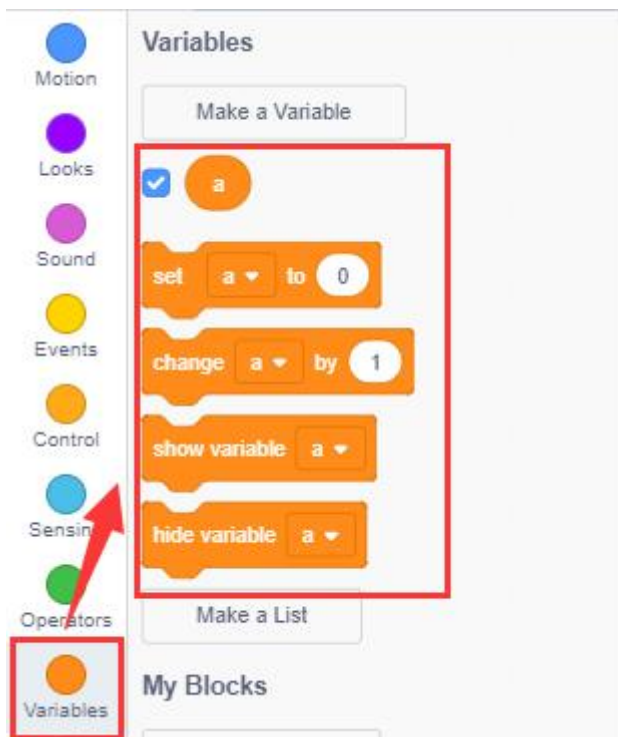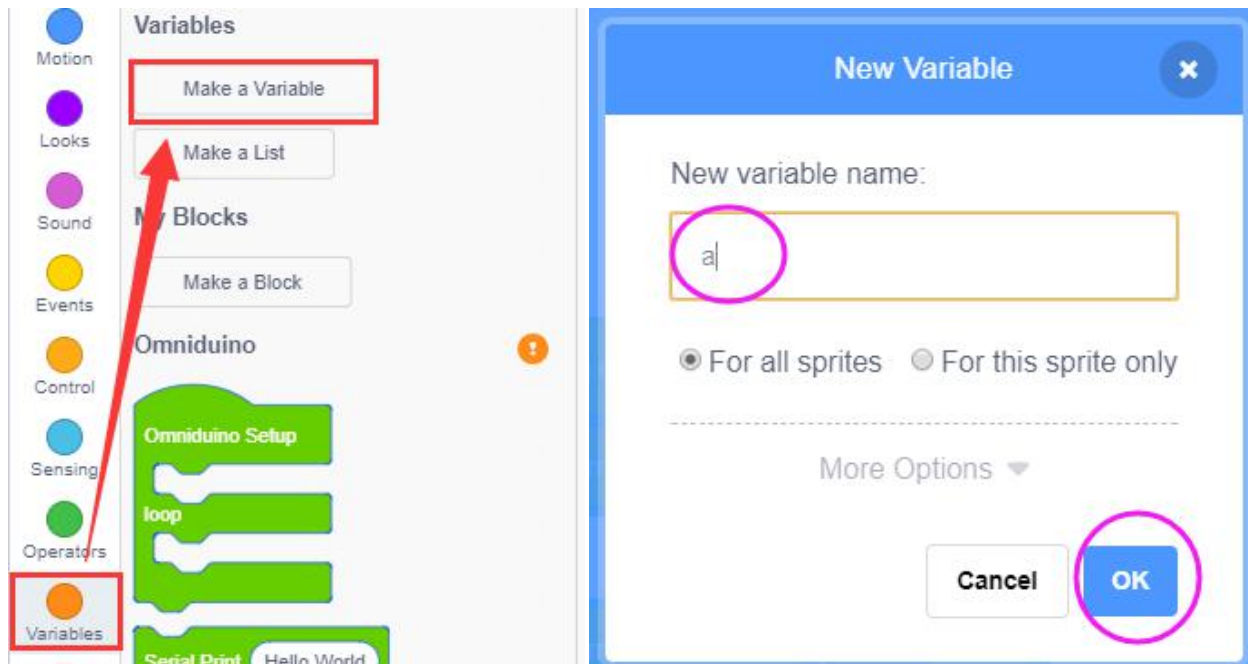**Breathing Light**

1. Learning goal

In this lesson, we will learn how to realize breathing light on Omniduino car by Graphical programming.

2. Looking for building blocks

The following is the location of the building blocks required for this programming.
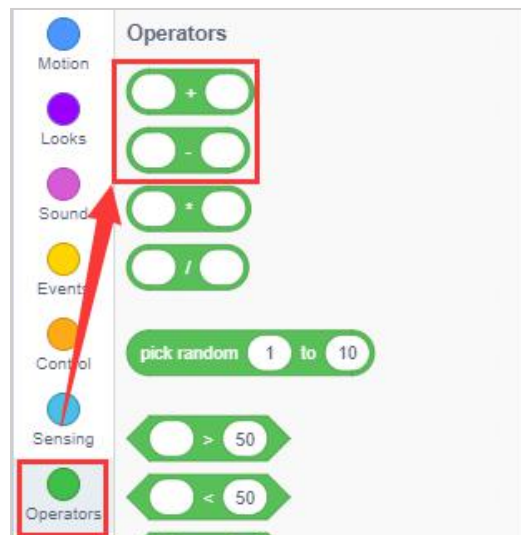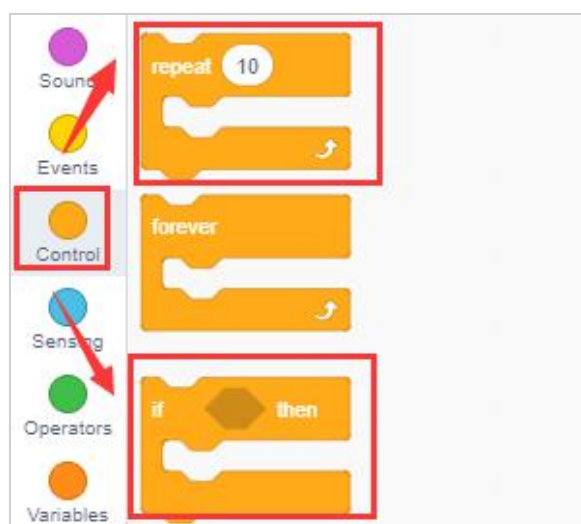
2.1 New create variable

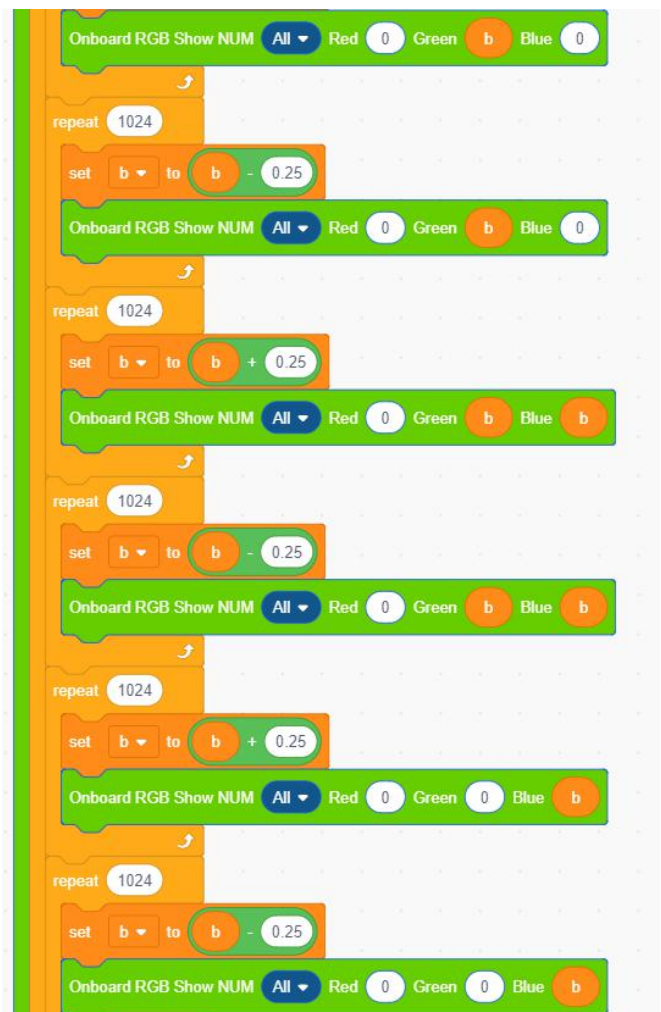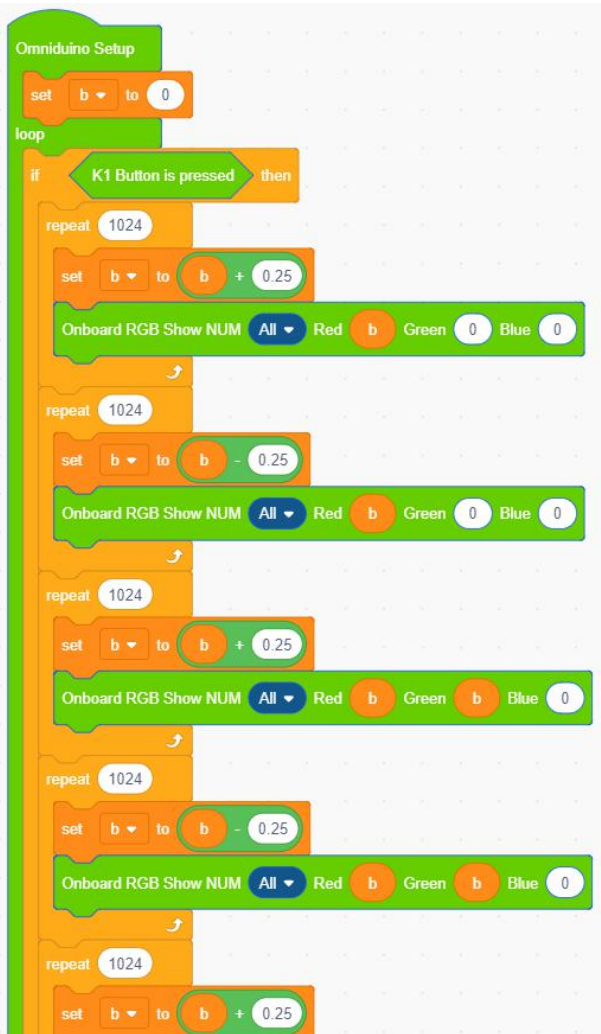2.2 Select k1 Button and Onboard RGB blocks.

2.3 Operators: + and -.

2.4 Control category: if…then and repeat execution times.

Combine blocks

Omniduino Setup

set `b` to `0`

loop

if ⟨ K1 Button is pressed ⟩ then

  repeat `1024`

    set `b` to (`b` + `0.25`)

    Onboard RGB Show NUM [All ▾] Red `b` Green `0` Blue `0`

  repeat `1024`

    set `b` to (`b` - `0.25`)

    Onboard RGB Show NUM [All ▾] Red `b` Green `0` Blue `0`

  repeat `1024`

    set `b` to (`b` + `0.25`)

    Onboard RGB Show NUM [All ▾] Red `b` Green `b` Blue `0`

  repeat `1024`

    set `b` to (`b` - `0.25`)

    Onboard RGB Show NUM [All ▾] Red `b` Green `b` Blue `0`

  repeat `1024`

    set `b` to (`b` + `0.25`)

    Onboard RGB Show NUM [All ▾] Red `0` Green `b` Blue `0`

  repeat `1024`

    set `b` to (`b` - `0.25`)

    Onboard RGB Show NUM [All ▾] Red `0` Green `b` Blue `0`

  repeat `1024`

    set `b` to (`b` + `0.25`)

    Onboard RGB Show NUM [All ▾] Red `0` Green `b` Blue `b`

  repeat `1024`

    set `b` to (`b` - `0.25`)

    Onboard RGB Show NUM [All ▾] Red `0` Green `b` Blue `b`

  repeat `1024`

    set `b` to (`b` + `0.25`)

    Onboard RGB Show NUM [All ▾] Red `0` Green `0` Blue `b`

  repeat `1024`

    set `b` to (`b` - `0.25`)
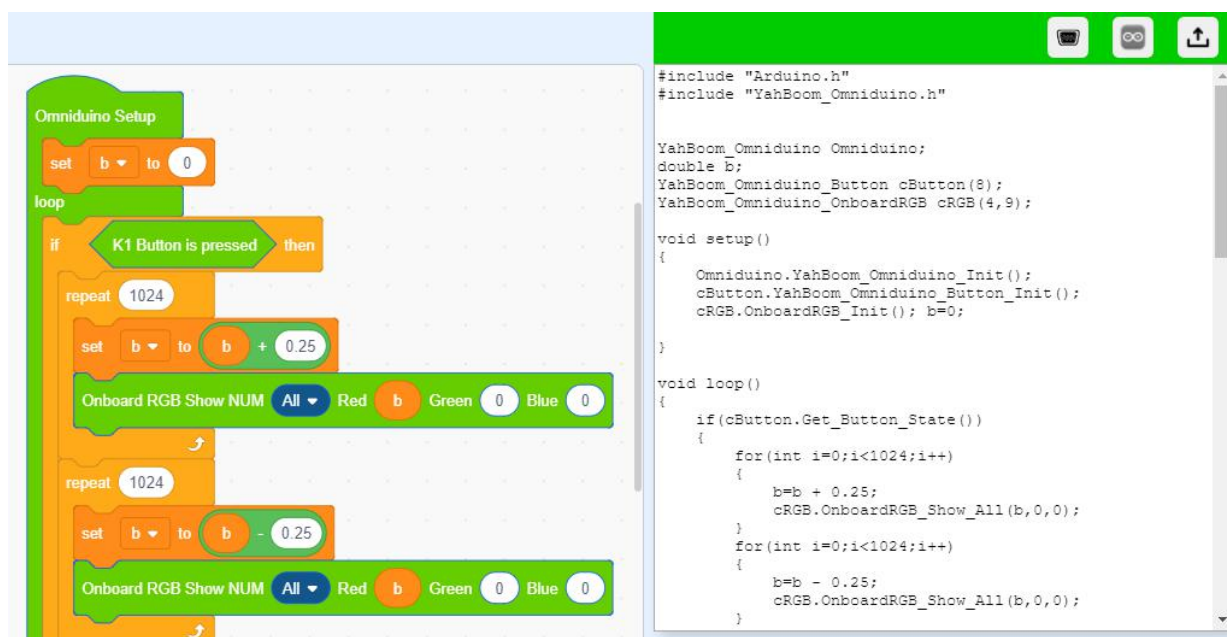
   Onboard RGB Show NUM [All ▾] Red `0` Green `0` Blue `b`

3. Compiling and uploading the program

3.1 After building the blocks, click the **[code mode]** in the upper right corner of the Helloblock programming interface. We can see the corresponding Arduino code.

3.2 Then, you need to connect Omniduino car to your computer. Select the CH340 port number identified in the previous step in the upper right corner. Then, click the up arrow to start compiling and uploading the program.
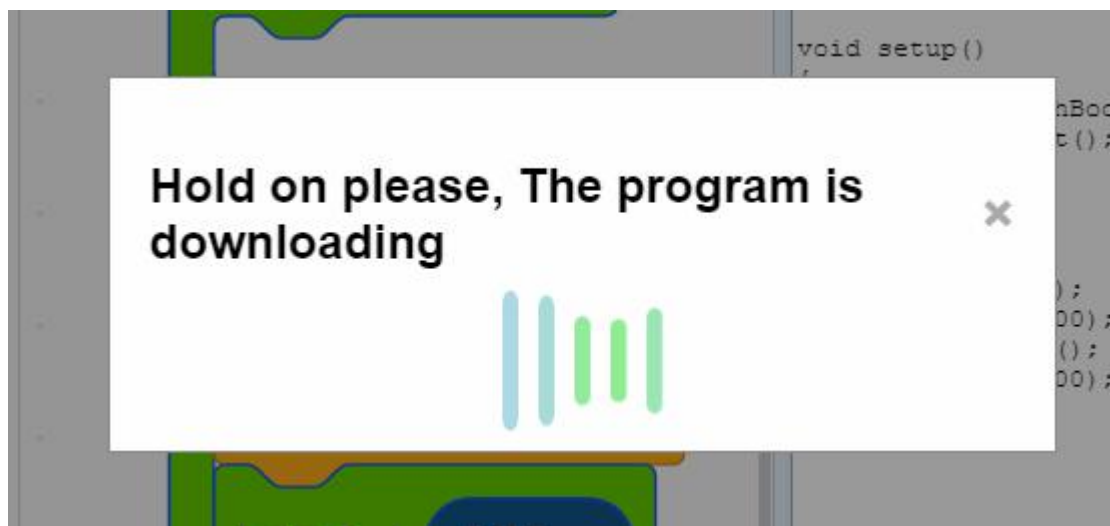
3.3 When the words **"Done compiling   Done uploading"** appear in the lower right corner of the programming interface, which means the program has been uploaded.

4. Experimental phenomenon

After the program is downloaded. When we press K1 button every time, RGB light will gradually change from on to off, then from off to on, and at the same time it will switch to different colors. Finally, it will be off.