

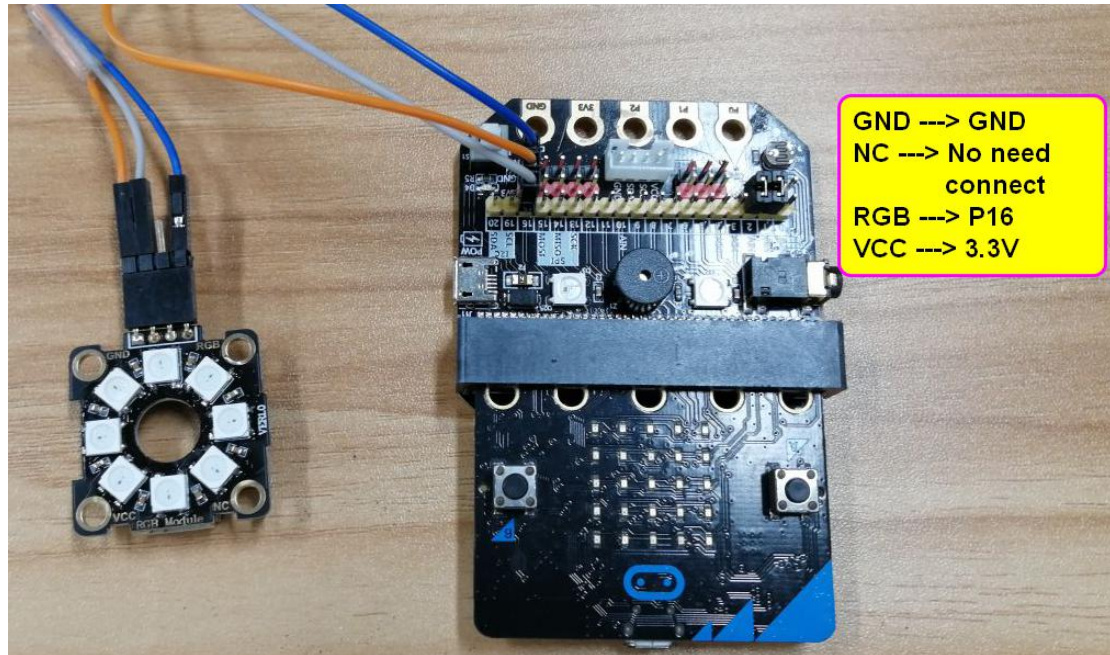
## Breathing light

### 1. Learning target

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

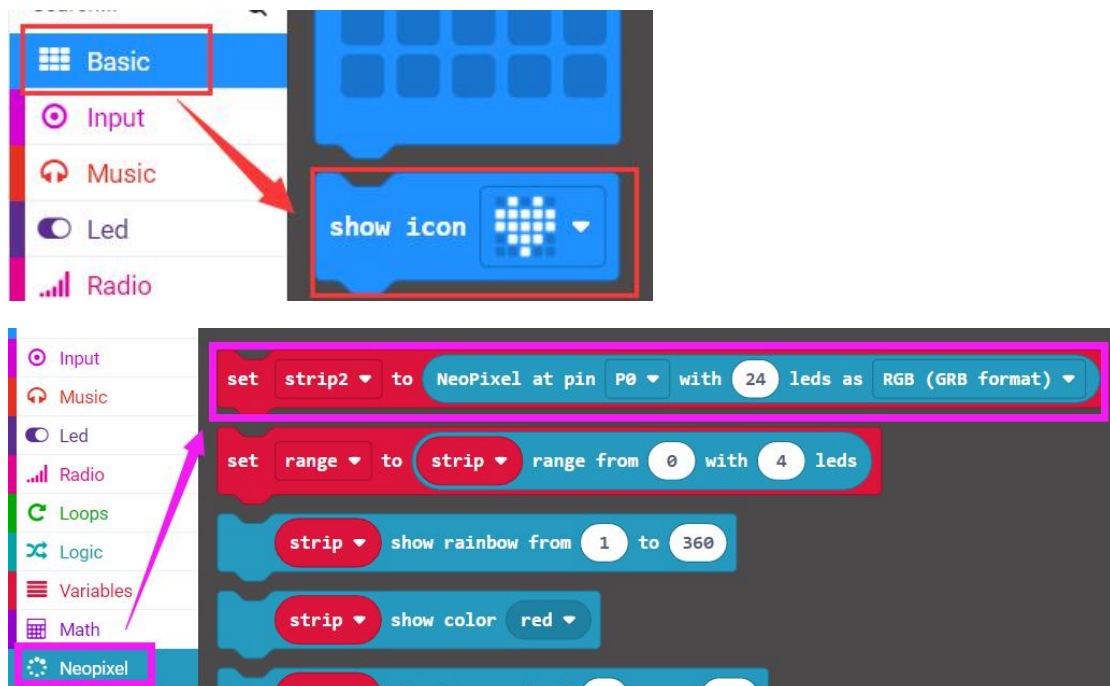
### 2. Preparation

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



### 4. Looking for blocks

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



The image displays four screenshots of the Scratch Neopixel block palette and code blocks, illustrating the process of creating a bar graph.

**Screenshot 1:** The Neopixel block palette is shown on the left. The 'strip' dropdown menu is selected, and the 'show bar graph of' block is highlighted. The 'strip' dropdown menu is also highlighted in the code block.

**Screenshot 2:** The Neopixel block palette is shown on the left. The 'strip' dropdown menu is selected, and the 'show' block is highlighted. The 'strip' dropdown menu is also highlighted in the code block.

**Screenshot 3:** The Neopixel block palette is shown on the left. The 'strip' dropdown menu is selected, and the 'set pixel color at' block is highlighted. The 'strip' dropdown menu is also highlighted in the code block.

**Screenshot 4:** The Neopixel block palette is shown on the left. The 'strip' dropdown menu is selected, and the 'length' block is highlighted. The 'strip' dropdown menu is also highlighted in the code block.

**Screenshot 5:** The Neopixel block palette is shown on the left. The 'strip' dropdown menu is selected, and the 'set brightness' block is highlighted. The 'strip' dropdown menu is also highlighted in the code block.

**Screenshot 6:** The Neopixel block palette is shown on the left. The 'strip' dropdown menu is selected, and the 'ease brightness' block is highlighted. The 'strip' dropdown menu is also highlighted in the code block.

**Screenshot 7:** The Math block palette is shown on the left. The 'absolute of' block is highlighted. The 'strip' dropdown menu is also highlighted in the code block.

**Screenshot 8:** The Math block palette is shown on the left. The 'square root' block is highlighted. The 'strip' dropdown menu is also highlighted in the code block.

**Screenshot 9:** The Math block palette is shown on the left. The 'round' block is highlighted. The 'strip' dropdown menu is also highlighted in the code block.

**Screenshot 10:** The Math block palette is shown on the left. The 'pick random' block is highlighted. The 'strip' dropdown menu is also highlighted in the code block.

**Screenshot 11:** The Variables block palette is shown on the left. The 'm' variable is highlighted. The 'strip' dropdown menu is also highlighted in the code block.

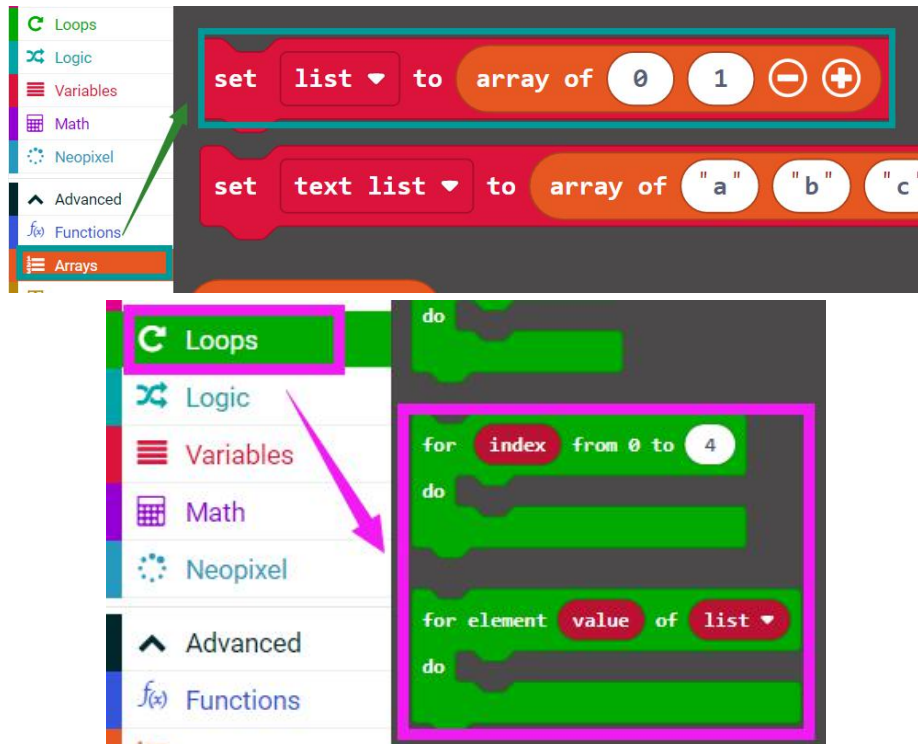
**Screenshot 12:** The Variables block palette is shown on the left. The 'mic' variable is highlighted. The 'strip' dropdown menu is also highlighted in the code block.

**Screenshot 13:** The Variables block palette is shown on the left. The 'strip' variable is highlighted. The 'strip' dropdown menu is also highlighted in the code block.

**Screenshot 14:** The Variables block palette is shown on the left. The 'temp' variable is highlighted. The 'strip' dropdown menu is also highlighted in the code block.

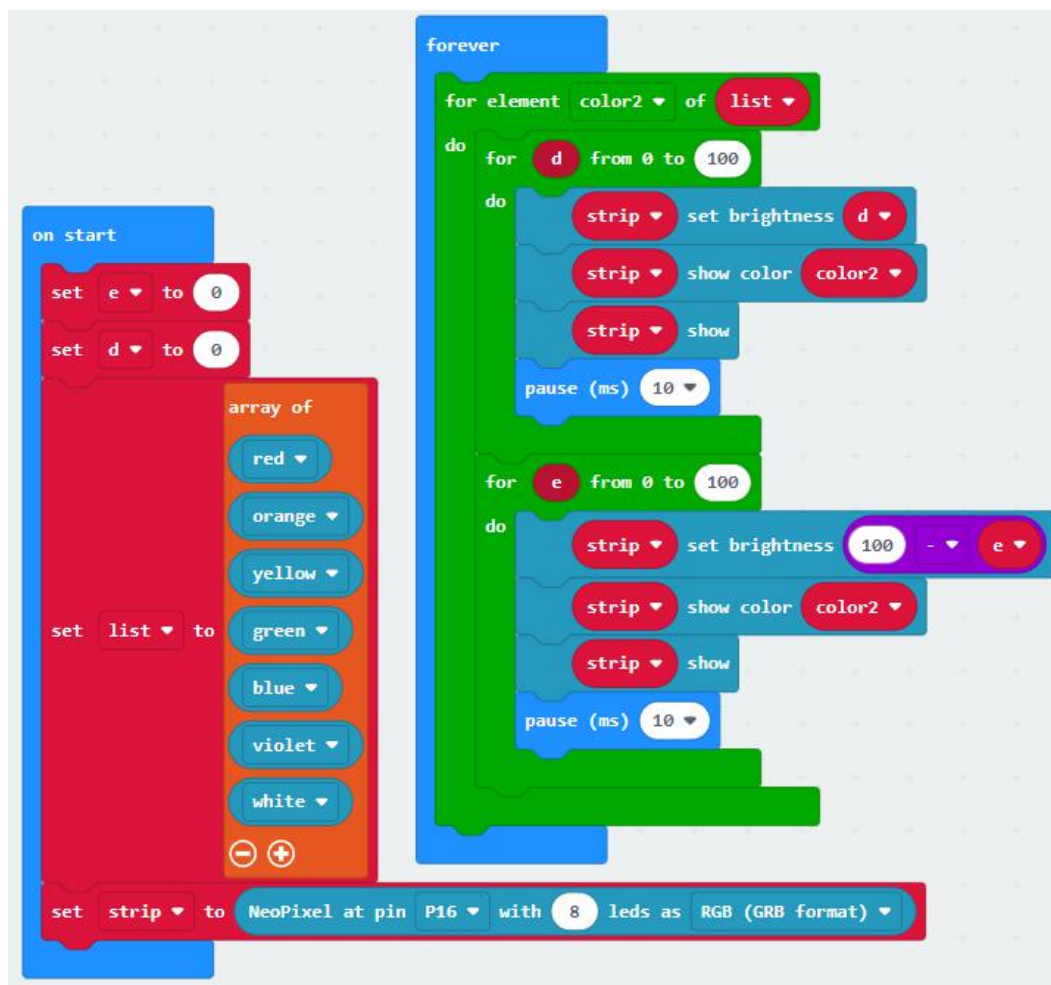
**Screenshot 15:** The Variables block palette is shown on the left. The 'set m to' block is highlighted. The 'strip' dropdown menu is also highlighted in the code block.

**Screenshot 16:** The Variables block palette is shown on the left. The 'change m by' block is highlighted. The 'strip' dropdown menu is also highlighted in the code block.



### 5.Combine block

The summary program is shown below.



## **6.Experimental phenomena**

After the program is downloaded successfully, Micro:bit dot matrix will display heart,all lights on module will go from on to off, and then from off to on, and it will switch to a different color each time, realizing the effect of a breathing light.