Neopixel Strip

Neopixel Connections

GND to GND
DO to GPIO0
+5V to VBUS

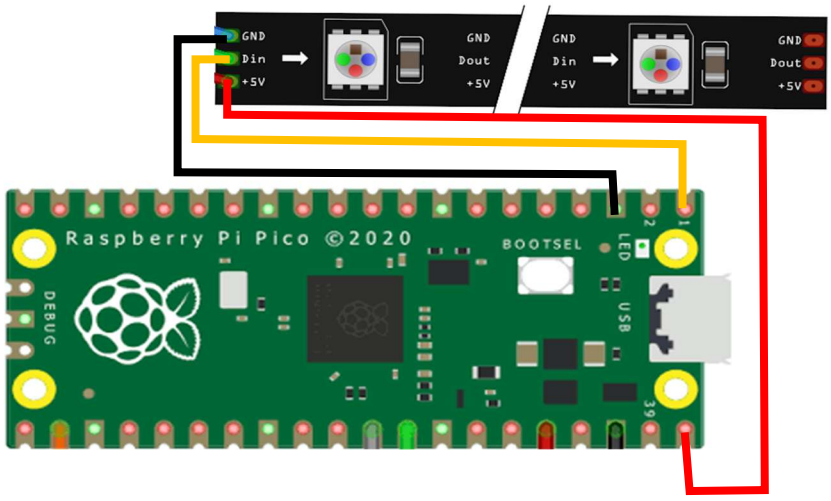
Using Neopixels

1. Download the Neopixel1.py code and paste it into Thonny.
   This code shows you basic control of neopixels

2. Change values in the code then run it. Use Google's RGB color picker to find RGB values for the colors you want. Figure out how to change the colors and display of the neopixels.

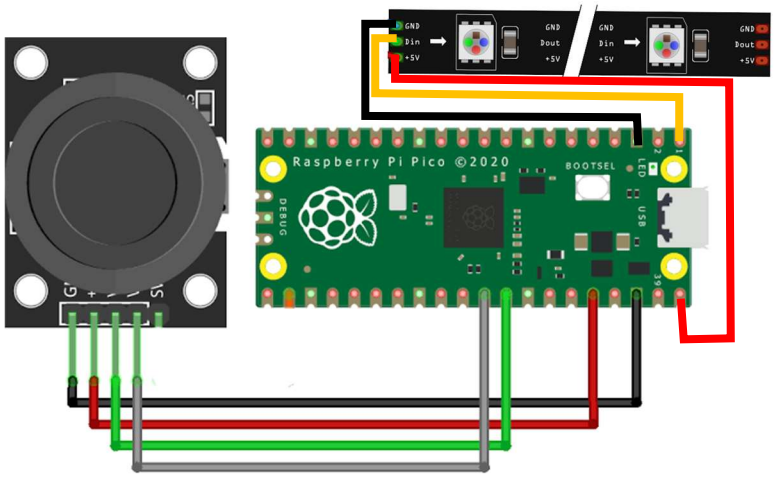
3. Download the Neopixel2.py code and paste it into Thonny.
   This code shows how to use pix.fill(color) and how to make chaser lights.

4. How does the While loop tell the colors to change?



Joystick Connections

GND to GND
+5V to 3V3(OUT)
VRX to GPIO27
VRY to GPIO26



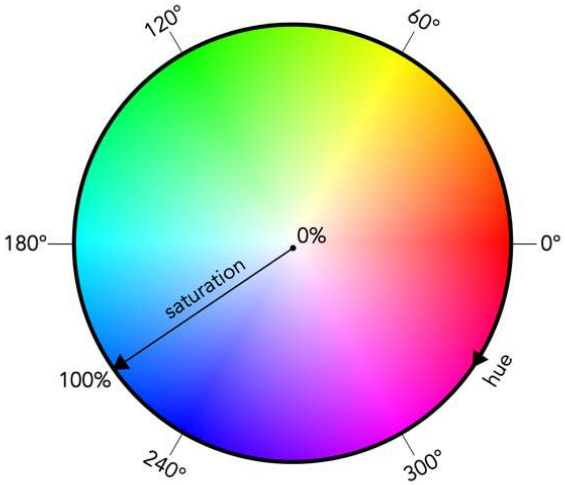
Controlling Neopixels with a Joystick

To control neopixels with a joystick, you have to take the x and y values from the joystick and convert them to a radius and angle. The radius will become the brightness of the neopixel and the angle will become the color. Neopixels need RGB values. The joystick is providing HSV values. There's a lot of math that is used to convert HSV to RGB. If you understand the Pythagorean theorem and SOH-CAH-TOA, you can probably understand the math.

5. Download the Neopix with Joystick.py code and paste it into Thonny.

6. As you move the joystick, you can change the color and brightness of each color

HSV (Hue, Saturation, Value)



Bonus!

Install the **passive buzzer** on your board.
Connect one pin to GND.
Connect the other pin to GP15.

Download the Neopixel with Joystick and Button code. Run it.

What happens when you click the joystick button???