

Breathing Light

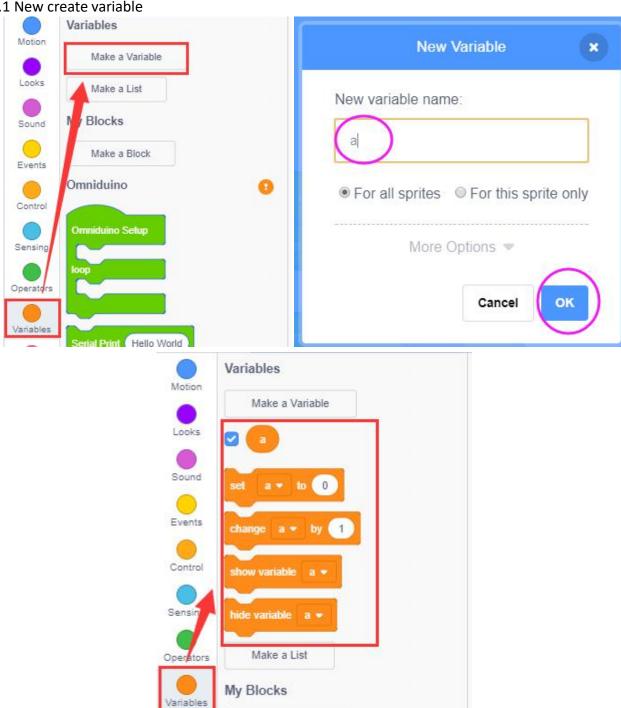
1. Learning goal

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

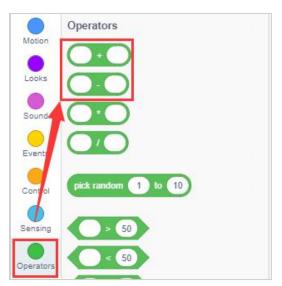




2.2 Select k1 Button and Onboard RGB blocks.



2.3 Operators: + and -.



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





Combine blocks

```
set b → to 0
K1 Button is pressed then
repeat 1024
 set b ▼ to b + 0.25
 Onboard RGB Show NUM All Red 6 Green 0 Blue 0
 repeat 1024
 set b • to b - 0.25
 Onboard RGB Show NUM All Red Green 0 Blue 0
 repeat 1024
 set b ▼ to b + 0.25
 repeat 1024
 set b ≠ to b - 0.25
 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 6
repeat 1024
 set b • to b - 0.25
 Onboard RGB Show NUM All Red 0 Green 0 Blue b
```





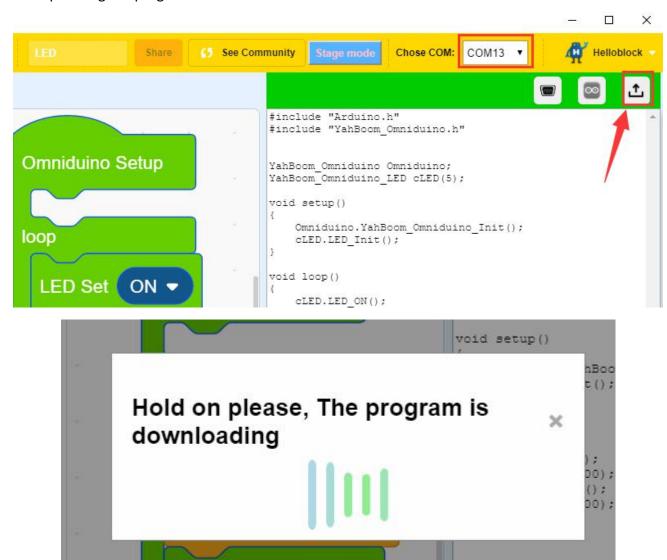
3. Compiling and uploading the program

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.

```
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                                                                                                                                           <u>ث</u>
                                                                         #include "Arduino.h"
#include "YahBoom_Omniduino.h"
                                                                          YahBoom_Omniduino Omniduino;
                                                                          double b;
                                                                          YahBoom_Omniduino_Button cButton(8);
YahBoom_Omniduino_OnboardRGB cRGB(4,9);
   K1 Button is pressed ther
                                                                              Omniduino.YahBoom_Omniduino_Init();
cButton.YahBoom_Omniduino_Button_Init();
cRGB.OnboardRGB_Init(); b=0;
repeat 1024
                                                                          void loop()
  Onboard RGB Show NUM All Red Green 0 Blue 0
                                                                              if(cButton.Get_Button_State())
                                                                                   for(int i=0;i<1024;i++)
repeat 1024
                                                                                       b=b + 0.25;
cRGB.OnboardRGB_Show_All(b,0,0);
                         0.25
                                                                                   for(int i=0;i<1024;i++)
                                                                                       b=b - 0.25;
cRGB.OnboardRGB_Show_All(b,0,0);
```



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.



```
C:\Users\Administrator\AppData\Local\Arduino15/logs
/application.log
DEBUG StatusLogger All asynchronous threads have
terminated
DEBUG StatusLogger RollingFileManager shutdown
completed with status true
>DEBUG StatusLogger Shut down RollingFileManager
C:\Users\Administrator\AppData\Local\Arduino15/logs
/application.log, all resources released: true
>TRACE StatusLogger XmlConfiguration stopped 2
remaining Appenders.
TRACE StatusLogger XmlConfiguration cleaning
Appenders from 2 LoggerConfigs.
>DEBUG StatusLogger Stopped
XmlConfiguration[location=jar:file:/C:/Program%20Fi
les%20(x86)/Helloblock/resources/Arduino/lib/pde.ja
r!/log4j2.xml] OK
>DEBUG StatusLogger Stopped
LoggerContext[name=1e6f5c3,
org.apache.logging.log4j.core.LoggerContext@16bc455
l with status true
>Done compiling. Done uploading!
```

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.