



Labo RC Car Action Lights

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<https://learn.adafruit.com/labo-rc-car-underglow>

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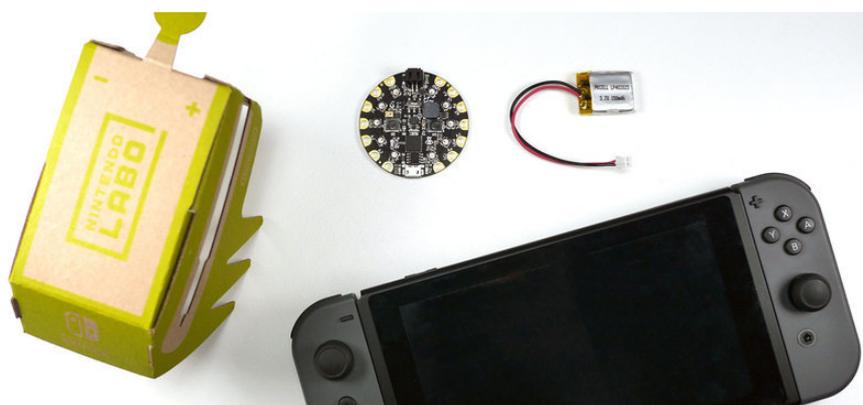
Overview



The **Nintendo Labo RC Toy-Con** is simple, but a lot of fun to play with. Let's make it even better with motion-triggered lights courtesy of [Circuit Playground Express](http://adafru.it/3333) (<http://adafru.it/3333>).

This modification only uses a little bit of double-sided tape to keep the battery secure, so it's easily reversible if you decide to remove it or make changes.

What You'll Need



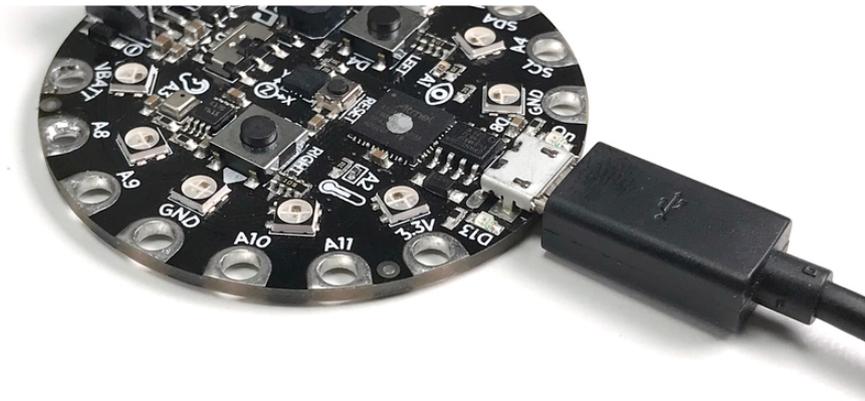
- Nintendo Switch
- Nintendo Labo RC Car (assembled)
- [Circuit Playground Express](http://adafru.it/3333) (<http://adafru.it/3333>)
- [150mAh Lithium Polymer Battery](http://adafru.it/1317) (<http://adafru.it/1317>)
- [Micro USB Cable](http://adafru.it/592) (<http://adafru.it/592>)

- Double-sided Tape or Removable Poster Tape

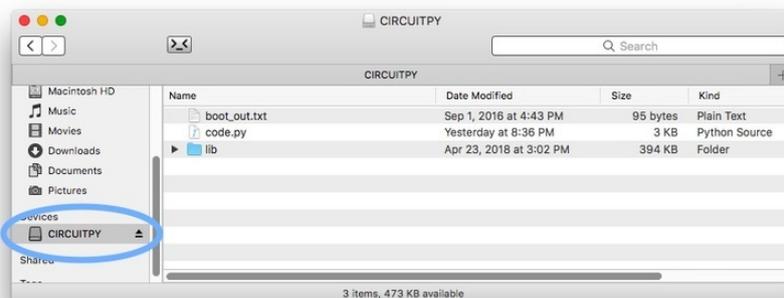
Software

First thing we need to do is install the project code. This code will use the Circuit Playground Express's built-in **accelerometer** to sense vibration and then light up the built in **Neopixel LEDs**.

Upload the Code



Connect the **Circuit Playground Express** to your computer with a micro **USB** cable. You should see a drive named "**CIRCUITPY**" appear on your computer.



You'll need to have the **Neopixel library** installed on your Circuit Playground Express in order to run this project's **CircuitPython** code. Follow the steps on [this page to install the CircuitPython library bundle \(https://adafru.it/ABU\)](https://adafru.it/ABU).

Install the CircuitPython Library Bundle

<https://adafru.it/ABU>

Copy the following code, paste it into a **plain text file** or [code editor such as Mu](#) (<https://adafru.it/ANO>). Save the file as "**code.py**" to the **CIRCUITPY** drive.

```
# SPDX-FileCopyrightText: 2018 Collin Cunningham for Adafruit Industries
#
# SPDX-License-Identifier: MIT

import board
import neopixel
from adafruit_circuitplayground.express import cpx

pixels = neopixel.NeoPixel(board.NEOPIXEL, 10, brightness=0.1, auto_write=True)
pixels.fill(0)

while True:

    x, y, z = cpx.acceleration # read accelerometer
    r, g, b = 0, 0, 0

    if abs(x) > 4.0:
        r = 255
    if abs(y) > 2.0:
        g = 255
    if z > -6.0 or z < -12.0:
        b = 255

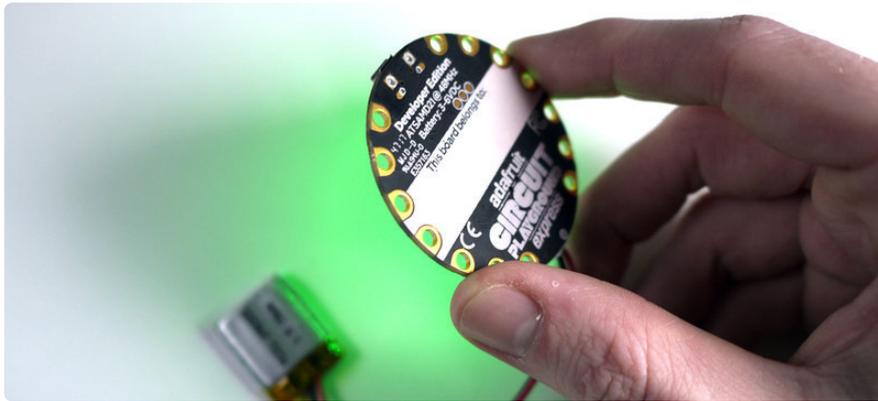
    pixels.fill((r, g, b))
```

After the file saves, your Circuit Playground Express should reboot and start running the action light code.



Test It

To make sure everything is working, **disconnect** the Circuit Playground Express from your computer and **connect the LiPo battery**.

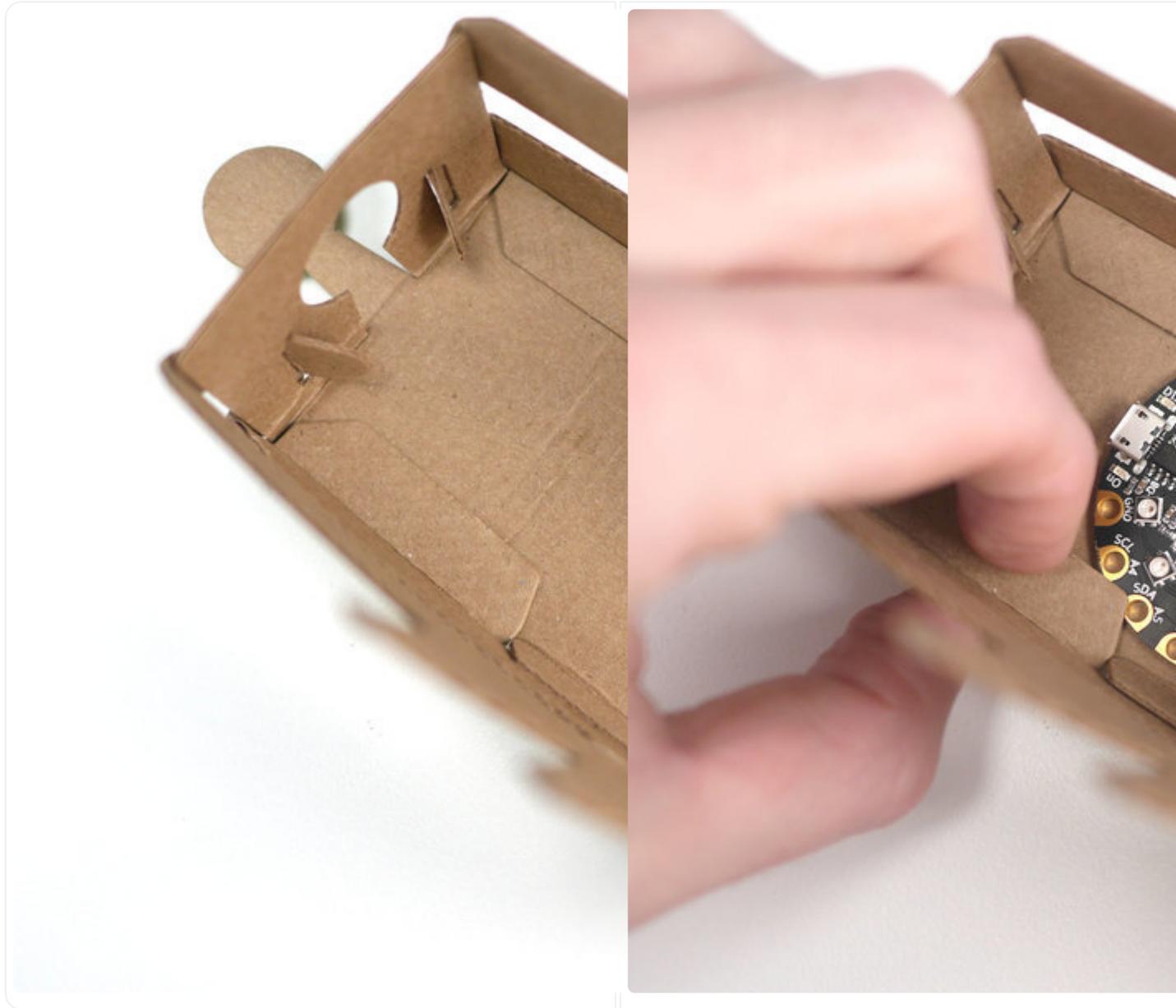


Try shaking the Circuit Playground around a bit. If it flashes different colors - the code is working!

Installation

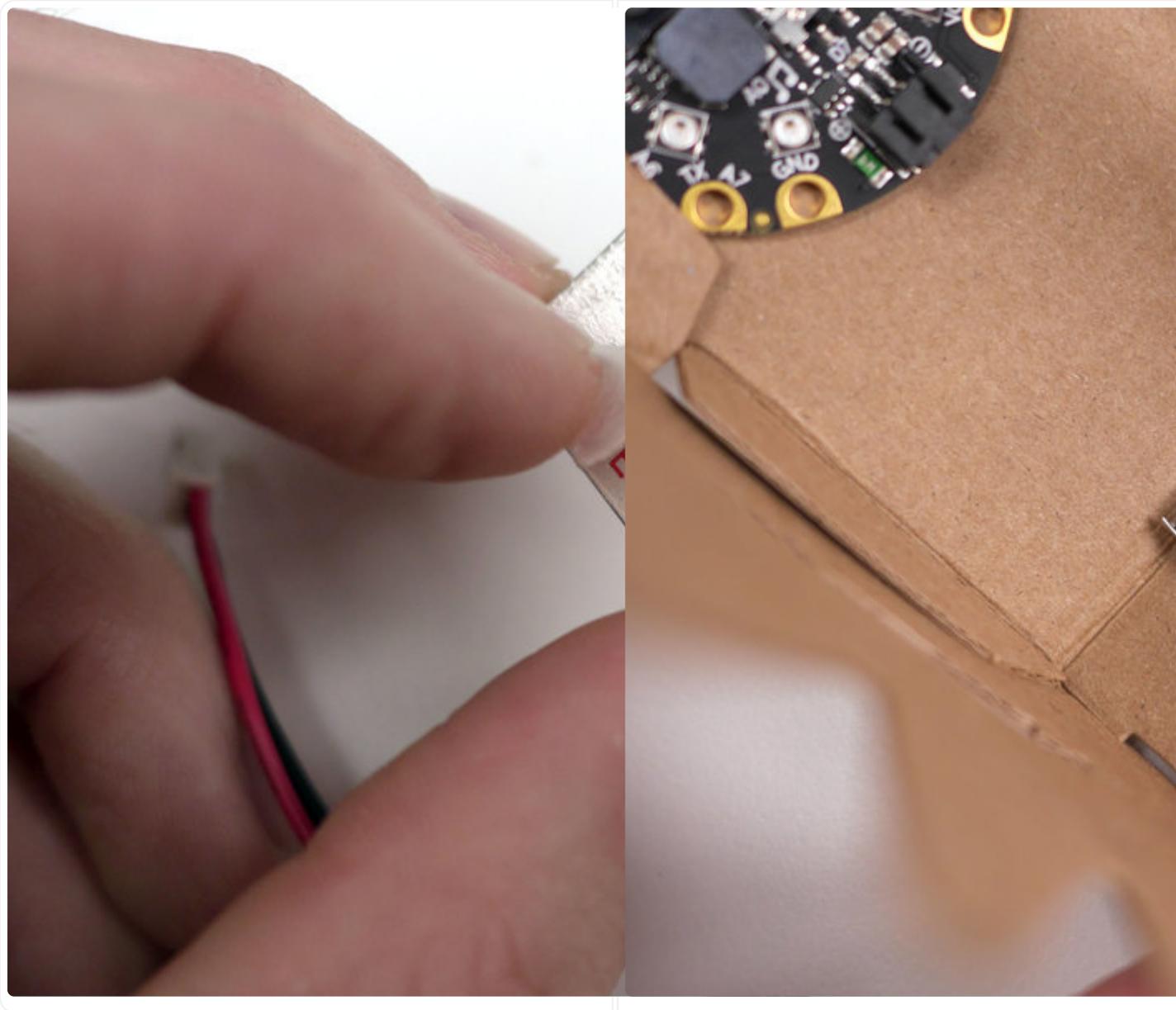
Mounting the Circuit playground and Battery is easy. We'll use use tape to mount the battery, and the Circuit Playground will be held in by the RC Car's cardboard tabs.

Mount the Circuit Playground Express

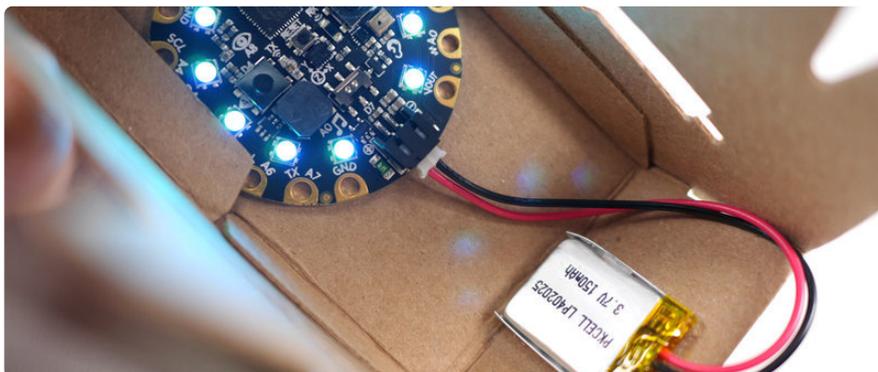


Turn the **RC Car** upside down and **slide the edges** of the Circuit Playground Express under **two large cardboard tabs**. Keep the **USB jack** pointed toward the car's 'antenna' as seen in the photo above.

Mount the Battery



Apply a small piece of **double-sided tape** to the **battery** and press it into place at the **front edge** of the car's underside.



Connect the battery to the Circuit Playground and turn the car right side up again. That's it - installation is complete :)

Use It!



Install the **Joy-Cons** on the **RC Car** and boot up your **Switch**. Start up the Labo Variety Pack cartridge, enter **RC Car Play** mode, and take your new tricked-out ride for a test drive ...



When you're done using the car, don't forget to **disconnect the battery** from the Circuit Playground. This will help preserve battery life. Have fun & drive safe :)