



[www.microduino.cc](http://www.microduino.cc)

**microCookie**

101 Basic Kit Instructions



CREATIVITY IS **CONTAGIOUS**  
**PASS IT ON!**



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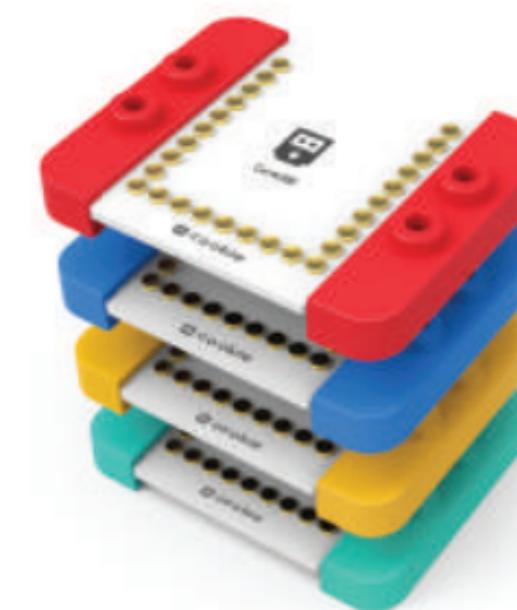
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# Modules/Sensors



## m cookie

**mCookie** is Microduino's second generation smart modules. Using the all new implementation of magnetic connectors and pogo pins, they are now much easier to use. The colorful modules can be paired with LEGO® to create countless projects with ease.

With the mCookie, **Everyone is an Inventor!**



## Core

Red modules have to do with core functionalities such as uploading programs and controlling other modules. They are the brain of all projects.



## Function

Yellow modules are the function modules, each with its own particular use. Just stack the corresponding function modules to create what you have in mind.



## Communication

Blue modules are tasked with communicating with other devices, either wired or wirelessly.



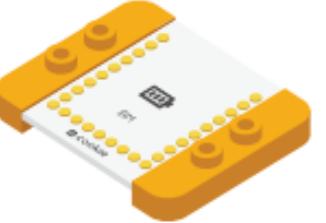
## Extension

Green modules are extension boards. They are equipped with different types of connections to accommodate sensors and other devices.



## CoreUSB

The CoreUSB module is the control center for all projects. Each one is equipped with a standard MicroUSB port to transfer programs between the module and your computer.



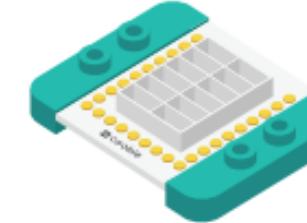
## Battery Management

The Battery Management module has a port to connect the mCookie Battery module to provide energy to your projects.



## Bluetooth

The Bluetooth module provides bluetooth functionality. With a mobile app, project functions can be controlled using your phone.



## Hub

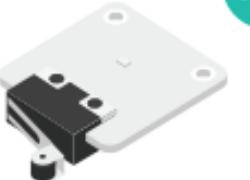
The Hub module offers 12 different connection ports for attaching sensors and other external devices.



x2

## ColorLED

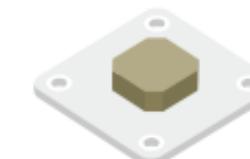
Multicolor LED. Supports 16 million colors and multiple LED connections, bringing vibrancy to your ideas.



x2

## Crash Sensor

Using the lever principle, a firm click will establish a connection, effective as a button for many applications.



## Buzzer

A simple noise-making device that can be used as an alarm or reminder. You can also play simple music that has little pitch variation!



## Microphone Sensor

The cylindrical cone is the microphone. This particular sensor is unable to record audio contents, but instead, it measures the loudness of its surroundings.



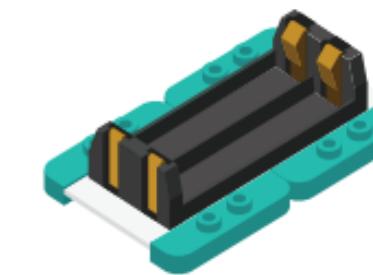
## USB Cable

Connects the CoreUSB module to a computer. You can then upload programs into the module as well as provide it power.



## Sensor Cable

Used to connect various sensors and external devices.



## Battery Module

Supports either two AAA batteries (1.5V) or one/two lithium batteries (3.7V). Use a switch on the bottom to switch between the two battery types.



## LEGO® Connector

Snap these onto the bottom of your modules to easily attach them onto your LEGO®!

# Getting Started !

Install IDE & Drivers  
For **WINDOWS**



**1**

## Download the IDE and Drivers

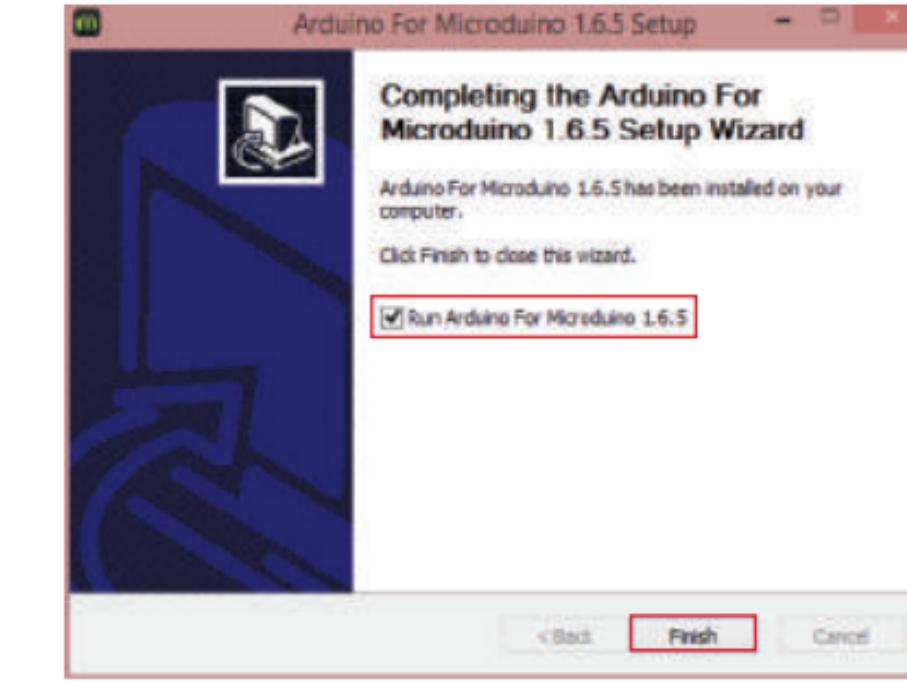
1. Download the Arduino IDE with integrated Microduino libraries for all your modules and sensors from our website:

[www.microduino.cc/download](http://www.microduino.cc/download)

2. Click on Download under Windows and follow the instructions to complete your installation:



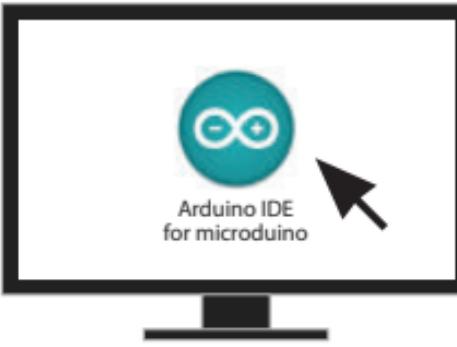
Arduino IDE for  
Microduino



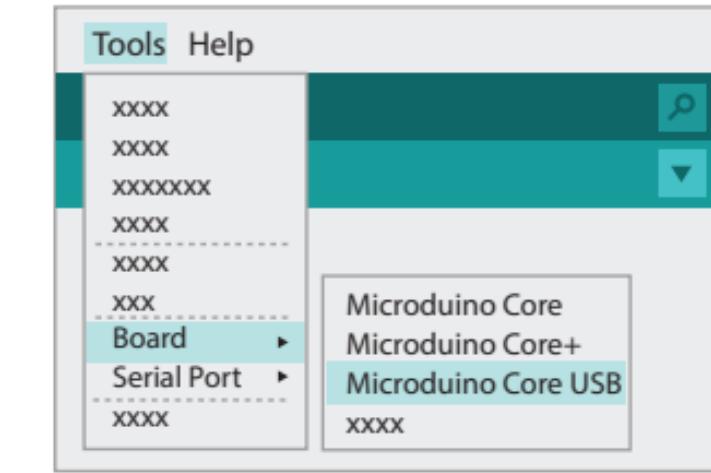
3. Follow the instructions until you see the window on the left. Click Finish to complete your installation.

## 2

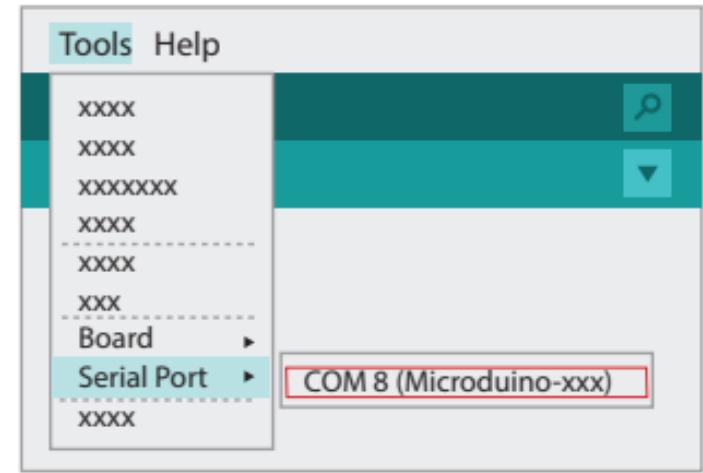
## Verify IDE



1. Connect your CoreUSB module to your PC with the provided USB cable. Then open your Arduino IDE.



2. Select Tools > Board > Microduino CoreUSB.



3. If the drivers installed successfully, you should see COMx options under Tools > Serial Port.

**For MAC**



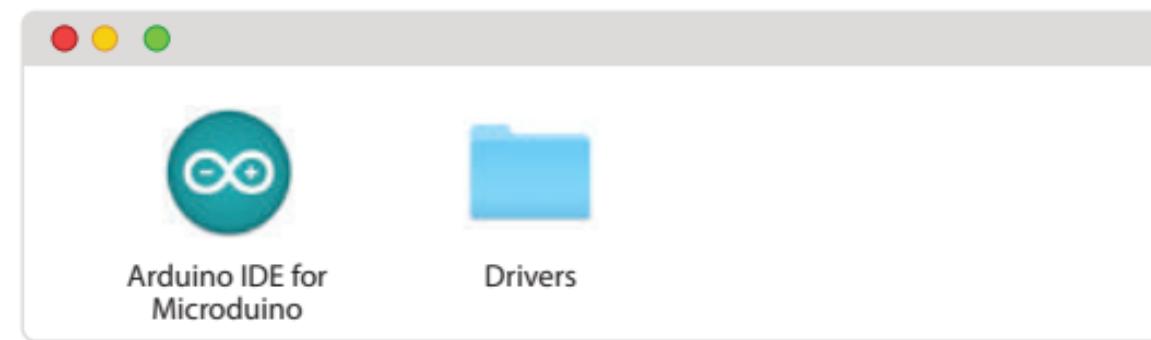
1

## Download the IDE and Drivers

1. Select the download for your version of Mac OS from our website:

[www.microduino.cc/download](http://www.microduino.cc/download)

2. Open the downloaded file and you will see the Arduino IDE as well as a folder for drivers.

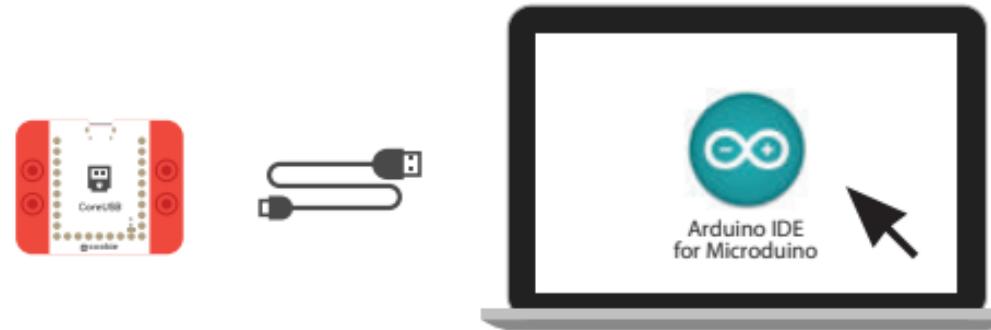


3. Open the Drivers folder and then install the corresponding drivers for your Mac OS version.

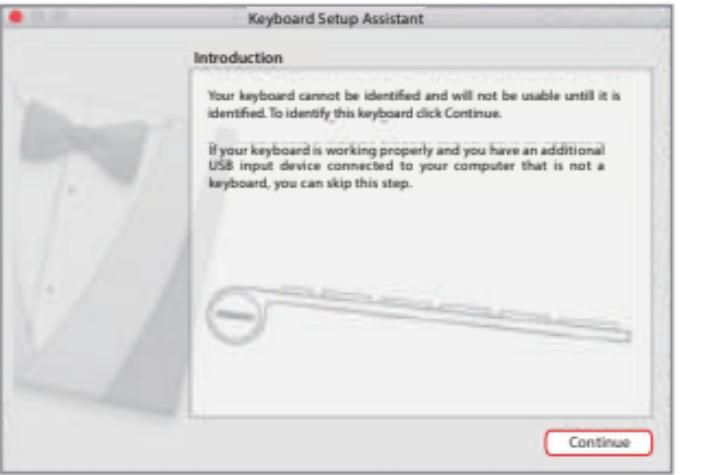


4. Follow the instructions to complete the installation.

## 2 Verify IDE



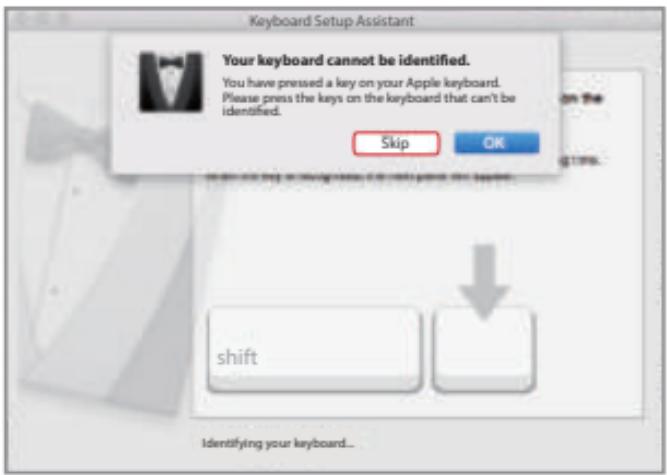
1. Connect your CoreUSB module to your MAC with the provided USB cable. Start your Arduino IDE.



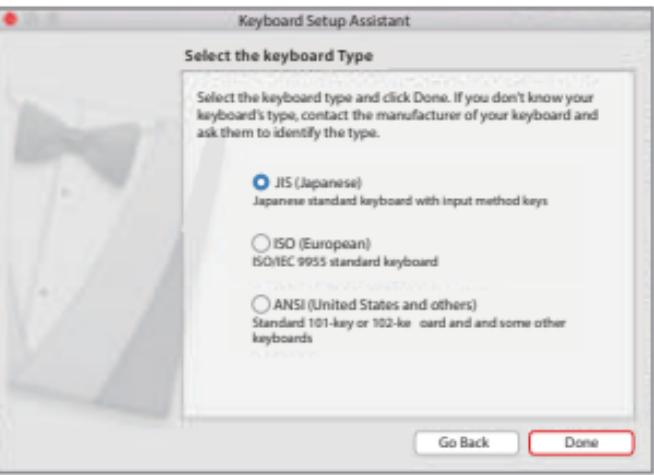
2. Your Mac may falsely detect the CoreUSB as a keyboard. If the above popup appears, press continue.



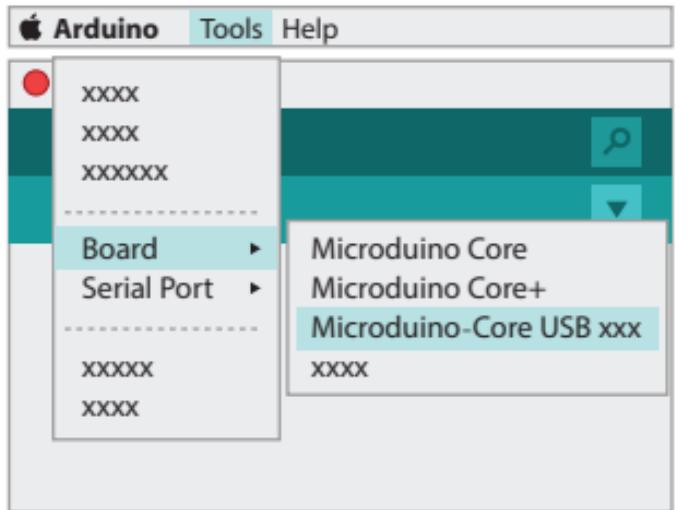
3. Follow the instructions and press down the key to the right of your shift key.



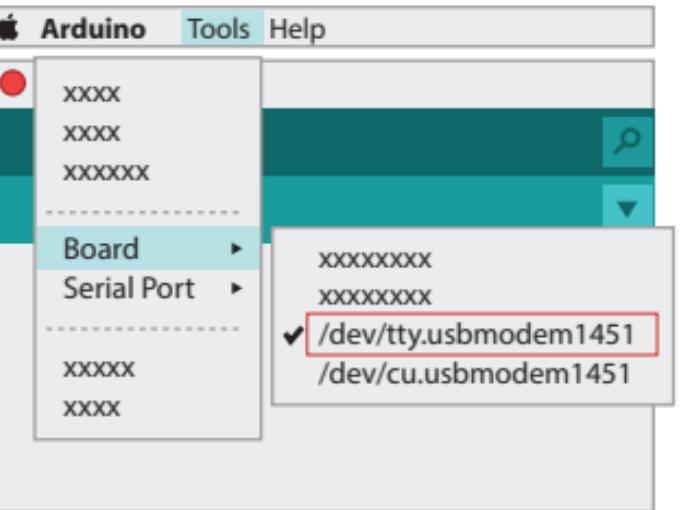
4. Naturally, your Mac will still be unable to identify the module as a keyboard. Press Skip.



5. Lastly, choose the keyboard layout for your region and click Done. You have successfully installed Microduino drivers!

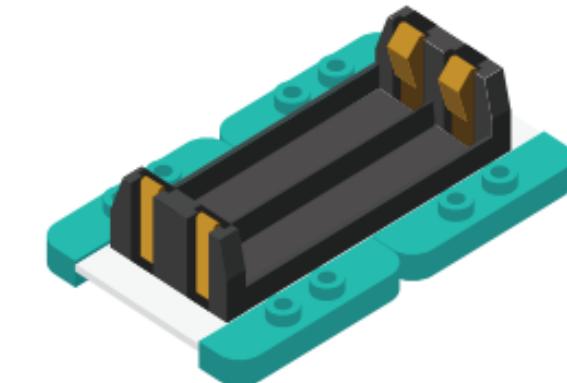


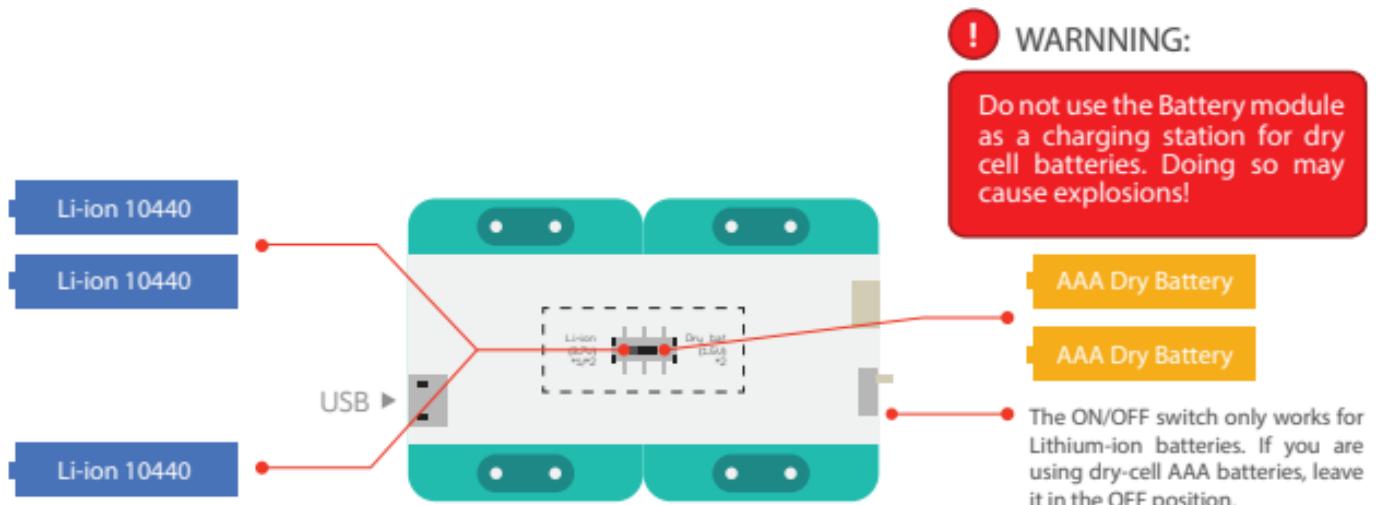
6. Select Tools > Board > Microduino CoreUSB.



7. If the drivers installed successfully, you should see /dev/tty.usbmodem1451 under Tools > Serial Port.

## Activate Battery Module





- The Battery module supports both rechargeable 10440 lithium-ion batteries and standard AAA dry cell batteries. You have the option of using either one or two lithium-ion batteries. Use the switch on the bottom to switch between the type of battery used.
- Note: Choose your desired mode prior to inserting the batteries. Changing modes while the batteries are inserted may affect operation.



- Prior to using the Battery module, it must first be activated. Use the provided USB cable to connect the module to your computer. After two seconds, the module is ready for project use.
- Note: The above step must be completed every time new batteries are inserted.

# Projects

## Try your mCookies

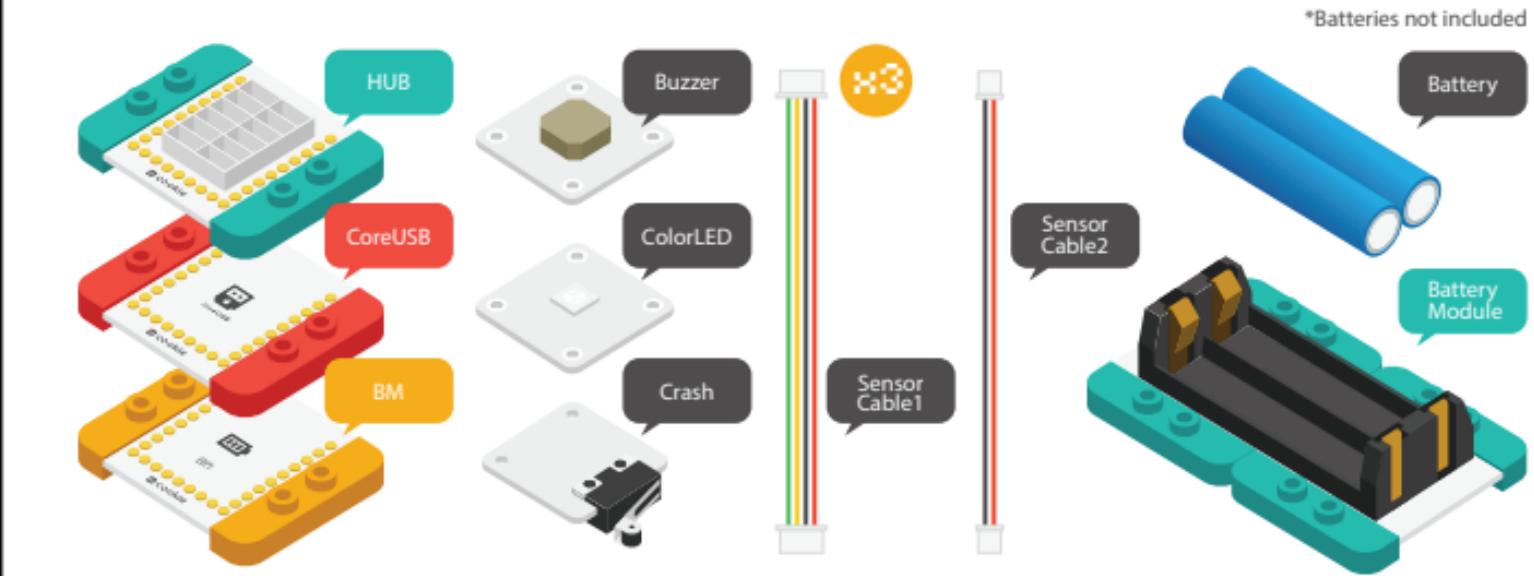
- 1 Birthday Light ..... P.29
- 2 Grumpy Grandpa ..... P.38
- 3 Bluetooth Light ..... P.47

## PROJECT 1 Birthday Light

Press a button to hear a birthday song and see dazzling lights!

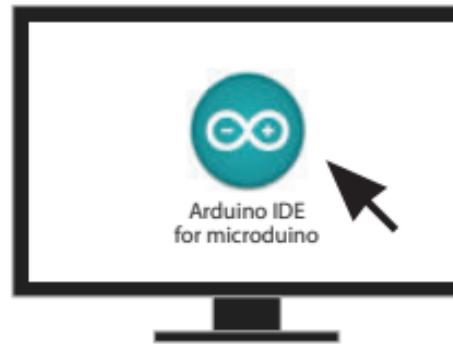


## You will need

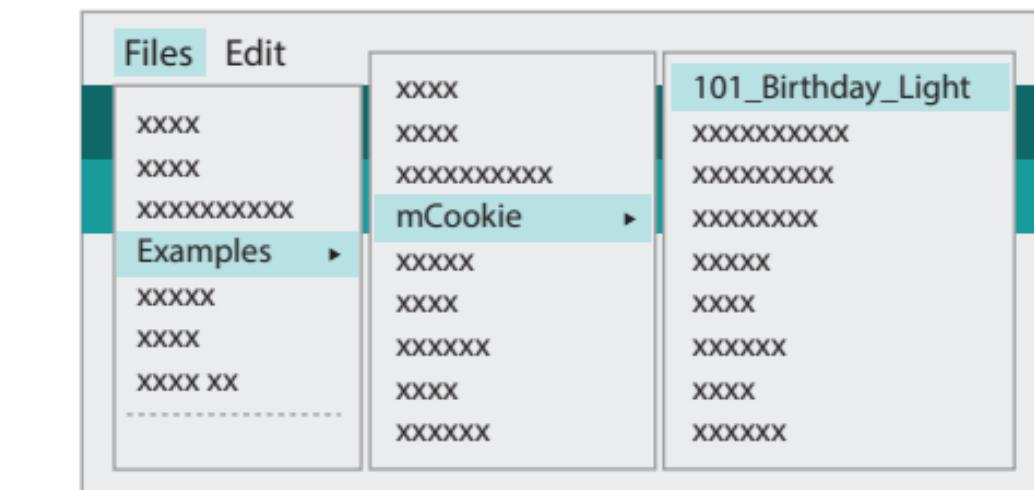


# 1

## Upload the Code



1. Connect the CoreUSB module to your computer and then start the Arduino IDE.



2. Select Files > Examples > mCookie > 101\_Birthday\_Light.

```
101_Birthday_Light | Arduino 1.0.6
Birthday Light key.h
if (add == 1)
  colorSet(strip.Color(i*10, 0, 0));
else if (add == 2)
  colorSet(strip.Color(0, i*10, 0));
else if (add == 3)
  colorSet(strip.Color(0, 0, i*10));
else if (add == 4)
  colorSet(strip.Color(i*10,i*10, 0));
if (!play_pause)
{

```

```
101_Birthday_Light | Arduino 1.0.6
Birthday Light key.h
if (add == 1)
  colorSet(strip.Color(i*10, 0, 0));
else if (add == 2)
  colorSet(strip.Color(0, i*10, 0));
else if (add == 3)
  colorSet(strip.Color(0, 0, i*10));
else if (add == 4)
  colorSet(strip.Color(i*10,i*10, 0));
if (!play_pause)
{

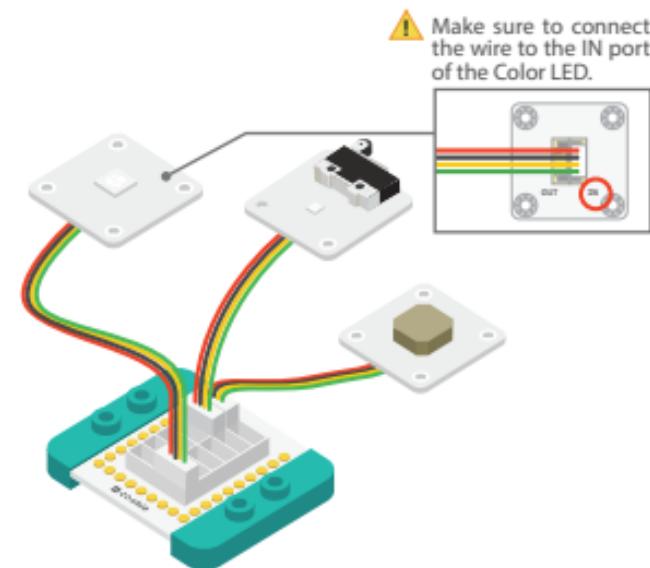
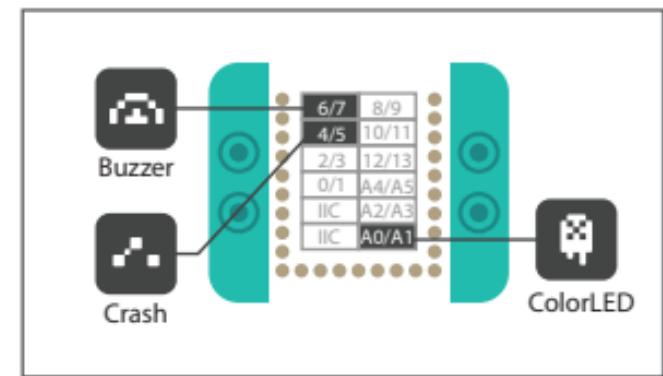
```

Done Uploading.

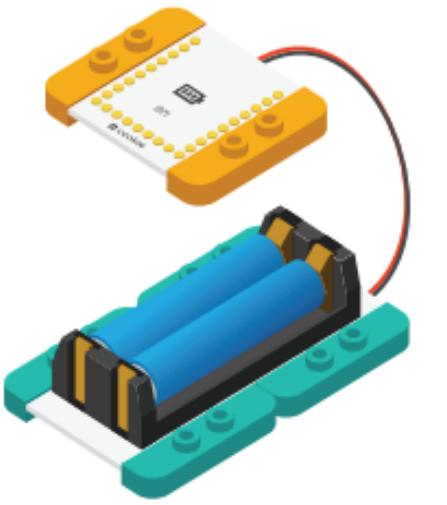
Binary sketch size: 14,312 bytes (of a 28,860 byte maximum)

3. Click to upload the program. When "Done Uploading" appears, the program should have successfully been uploaded into the CoreUSB.

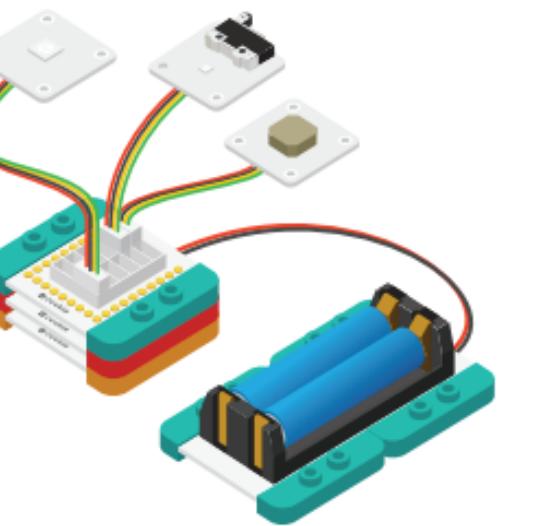
## 2 Build the circuit



1. Using the above diagram as reference, connect the sensors into the corresponding ports on the Hub module.



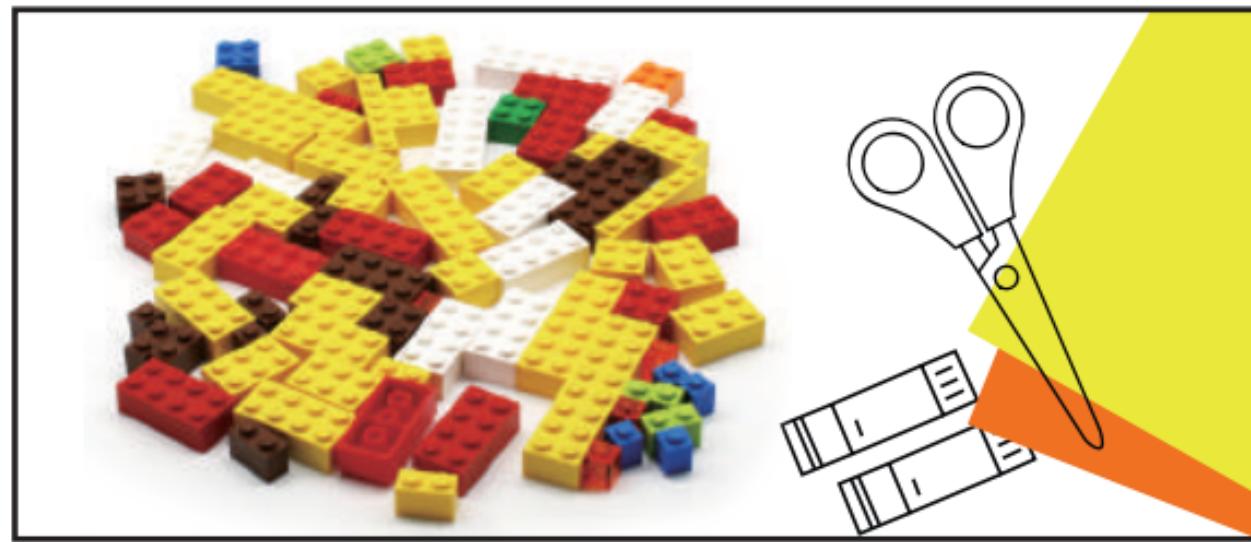
2. Connect the activated Battery module to your Battery Management module.



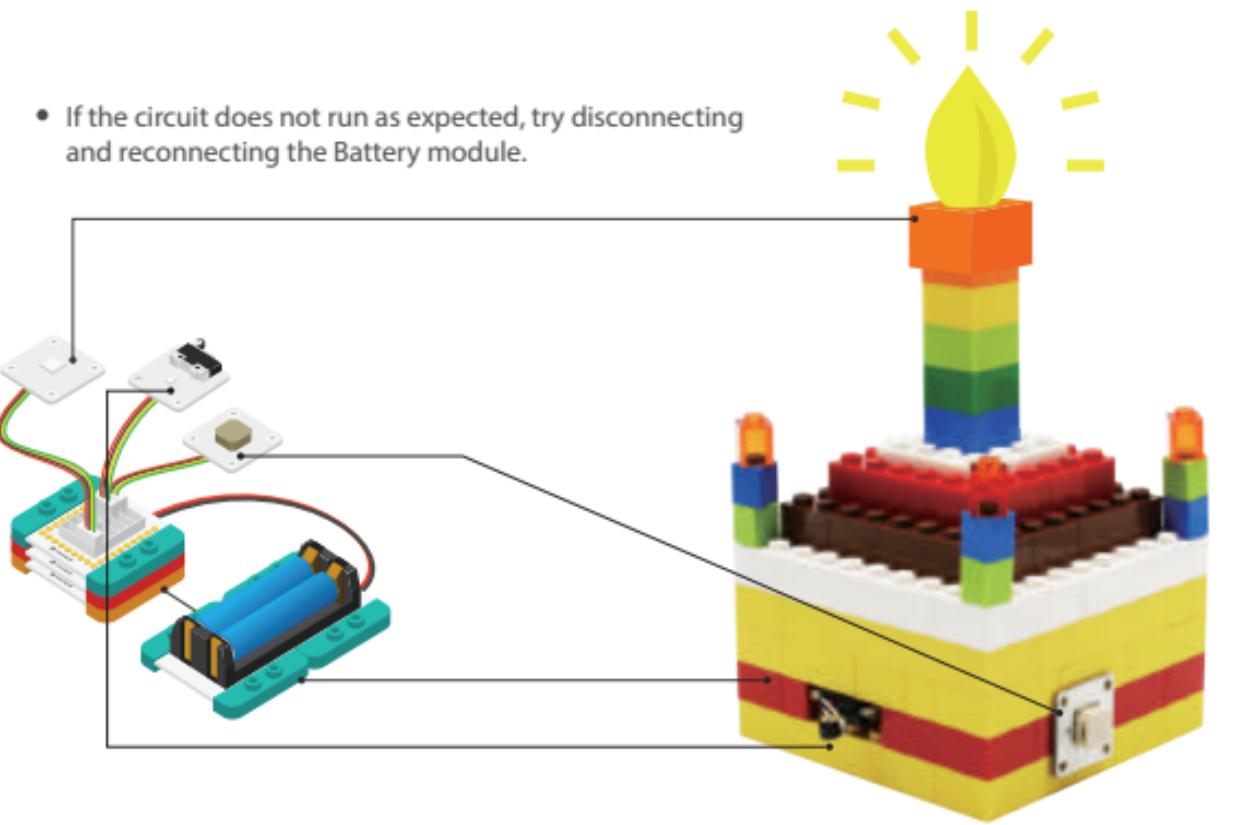
3. Stack all the modules together in any order you like. Congratulations, you have finished building the circuit!

3

Make your birthday cake!



- If the circuit does not run as expected, try disconnecting and reconnecting the Battery module.



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## PROJECT 2 GRUMPY GRANDPA

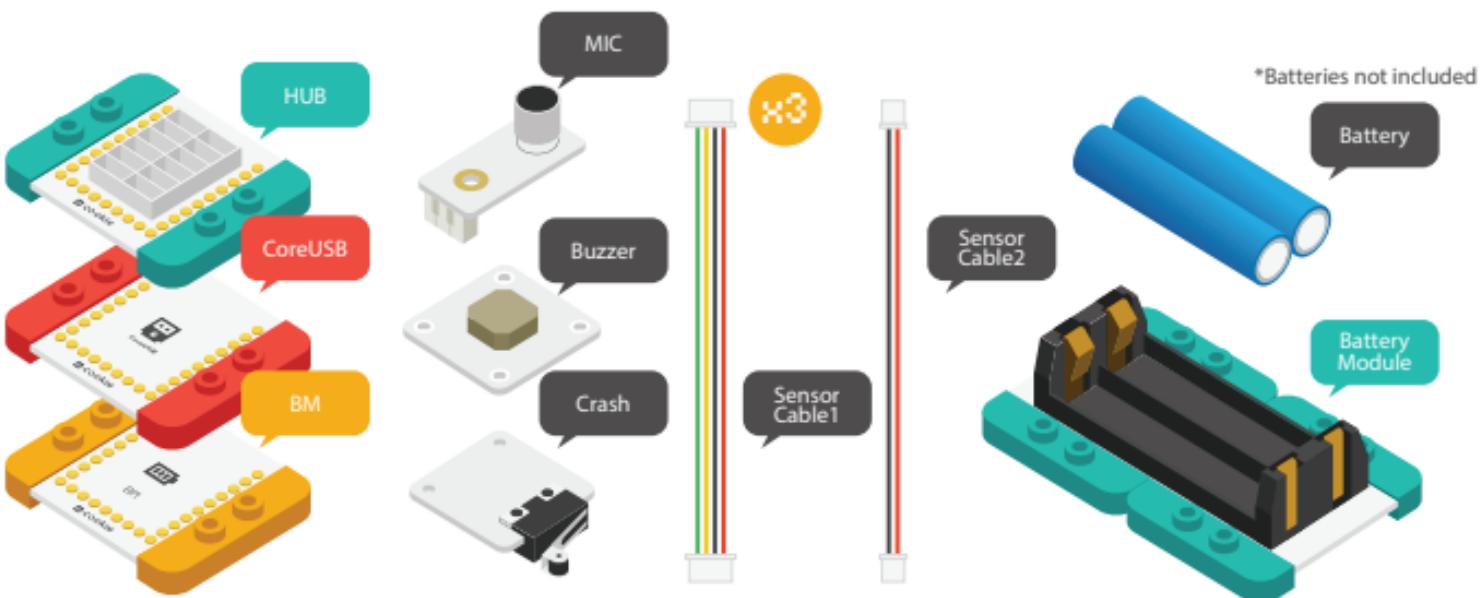
### Grumpy Grandpa hates loud noises!

Whenever it gets too loud, an alarm goes off. Make sure to press a button if you want your own peace and quiet!



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## You will need

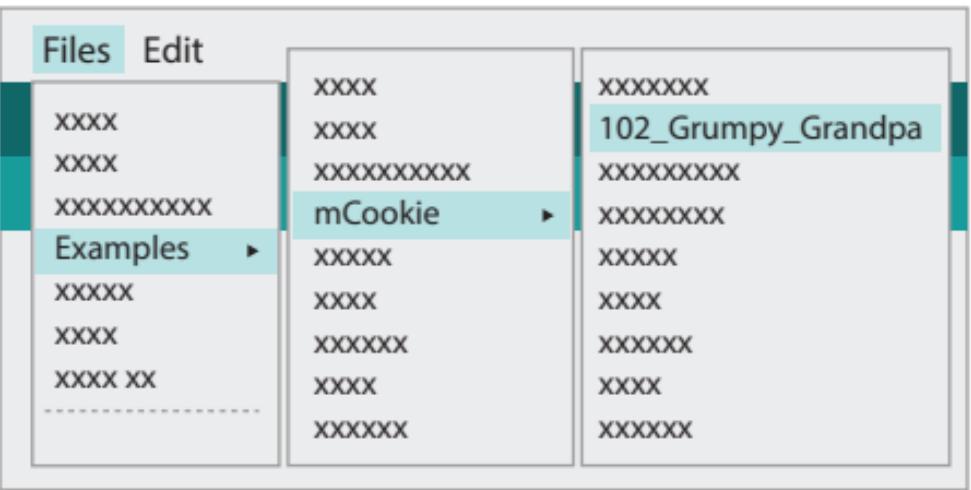


1

## Upload the Code



1. Connect the CoreUSB module to your computer and then start the Arduino IDE.



2. Select Files > Examples > mCookie > 102\_Grumpy\_Grandpa.

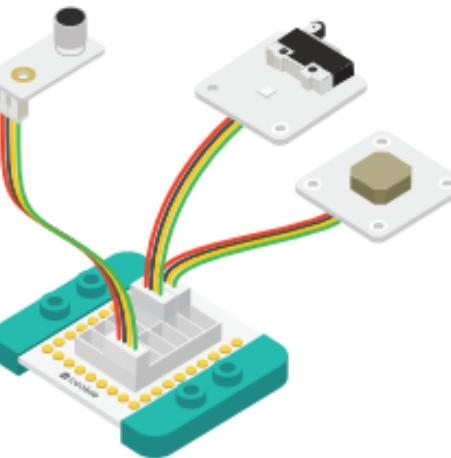
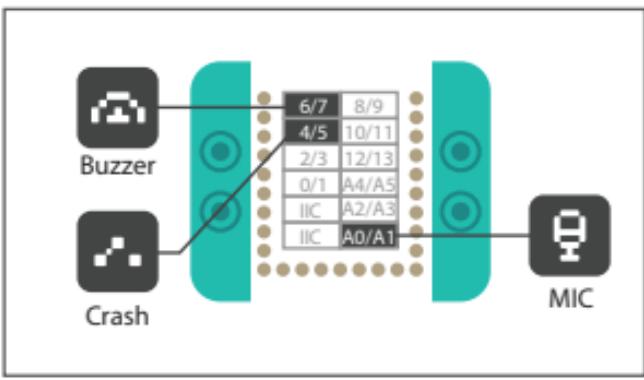


3. Click to upload the program. When "Done Uploading" appears, the program should have successfully been uploaded into the CoreUSB.

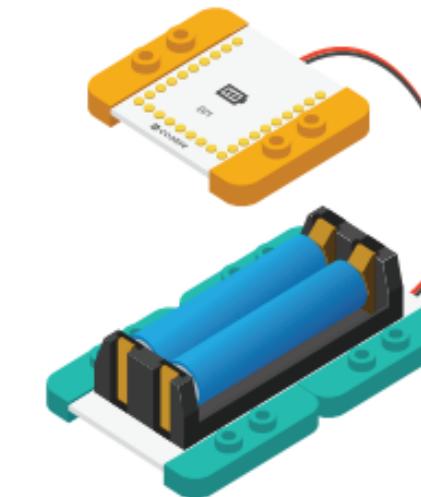


2

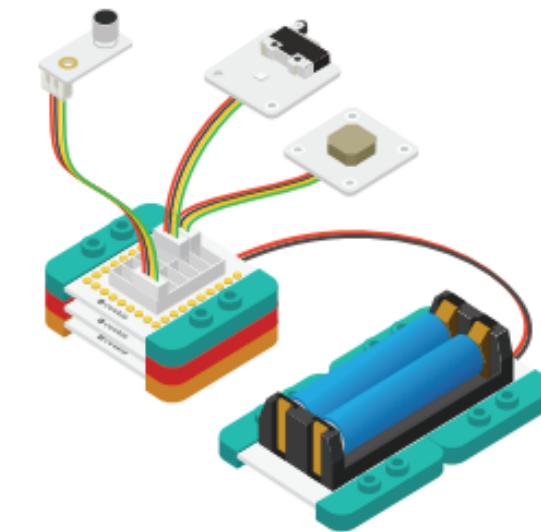
## Build the circuit



1. Using the above diagram as reference, connect the sensors into the corresponding ports on the Hub module.



2. Connect the activated Battery module to your Battery Management module.



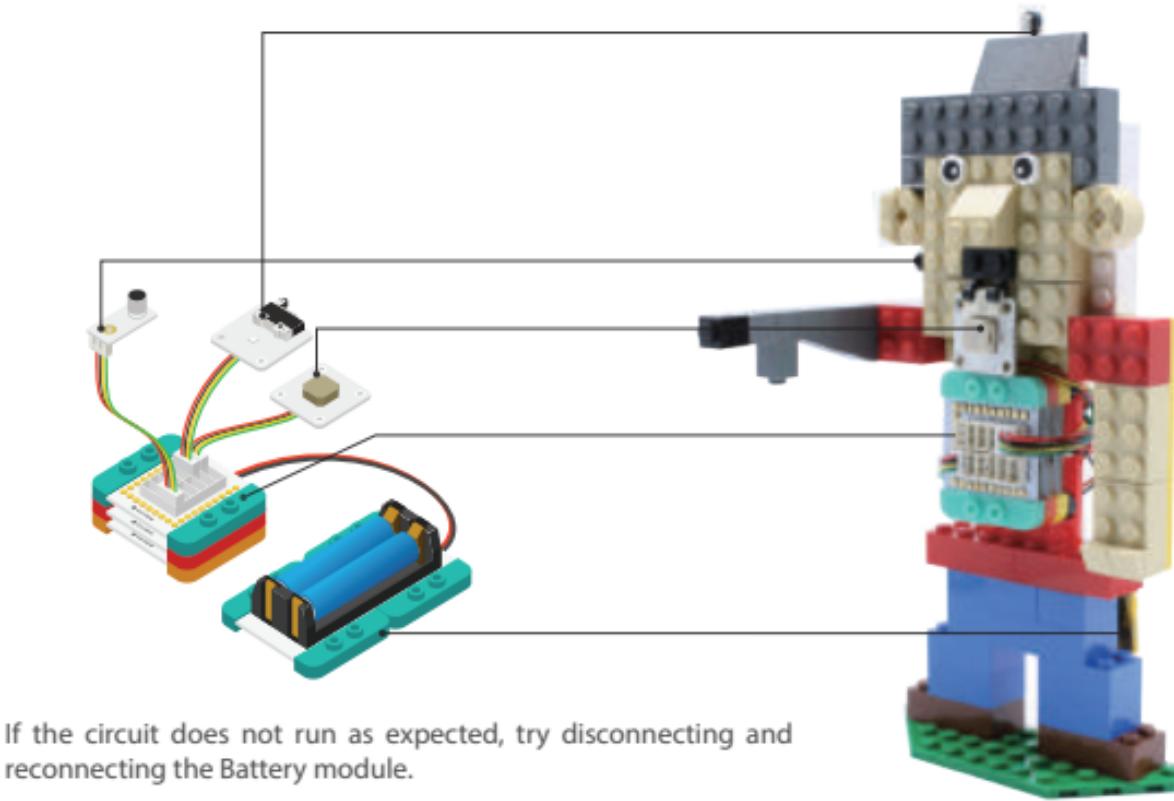
3. Stack all the modules together in any order you like. Congratulations, you have finished building the circuit!

3

### Make your LEGO® Grandpa!



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- If the circuit does not run as expected, try disconnecting and reconnecting the Battery module.

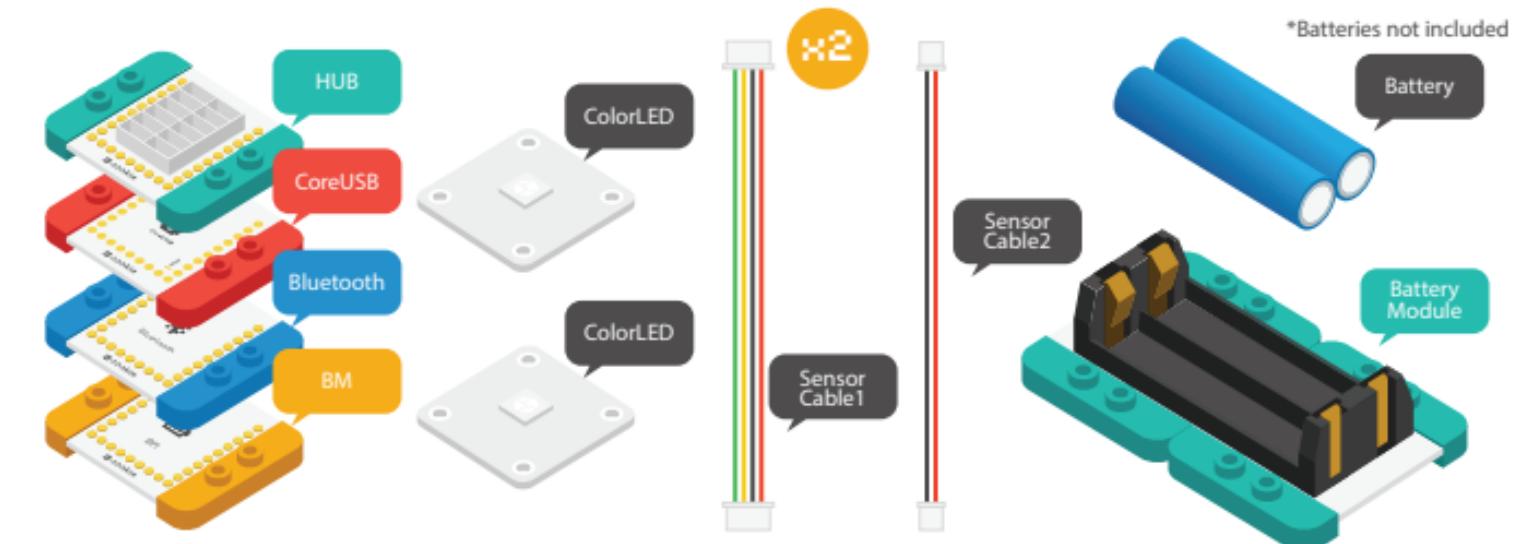
46

## PROJECT 3 BLUETOOTH LIGHT

Use our Microduino Android App to control the ambiance of your room without even getting up from your seat!

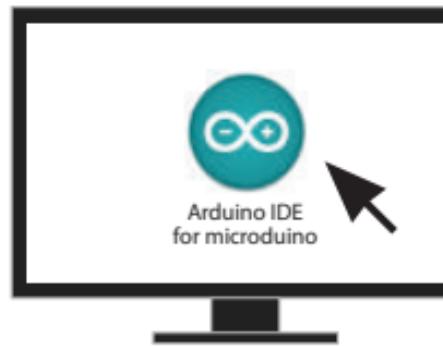


## You will need

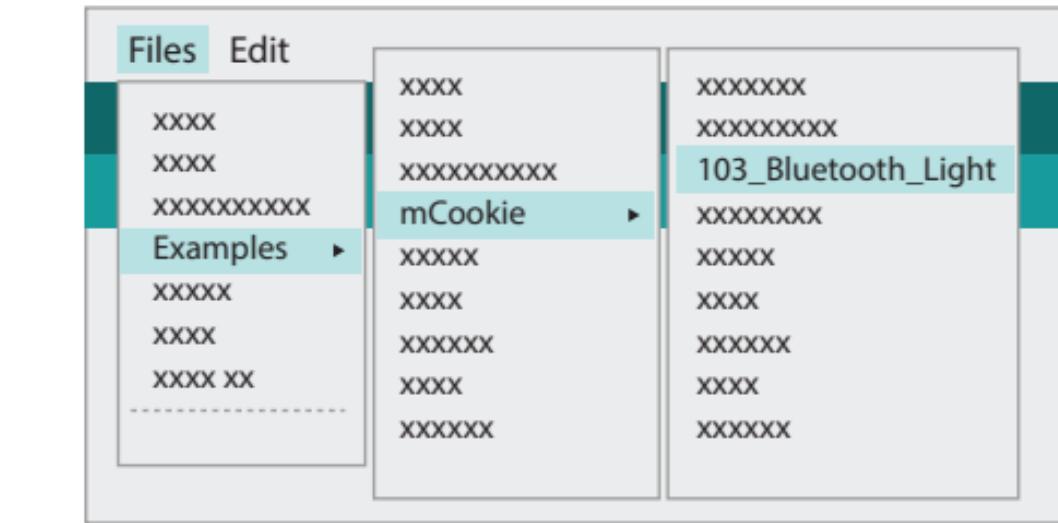


# 1

## Upload the Code



1. Connect the CoreUSB module to your computer and then start the Arduino IDE.



2. Select Files > Examples > mCookie > 103\_Bluetooth\_Light.

103\_Bluetooth\_Light | Arduino 1.0.6

103\_Bluetooth\_Light

```
#include "key.h"
#define voice 400
#define mic_pin A0
#define buzzer_pin 6
#define key_pin 4
```

103\_Bluetooth Light | Arduino 1.0.6

103\_Bluetooth\_Light

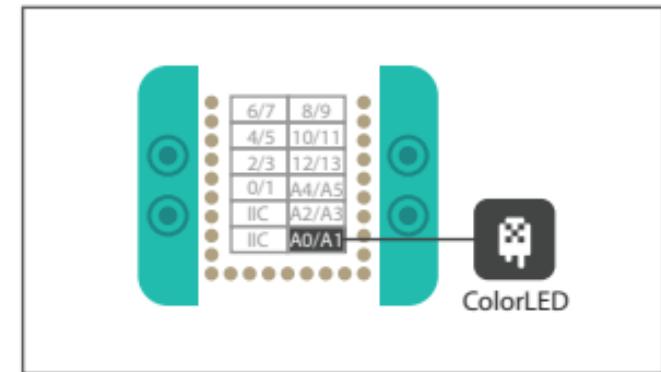
```
#include "key.h"
#define voice 400
#define mic_pin A0
#define buzzer_pin 6
#define key_pin 4
```

Done Uploading

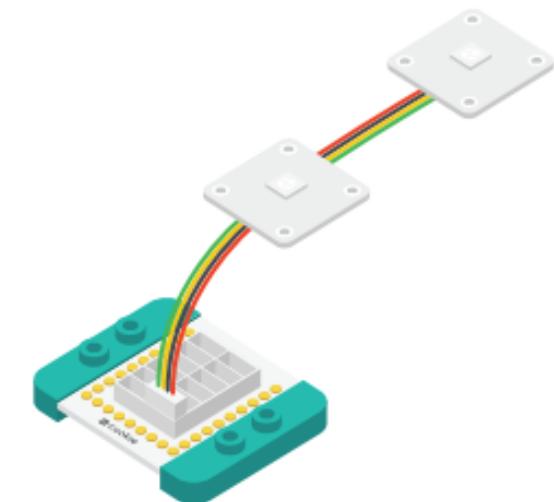
Binary sketch size: 14,312 bytes (of a 28,860 byte maximum)

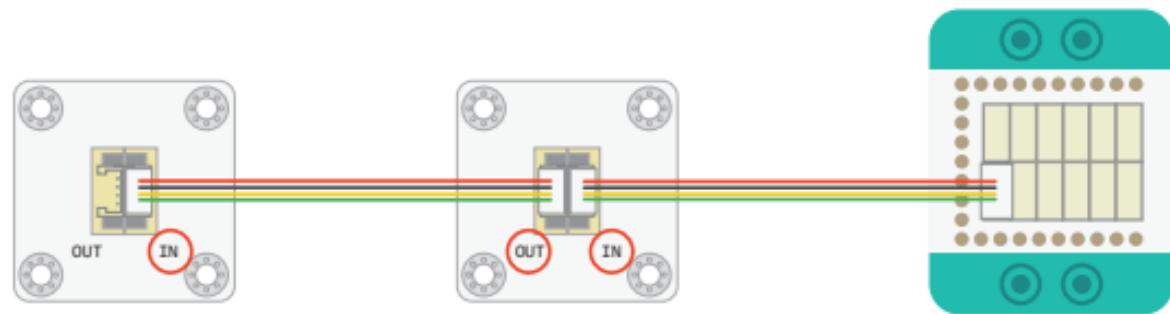
3. Click  to upload the program. When "Done Uploading" appears, the program should have successfully been uploaded into the CoreUSB.

## 2 Build the circuit

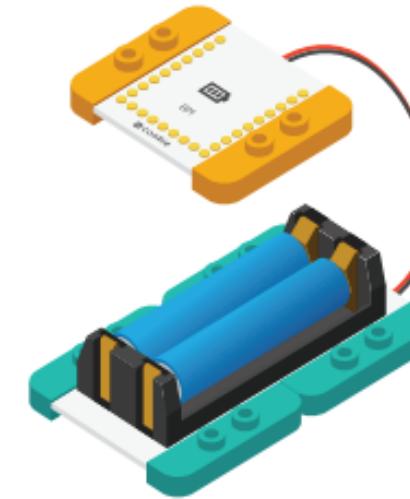


1. Using the above diagram as reference, connect the LED chain into the corresponding port on the Hub module.

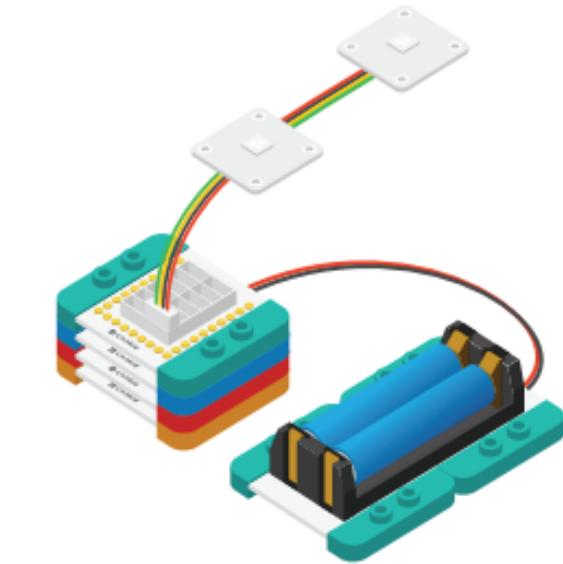




To connect multiple LEDs in a series, follow the above diagram. Notice that the sensor cable connects to the IN ports of the LEDs. You can support up to six LEDs!



2. Connect the activated Battery module to your Battery Management module.



3. Stack all the modules together in any order you like. Congratulations, you have finished building the circuit!

## 3

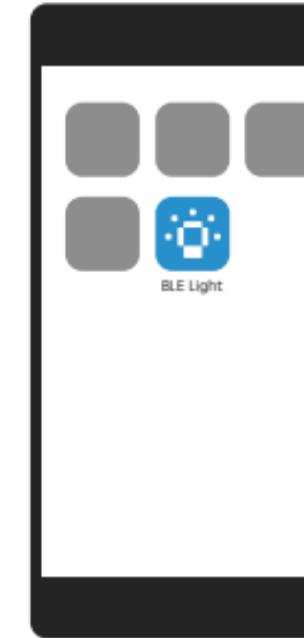
## Download the Android App

1. Scan the QR code to the left (or go to our website) and download the Bluetooth Light APP.

 ATTENTION:

The Bluetooth Light APP currently only supports Android 4.0 or higher.

[www.microduino.cc/download](http://www.microduino.cc/download)



2. Begin the app after installation. If your bluetooth function is not turned on, Android will remind you. Choose to enable bluetooth.



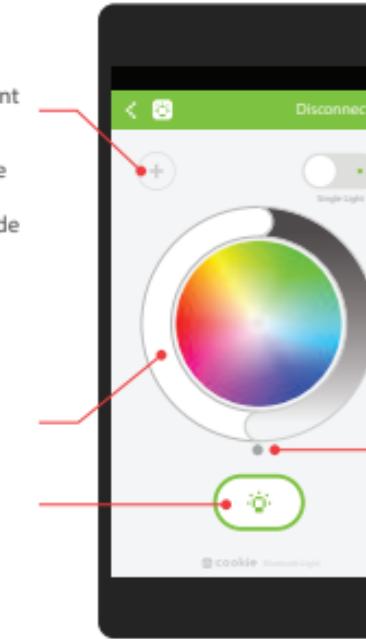
3. Tap Scan. Your Android will begin searching for bluetooth devices near you. Select the device named Microduino.

There are three different preset ambiances.

- Cool ambiance mode
- Warm ambiance mode
- Ambiance changes depending on the sounds of its environment

This area displays your previous color scheme.

LED ON/OFF switch



A green status bar indicates that the connection is successful. Tap "Disconnect" to disconnect your project from Android.

Use the slider to change between control modes.

Use this slider to adjust the brightness.

4. After your Android is connected, enjoy creating vibrant colors right from your phone!

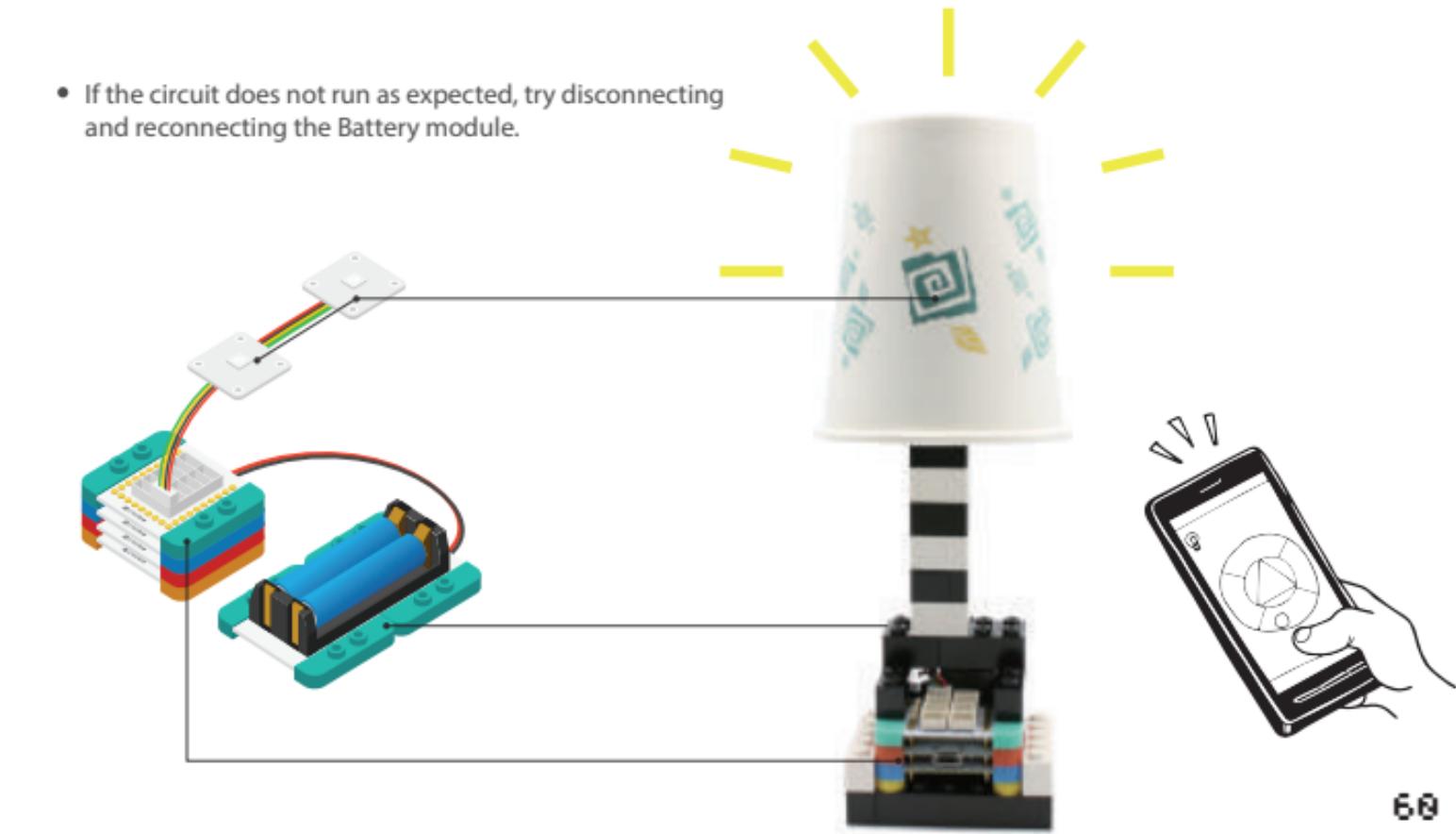
4

## Make your own lamp!



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- If the circuit does not run as expected, try disconnecting and reconnecting the Battery module.



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# Contact

## More Projects & Information

[www.microduino.cc](http://www.microduino.cc)

[wiki.microduino.cc](http://wiki.microduino.cc)

## Contact

Support: [support@microduino.cc](mailto:support@microduino.cc)

Media: [community@microduino.cc](mailto:community@microduino.cc)

Community and Technical Support: [www.microduino.cc/forum/](http://www.microduino.cc/forum/)

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NOTE:

 cookie  
Designed by microduino