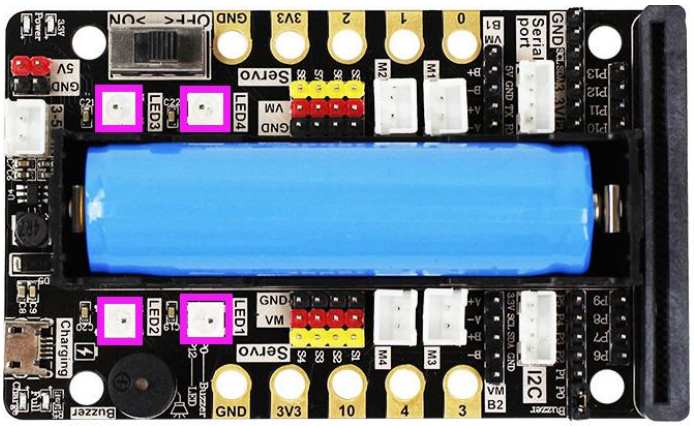
Control all RGB lights

1.Learning goals

In this course, we mainly learn how to control all RGB lights on the superbit expansion board through MakeCode graphical programming. And we will realize some game play.

Four RGB light is located on the expansion board as shown in the figure below.



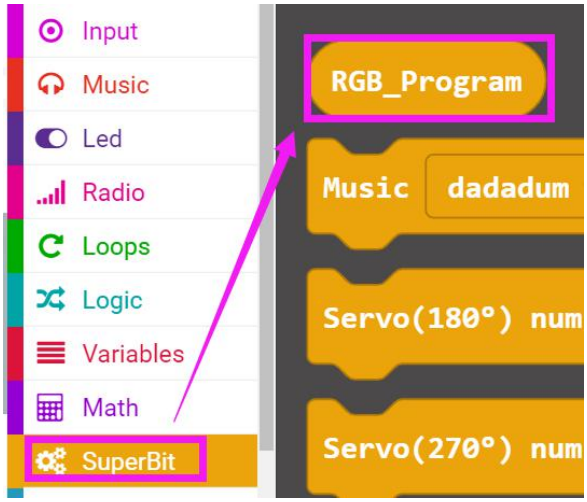
2. Programming method

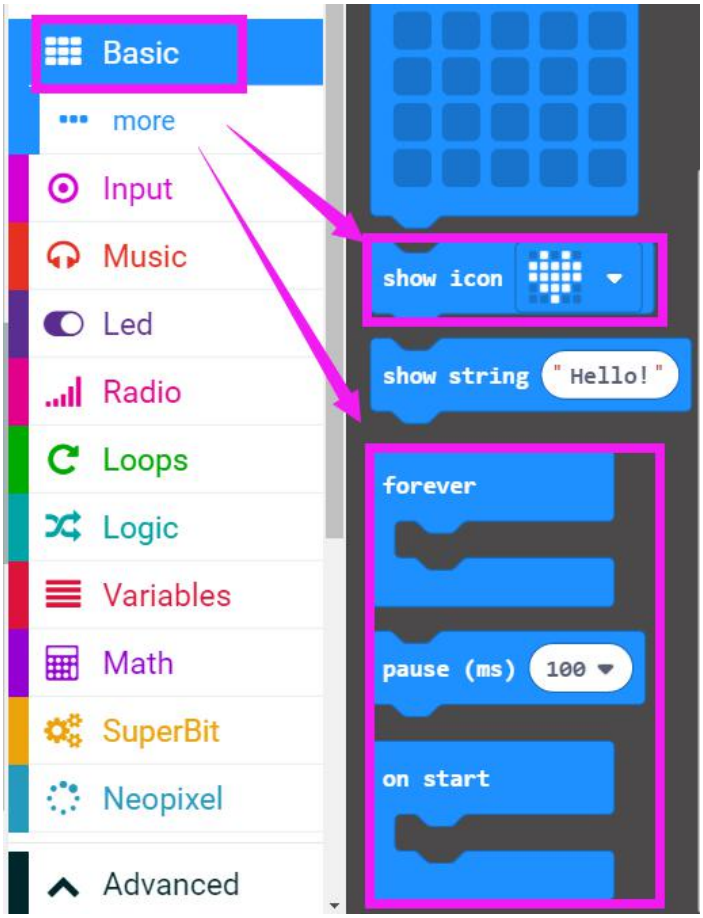
Mode 1 online programming: First, we need to connect the micro:bit to the computer by USB cable. The computer will pop up a USB flash drive and click on the URL in the USB flash drive: http://microbit.org/ to enter the programming interface. Add the Yahboom package **https://github.com/lzty634158/SuperBit** to program.

Mode 2 offline programming: We need to open the offline programming software. After the installation is complete, enter the programming interface, click【New Project】, add Yahboom package: **https://github.com/lzty634158/SuperBit**, you can program.

3.Looking for blocks

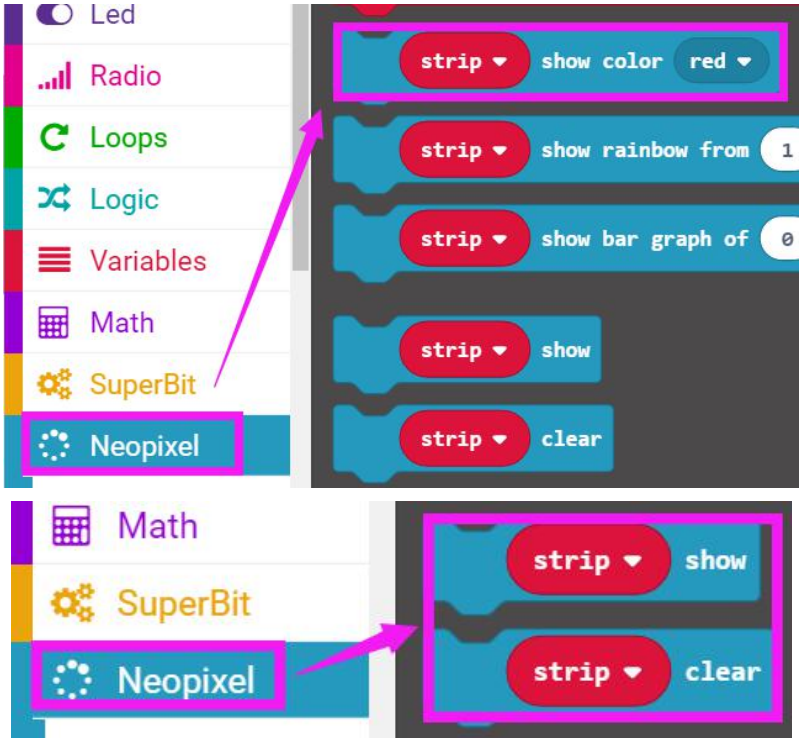
The following is the location of the building blocks required for this programming.



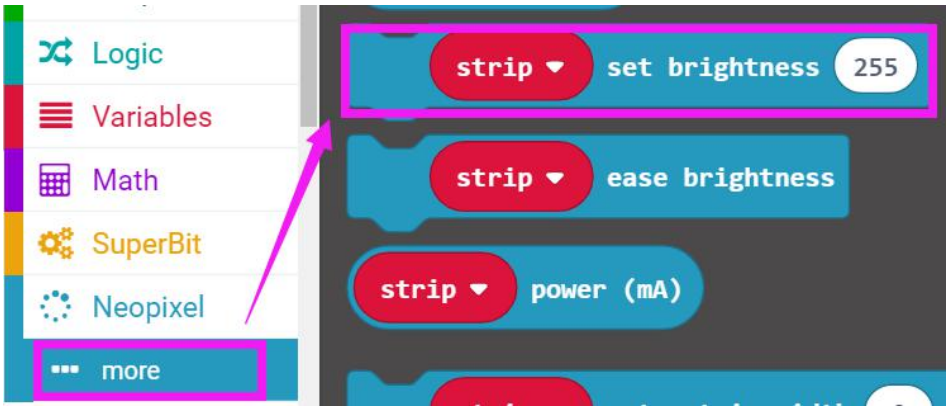


There are a total of 4 RGB lights on the Super:bit expansion board, the serial number is from 0 to 3.

If we want to control all RGB lights, we can use following blocks.



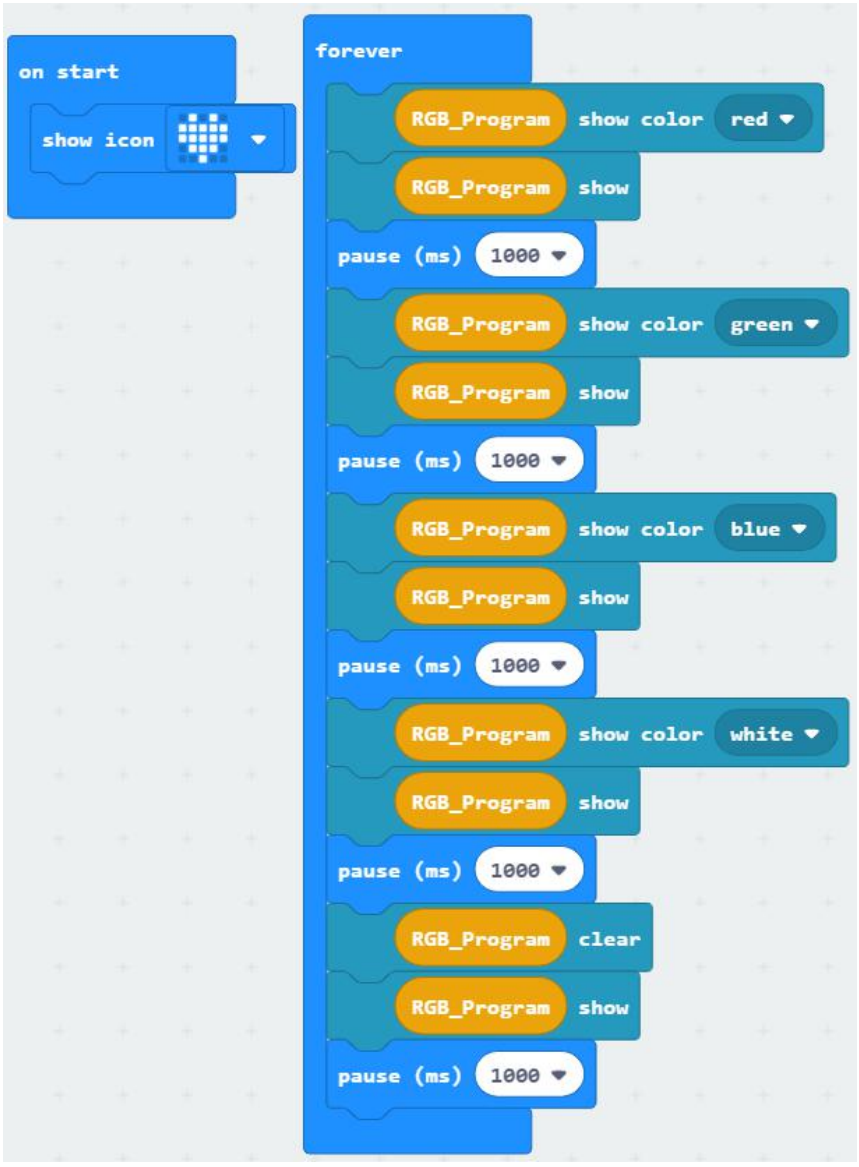
If we need to control the brightness of the RGB lights, we can use the following blocks.



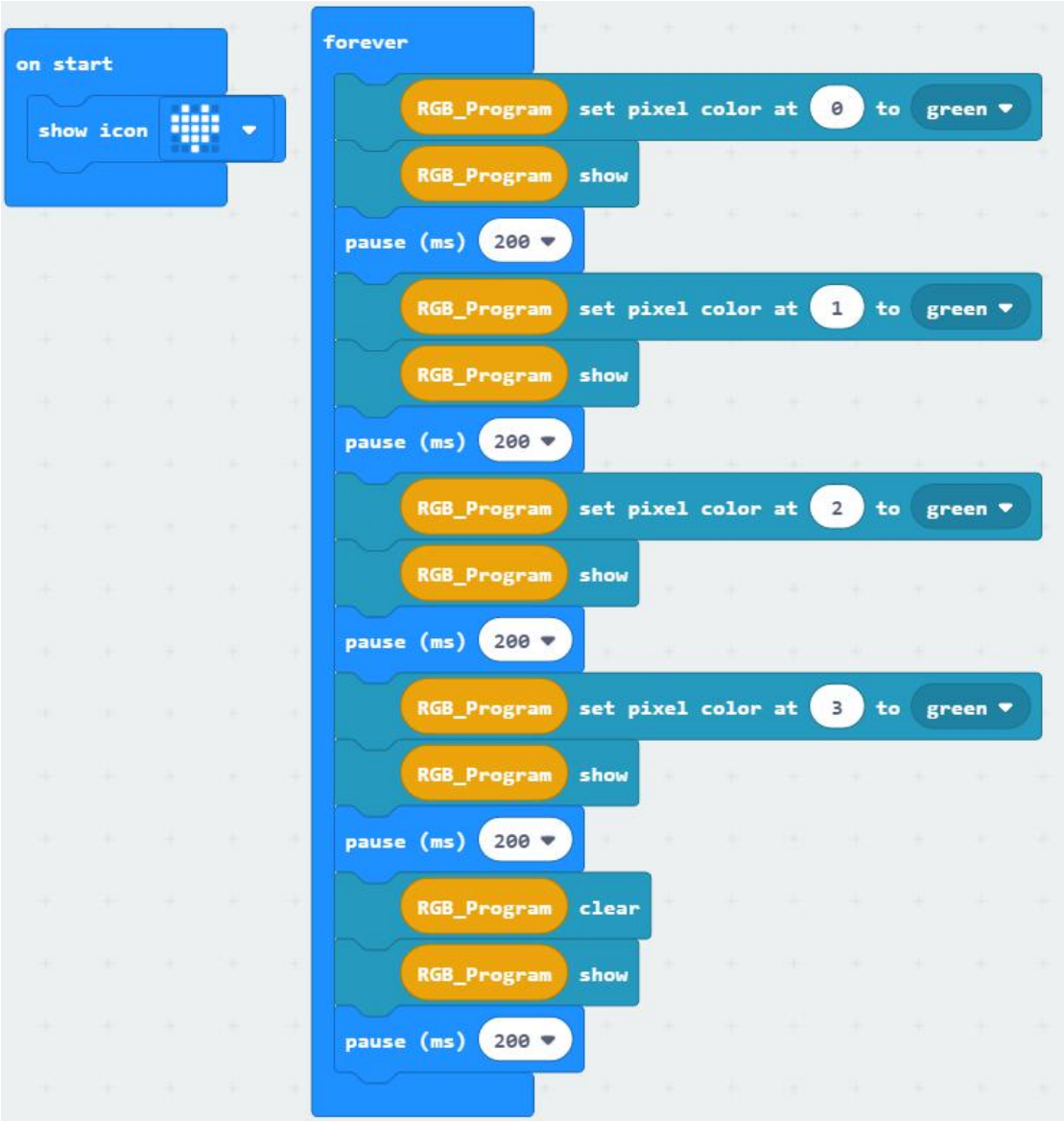
4.Combine block

The summary program is shown below.

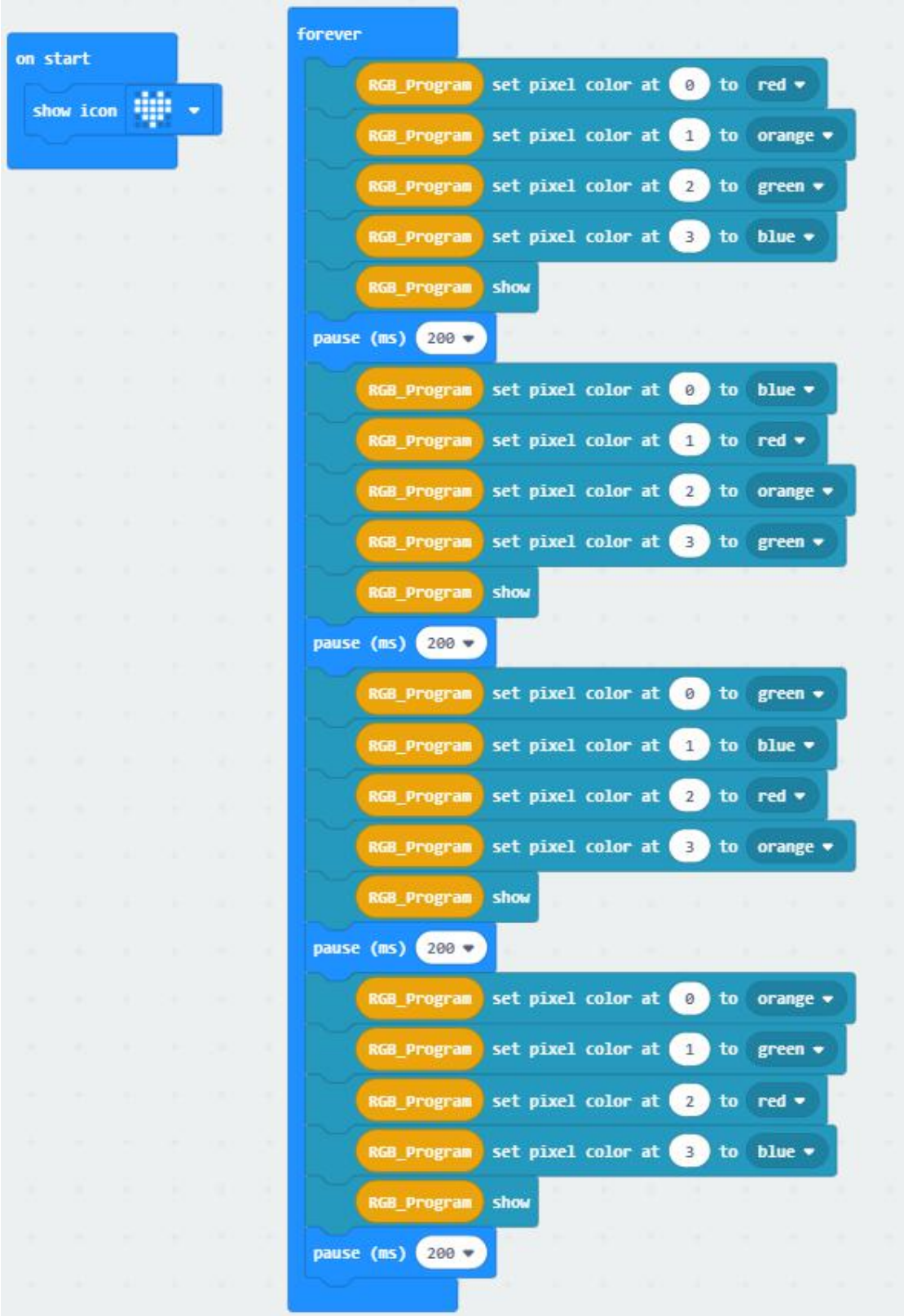
Game play 1: Light up all RGB lights



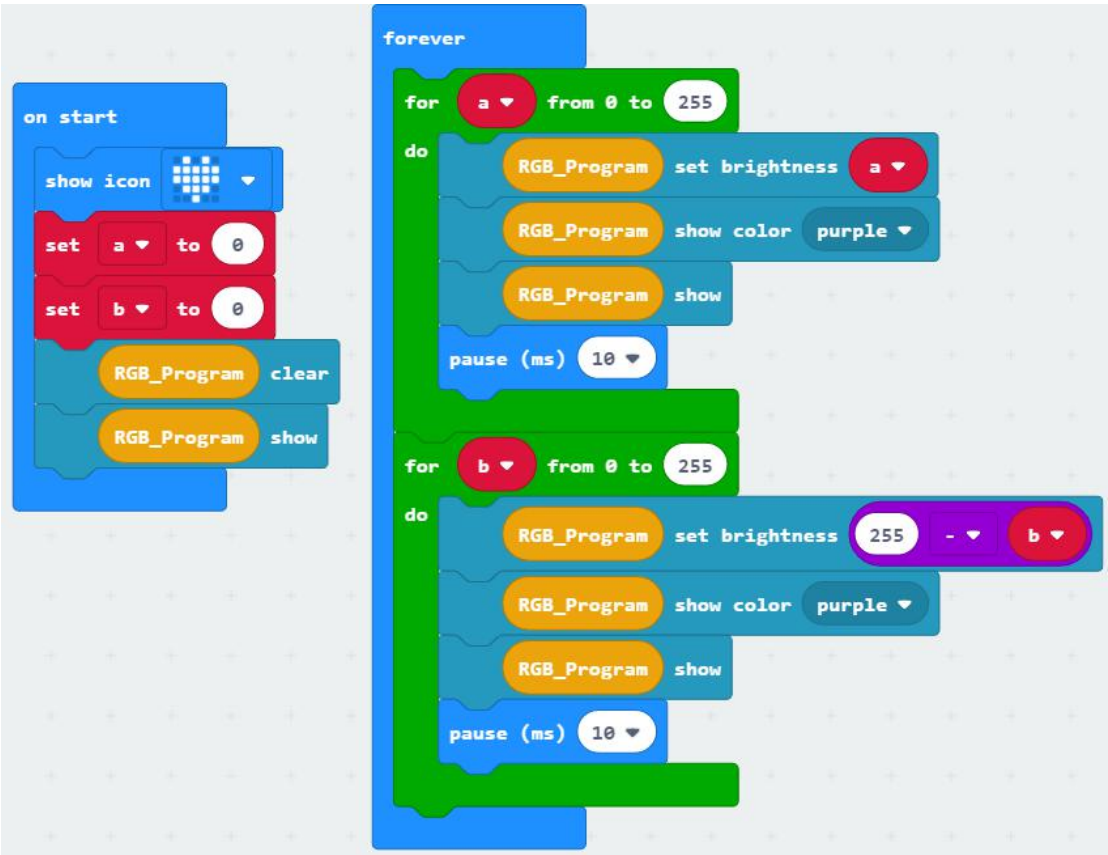
Game play 2: Water light



Game play 3: Marquee

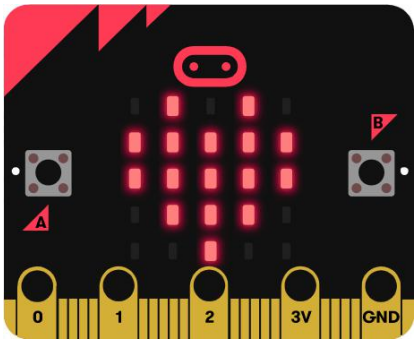


Game play 4: Breathing light



5.Experimental phenomena

After the program is successfully downloaded, the micro: bit dot matrix will display the heart pattern, as shown below.



Game play 1: We can see that all RGB lights will switch a color every 1 second, red-> green-> blue-> white-> off, and keep cycling in this state.

Game play 2: We can see that the four RGB lights are lit green in turn, with a time interval of 200ms, and keep cycling in this state.

Game play 3: We can see that the four RGB lights will turn on different colors in turn, with a time interval of 200ms, and keep cycling in this state.

Game play 4: We can see that all the RGB lights gradually go from off to on, then from on to off, and keep cycling in this state.

If you need to restart, press the reset button on the back of the micro:bit board.