

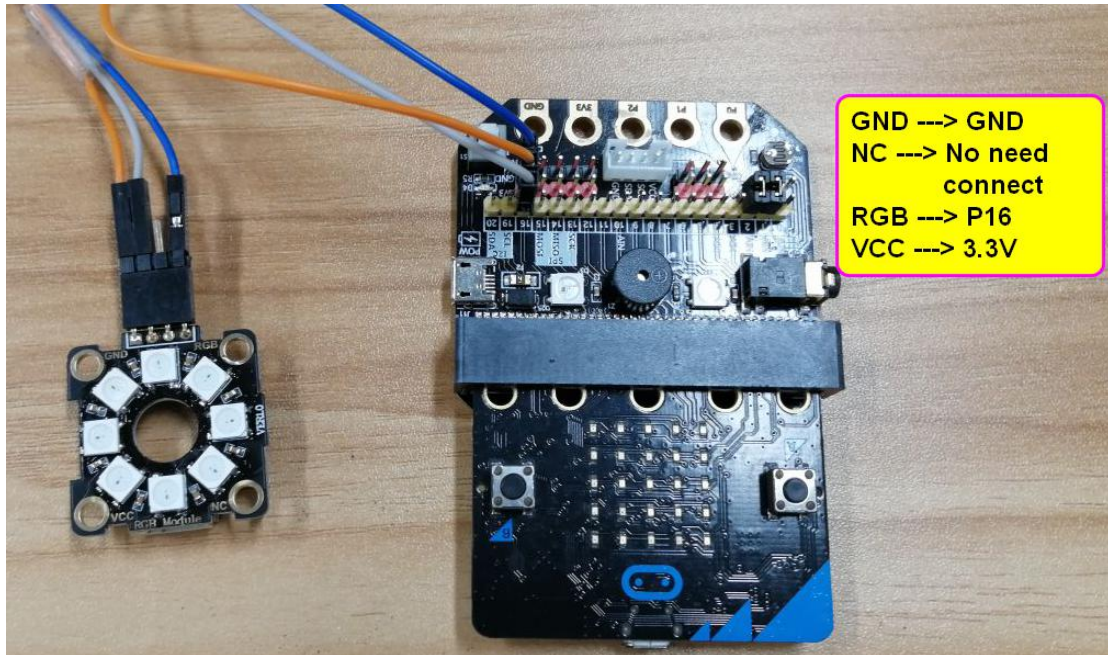
Water light

1. Learning target

In this course, we will learn how to use Micro:bit and RGB light module to achieve light up a RGB.

2. Preparation

Connect the module to Micro:bit board by expansion board, as shown below.



3. Programming method

Mode 1 online programming: First, we need to connect the micro:bit to the computer by USB cable. The computer will pop up a USB flash drive and click on the URL in the USB flash drive: <http://microbit.org/> to enter the programming interface.

Mode 2 offline programming: We need to open the offline programming software. After the installation is complete, enter the programming interface, click 【New Project】 , you can start programming.

4. Looking for blocks

The following is the location of the building blocks required for this programming.



The image shows three screenshots of the Scratch Neopixel block palette and code blocks. The first screenshot shows the Neopixel block palette with the 'Neopixel' block highlighted. The second screenshot shows the 'Neopixel' block palette with the 'more' button highlighted. The third screenshot shows the 'Neopixel' block palette with the 'more' button highlighted. The code blocks shown are:

- set strip2 to Neopixel at pin P0 with 24 leds as RGB (GRB format)
- set range to strip range from 0 with 4 leds
- strip show rainbow from 1 to 360
- strip show color red
- strip show bar graph of 0
- strip show
- strip set pixel color at 0 to red
- strip length
- strip set brightness 255
- strip ease brightness

5.Combine block

The summary program is shown below.

The summary program code blocks are:

- on start
- show icon
- set strip to Neopixel at pin P16 with 8 leds as RGB (GRB format)
- strip clear
- strip show

```
forever
  strip ▾ set pixel color at 0 to indigo ▾
  strip ▾ show
  pause (ms) 200 ▾
  strip ▾ set pixel color at 1 to indigo ▾
  strip ▾ show
  pause (ms) 200 ▾
  strip ▾ set pixel color at 2 to indigo ▾
  strip ▾ show
  pause (ms) 200 ▾
  strip ▾ set pixel color at 3 to indigo ▾
  strip ▾ show
  pause (ms) 200 ▾
  strip ▾ set pixel color at 4 to indigo ▾
  strip ▾ show
```

```
  pause (ms) 200 ▾
  strip ▾ set pixel color at 5 to indigo ▾
  strip ▾ show
  pause (ms) 200 ▾
  strip ▾ set pixel color at 6 to indigo ▾
  strip ▾ show
  pause (ms) 200 ▾
  strip ▾ set pixel color at 7 to indigo ▾
  strip ▾ show
  pause (ms) 200 ▾
  strip ▾ clear
  strip ▾ show
  pause (ms) 200 ▾
```

6.Experimental phenomena

After the program is downloaded successfully, all RGB lights on module are sequentially lit to indigo, achieving the effect of running water lights.