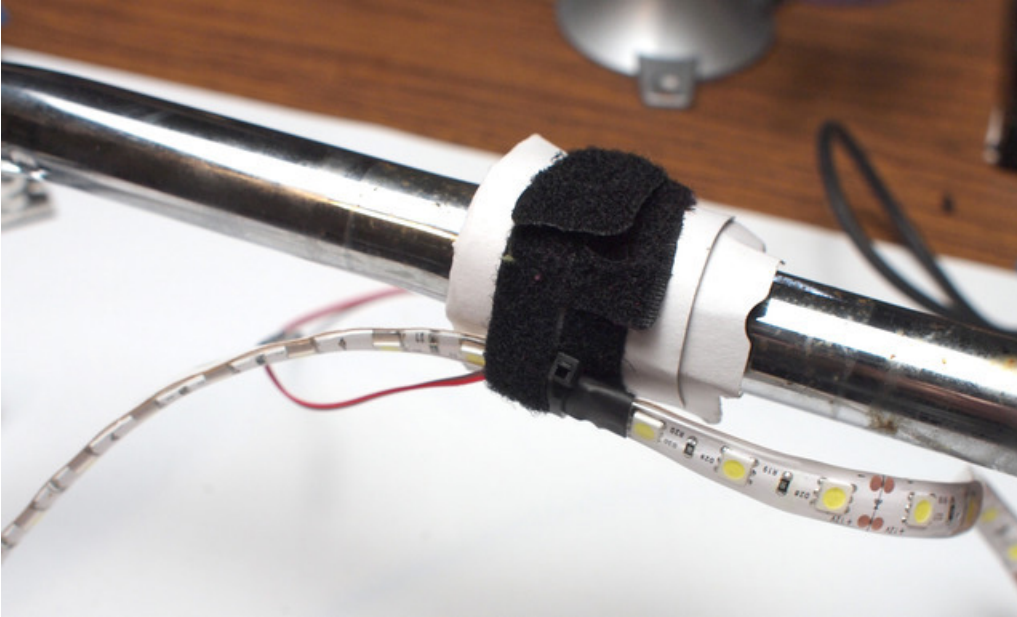


Grab the jack side of the waterproof power connector and solder the red wire to the positive (+) pad on the LED strip, and the black wire to the negative (-) pad. Slide a large piece of heatshrink tubing over the LED strip and the newly formed junctions.



Add a ziptie, some epoxy, or both to provide strain relief and added waterproofing at this delicate spot.

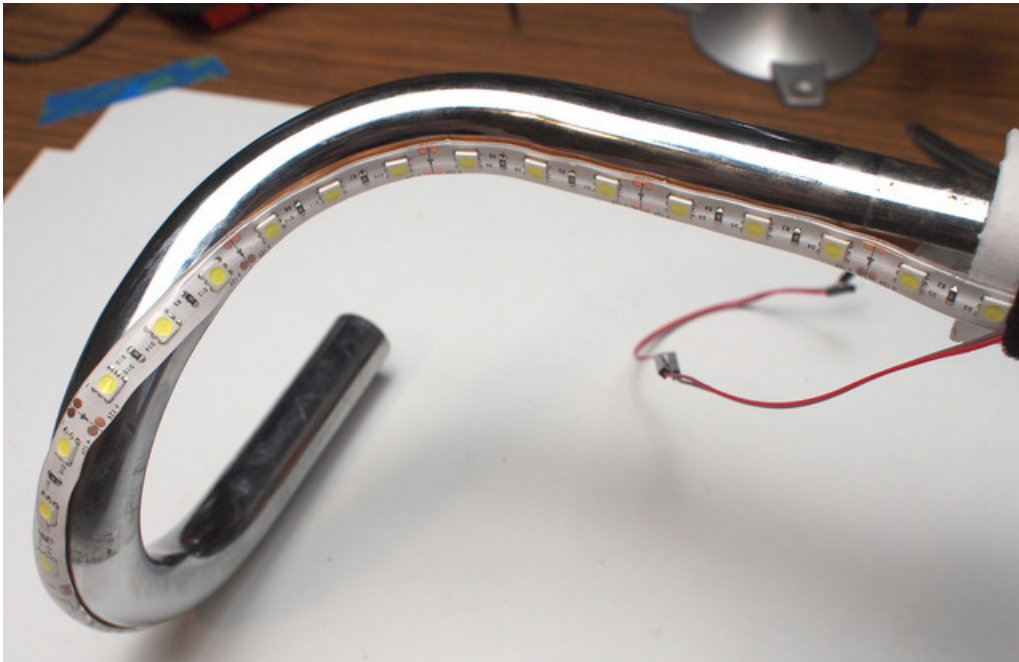
Affix to Handlebars



Secure the center of the LED tape to the center of your handlebars, positioned around your stem. If your handlebars aren't attached to a stem when you do this project, add something to occupy its place, like rolled up cardboard and a velcro tie.



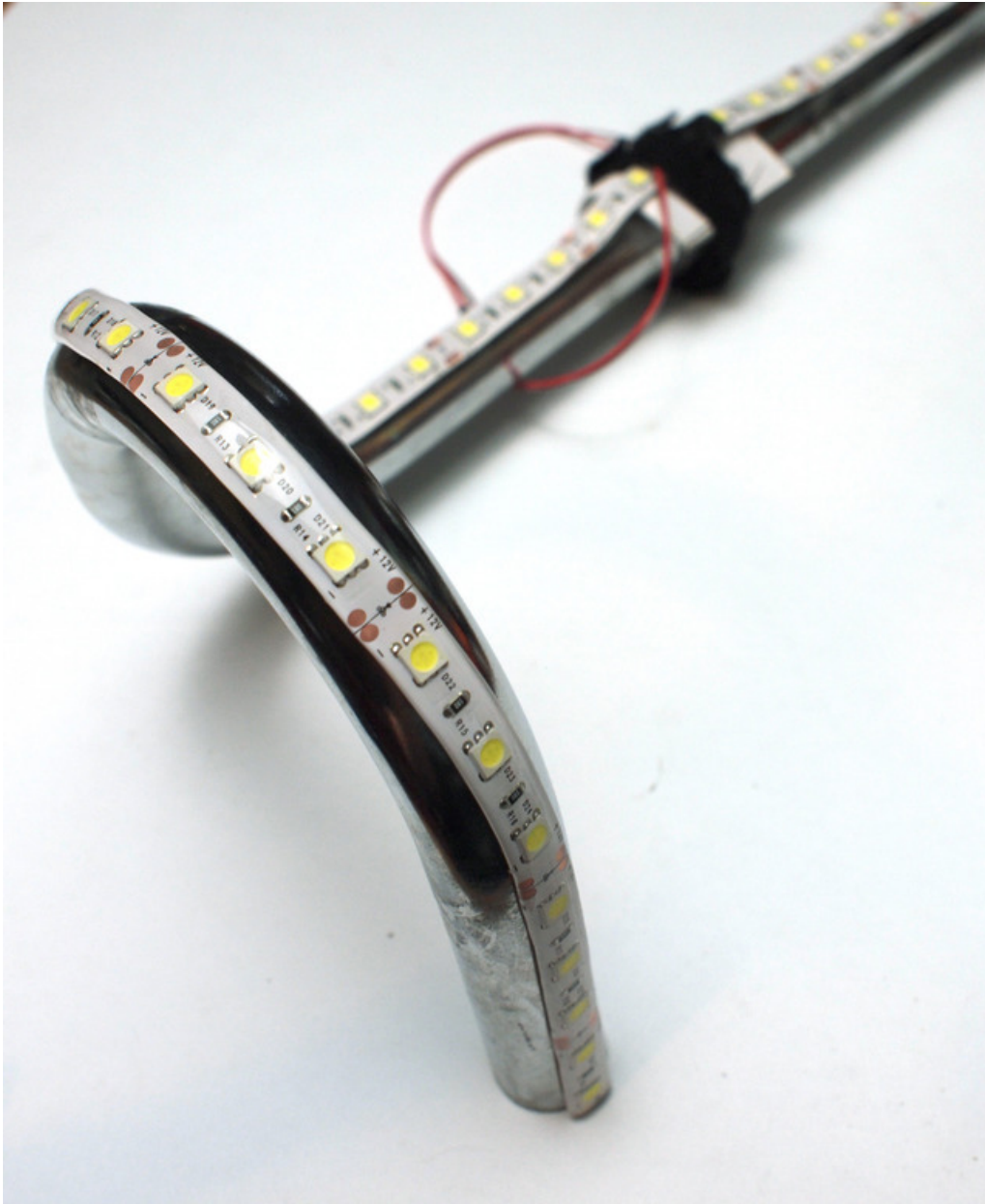
Cut the backing strip near the stem to expose the LED strip's adhesive. Peel away the backing as you affix the strip in position on the handlebars.



1m of LED tape covers these drop bars nicely.



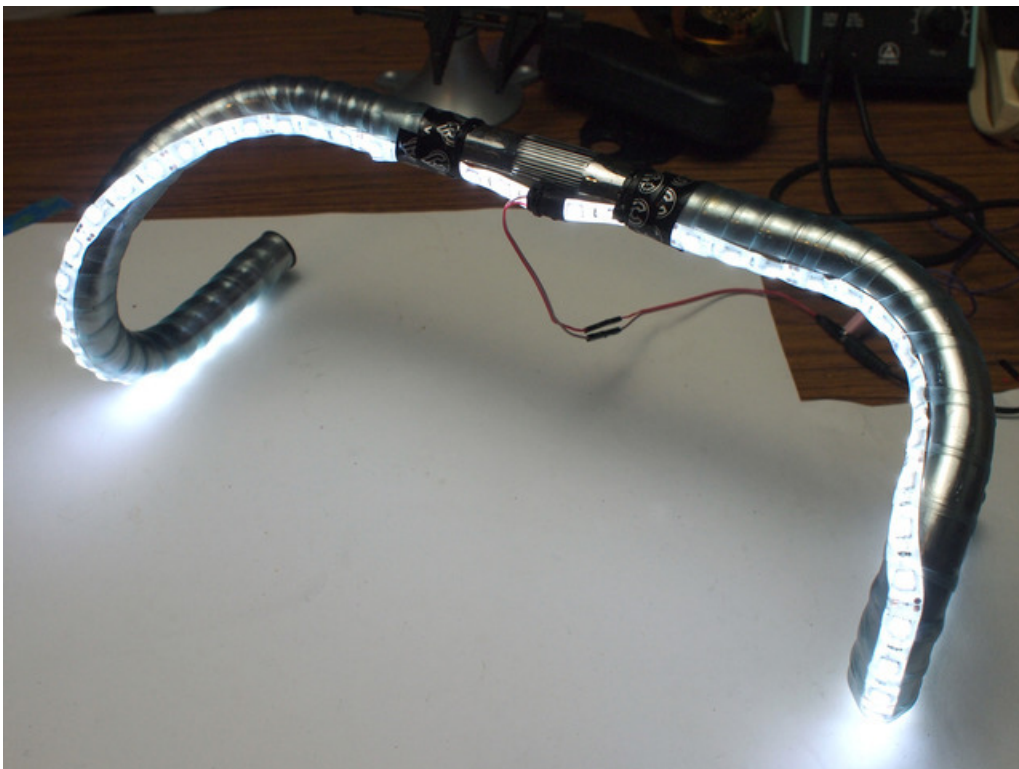
Clip off any extra LED strip with your snippers.



Repeat with the other side.



Wrap handlebars with clear grip tape. I found it on [Amazon \(https://adafru.it/aHW\)](https://adafru.it/aHW) in [two colors \(https://adafru.it/aHY\)](https://adafru.it/aHY) (neither of which gave the LEDs any discernible tint).



Test out the LEDs with a reliable 12V power source. These drop bars were adorned with 1m of LED strip, while the bullhorns below have 2m spiraled around them.



Battery Pouch

Sew a pouch to house your batteries. I made mine from two rectangles of fabric stitched together along their centers, creating flaps that will wrap around each the battery holder and the bike's top tube. Use vinyl to line the battery compartment for added water resistance. Watch the video above-- it's set to start at the battery pouch segment.



Take your bike out for a nighttime ride!

Frequently Asked Qs

How long does the battery last?

Each meter of LED strip draws about 1 Amp - so a one-meter strip will last about 4 hours on 8 AA batteries (3 hours for rechargeables). A two meter strip will be half that.

Can I use rechargeable batteries?

Yes! We suggest using NiMH rechargeables! They'll do a great job at driving the LED strip.

It's too bright for me, can I make the strip a little dimmer?

The easiest way to make it dimmer is to go with a [6xAA battery holder](#) - the lower voltage will still light up the strip but not as much as 8 AA's

What if I need it to last a lot longer than 4 hours?

Use 6 to 8 C or D cells for extra power. A 12V lantern battery will also do a good job, or a 12V lead acid battery.

Project Pack

[Project Pack \(http://adafru.it/934\)](http://adafru.it/934)
