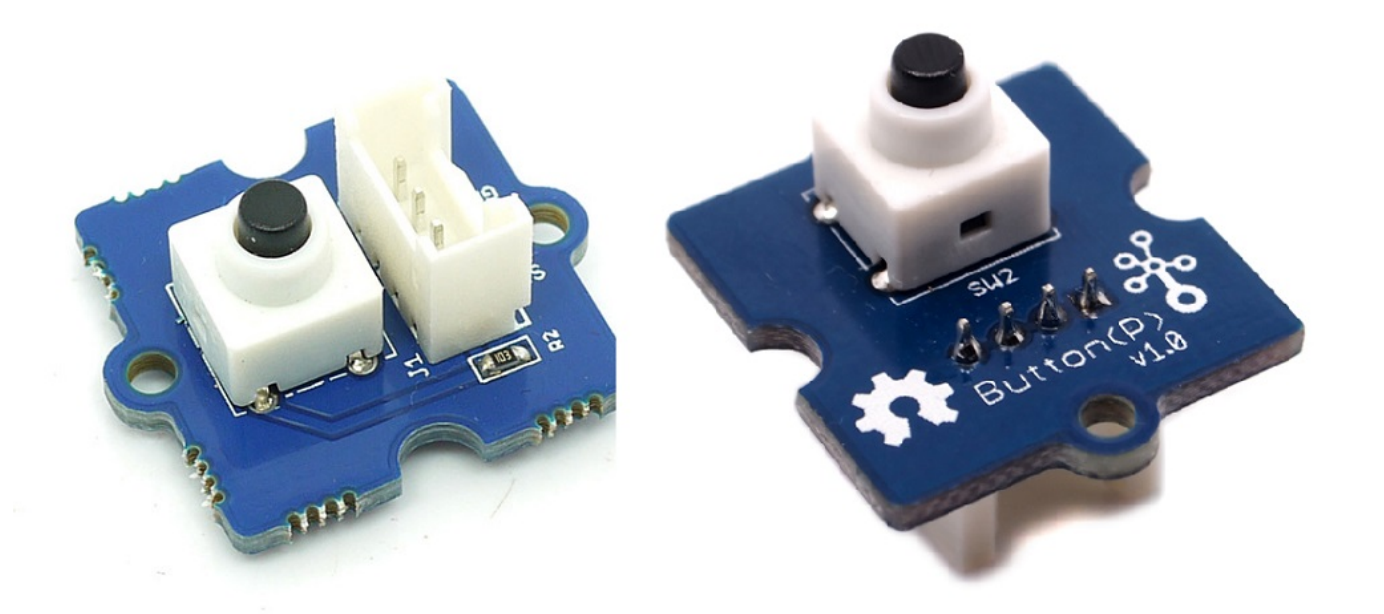


# Grove - Button(P) SKU: 111020000



Grove - Button is a momentary push button. It contains one independent "momentary on/off" button. "Momentary" means that the button rebounds on its own after it is released. The button outputs a HIGH signal when pressed, and LOW when released. The Sig marked on silk layer stands for signal while NC stands for not used at all. There are two versions of this button available as showed in the pictures. The only difference is the direction of the Grove socket.

## Version

Product Version	Changes	Released Date
Grove-Button	Initial	Nov 25 2010

## Features

- Easy to use momentary ON/OFF button
- Uses Standard 4-pin Grove Cables

!!!Tip More details about Grove modules please refer to [Grove System](#)

## Specification

Parameter	Value/Range
Operating voltage	3.3/5V
Electrical Life	200,000 cycles
Operation Force	100 ± 50gf
Operation Temperature	-25°C to +70°C

Parameter	Value/Range
Size	L:20mm W:20mm H:16mm
Weight	2.1g
Certification	ROHS

## Platforms Supported

Arduino	Raspberry Pi	BeagleBone	Wio	LinkIt ONE
				




!!!Caution The platforms mentioned above as supported is/are an indication of the module's software or theoretical compatibility. We only provide software library or code examples for Arduino platform in most cases. It is not possible to provide software library / demo code for all possible MCU platforms. Hence, users have to write their own software library.

## Getting Started

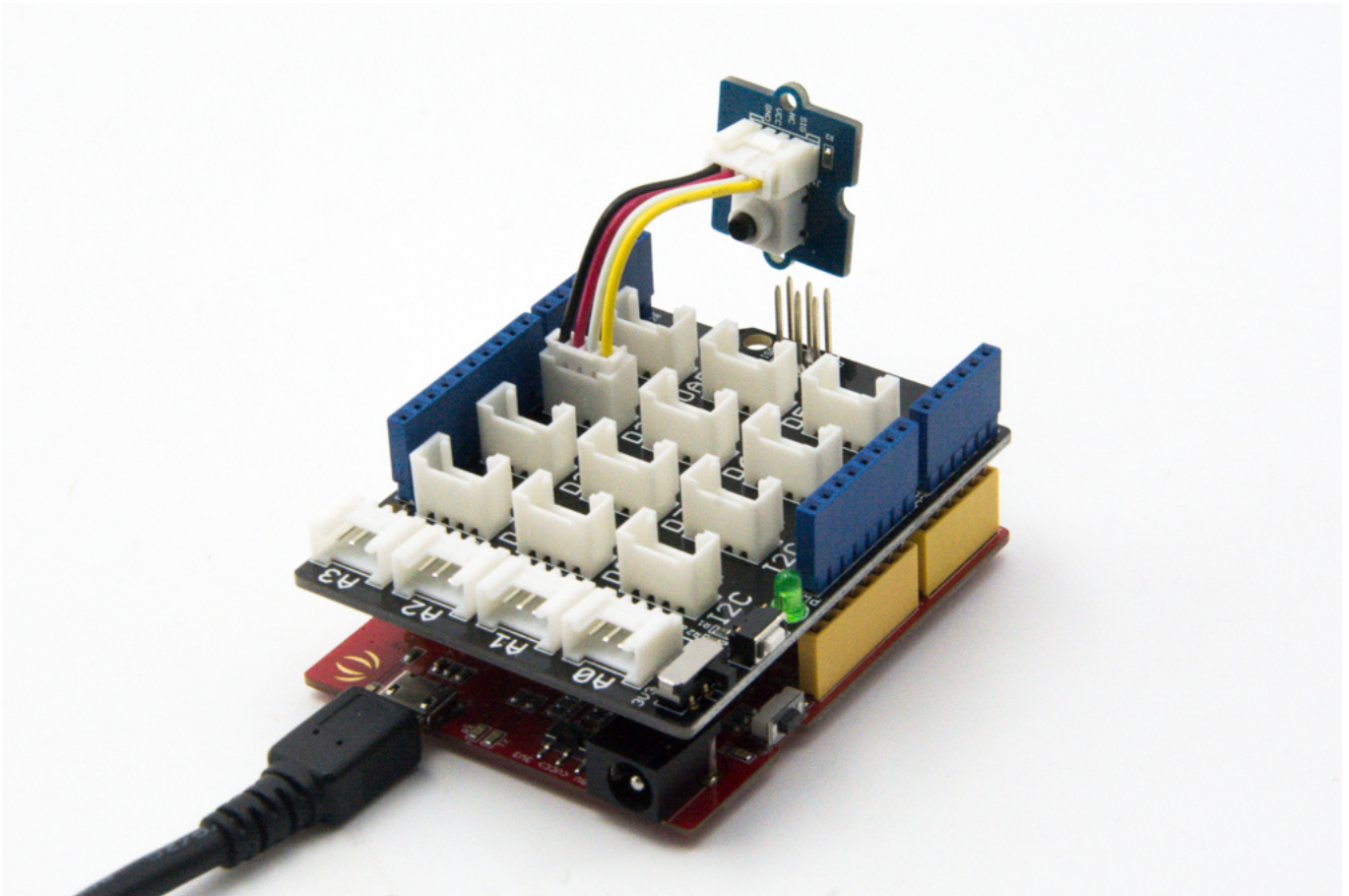
### Play With Arduino

#### Hardware

- Step 1. Prepare the below stuffs:

Seeeduino V4.2	Base Shield	Grove - Button
		

- Step 2. Connect Grove-Button to port D2 of Grove-Base Shield.
- Step 3. Plug Grove - Base Shield into Seeeduino.
- Step 4. Connect Seeeduino to PC through a USB cable.



!!!Note If we don't have Grove Base Shield, We also can directly connect Grove-Button to Seeeduino as below.

Seeeduino	Grove-Button
5V	Red
GND	Black
Not Conencted	White
D2	Yellow

## Software

- Step 1. Copy the code into Arduino IDE and upload.

```
const int buttonPin = 2;    // the number of the pushbutton pin
const int ledPin = 13;      // the number of the LED pin

// variables will change:
int buttonState = 0;        // variable for reading the pushbutton status

void setup() {
  // initialize the LED pin as an output:
  pinMode(ledPin, OUTPUT);
  // initialize the pushbutton pin as an input:
  pinMode(buttonPin, INPUT);
}
```

```
void loop(){
  // read the state of the pushbutton value:
  buttonState = digitalRead(buttonPin);

  // check if the pushbutton is pressed.
  // if it is, the buttonState is HIGH:
  if (buttonState == HIGH) {
    // turn LED on:
    digitalWrite(ledPin, HIGH);
  }
  else {
    // turn LED off:
    digitalWrite(ledPin, LOW);
  }
}
```

- Step 2. We will see the on board Pin13 LED on and off.

## Play with Codecraft

### Hardware

**Step 1.** Connect a Grove - Button to port D2 of a Base Shield.

**Step 2.** Plug the Base Shield to your Sseeeduino/Arduino.

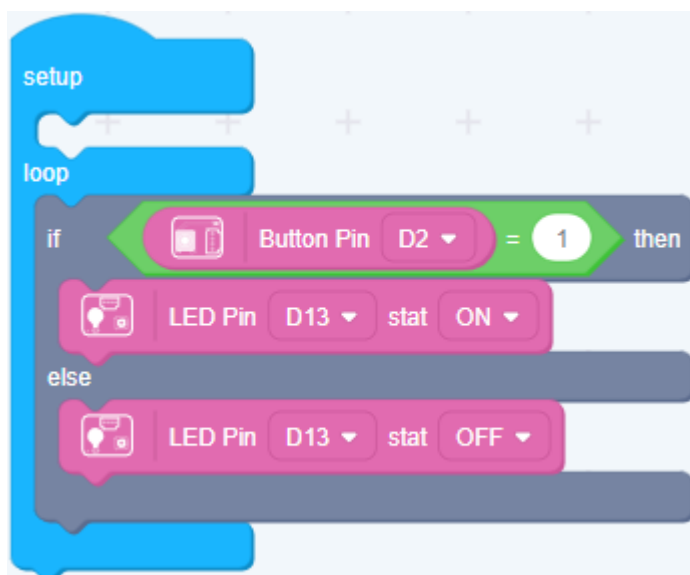
**Step 3.** Link Sseeeduino/Arduino to your PC via an USB cable.

### Software

**Step 1.** Open [Codecraft](#), add Arduino support, and drag a main procedure to working area.

!!!Note If this is your first time using Codecraft, see also [Guide for Codecraft using Arduino](#).

**Step 2.** Drag blocks as picture below or open the cdc file which can be downloaded at the end of this page.



Upload the program to your Arduino/Seeeduino.

!!!Success When the code finishes uploaded, the LED on the Arduino/Seeeduino board will goes on when the Button pressed.

## Play With Raspberry Pi (With Grove Base Hat for Raspberry Pi)

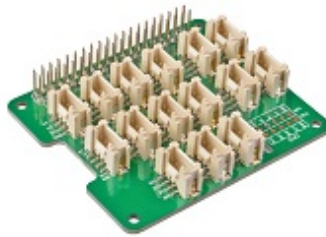
### Hardware

- **Step 1.** Things used in this project:

#### Raspberry pi



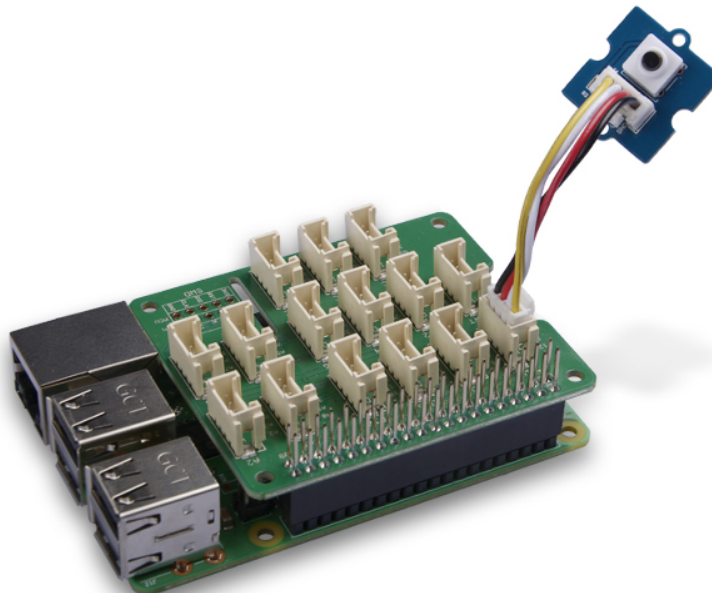
#### Grove Base Hat for RasPi



#### Grove - Button



- **Step 2.** Plug the Grove Base Hat into Raspberry Pi.
- **Step 3.** Connect the Grove - Button to the PWM port(port 12) of the Base Hat.
- **Step 4.** Connect the Raspberry Pi to PC through USB cable.



### Software



- **Step 1.** Follow [Setting Software](#) to configure the development environment.
- **Step 2.** Download the source file by cloning the grove.py library.

```
cd ~  
git clone https://github.com/Seeed-Studio/grove.py
```

- **Step 3.** Execute below command to run the code.

```
cd grove.py/grove  
python grove_button.py 12
```

If you connect the Red LED to the different port of the Base Hat, instead of executing **python grove\_led.py 12**, you should run the following command.

```
python grove_button.py portnumber
```

Following is the grove\_button.py code.

```
import time  
from grove.button import Button  
from grove.factory import Factory  
  
class GroveButton(object):  
    def __init__(self, pin):  
        # High = pressed  
        self.__btn = Factory.getButton("GPIO-HIGH", pin)  
        self.__last_time = time.time()  
        self.__on_press = None  
        self.__on_release = None  
        self.__btn.on_event(self, GroveButton.__handle_event)  
  
    @property  
    def on_press(self):  
        return self.__on_press  
  
    @on_press.setter  
    def on_press(self, callback):  
        if not callable(callback):  
            return  
        self.__on_press = callback  
  
    @property  
    def on_release(self):
```

```

        return self.__on_release

    @on_release.setter
    def on_release(self, callback):
        if not callable(callback):
            return
        self.__on_release = callback

    def __handle_event(self, evt):
        dt, self.__last_time = evt["time"] - self.__last_time, evt["time"]
        # print("event index:{} event:{} pressed:{}".format(evt["index"],
        evt["code"], evt["pressed"]))
        if evt["code"] == Button.EV_LEVEL_CHANGED:
            if evt["pressed"]:
                if callable(self.__on_press):
                    self.__on_press(dt)
            else:
                if callable(self.__on_release):
                    self.__on_release(dt)

Grove = GroveButton

def main():
    from grove.helper import SlotHelper
    sh = SlotHelper(SlotHelper.GPIO)
    pin = sh.argv2pin()

    button = GroveButton(pin)

    def on_press(t):
        print('Button is pressed')
    def on_release(t):
        print("Button is released, pressed for {0} seconds".format(round(t,6)))

    button.on_press = on_press
    button.on_release = on_release

    while True:
        time.sleep(1)

if __name__ == '__main__':
    main()

```

!!!success If everything goes well, you will be able to see the following result:

```

pi@raspberrypi:~/grove.py/grove $ python grove_button.py 12
Hat Name = 'Grove Base Hat RPi'

```

```

Button is pressed
Button is pressed
Button is pressed
Button is pressed
Button is pressed
Button is pressed
Button is released, pressed for 0.002685 seconds
Button is pressed
Button is released, pressed for 0.219019 seconds
Button is pressed
Button is released, pressed for 0.001372 seconds
Button is pressed
Button is pressed
Button is released, pressed for 0.043143 seconds
Button is pressed
Button is released, pressed for 1.083292 seconds
^CTraceback (most recent call last):
  File "grove_button.py", line 103, in <module>
    main()
  File "grove_button.py", line 99, in main
    time.sleep(1)
KeyboardInterrupt

```

You can press ++ctrl+c++ to quit this program.

## Play With Raspberry Pi(with GrovePi\_Plus)

### Hardware

- Step 1. Prepare the below stuffs:

#### Raspberry pi



#### GrovePi\_Plus

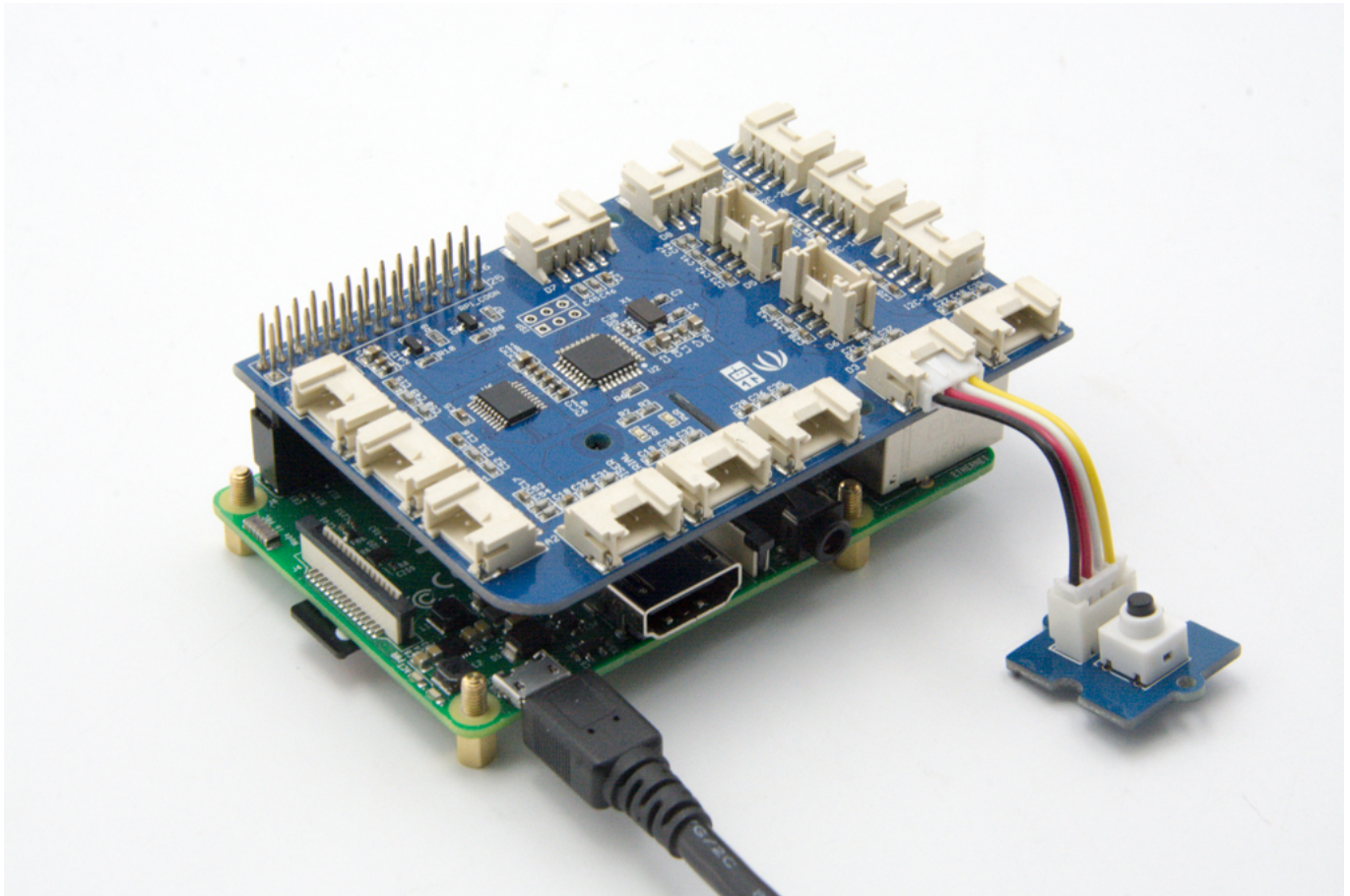


#### Grove - Button



- Step 2. Plug the GrovePi\_Plus into Raspberry.
- Step 3. Connect Grove-Button to D3 port of GrovePi\_Plus.
- Step 4. Connect the Raspberry to PC through USB cable.





## Software

- Step 1. Follow [Setting Software](#) to configure the development environment.
- Step 2. Git clone the Github repository.

```
cd ~  
git clone https://github.com/DexterInd/GrovePi.git
```

- Step 3. Excute below commands.

```
cd ~/GrovePi/Software/Python  
python grove_button.py
```

Here is the grove\_button.py code.

```
import time  
import grovepi  
  
# Connect the Grove Button to digital port D3  
# SIG,NC,VCC,GND  
button = 3
```

```
grovepi.pinMode(button,"INPUT")

while True:
    try:
        print(grovepi.digitalRead(button))
        time.sleep(.5)

    except IOError:
        print ("Error")
```

- Step 4. We will see the button on and off.

```
pi@raspberrypi:~/GrovePi/Software/Python $ python grove_button.py
0
1
1
1
1
0
0
```

## Resources

- **[Eagle&PDF]** [Grove-Button Eagle Files](#)
- **[More Reading]** [Wooden Laser Gun](#)
- **[Codecraft]** [CDC File](#)



Inspired by OVERWATCH, we have made a very cool Wooden Laser Gun toy for fun these day!

The Wooden Laser Gun and the Gun Target are all based on an Arduino board called Seeeduino Lotus. The laser emitter on the Laser Gun is controlled to fire laser pulse to "activate" the Gun Target. And there are 3

light sensors on the Gun Target to detect the laser pulse. It seems very simple right? If you are interested in our project, please make one for yourself or your child! It's worth to spend one day DIY it as a Xmas present.

## Tech Support

Please submit any technical issue into our [forum](#) or drop mail to [techsupport@seeed.cc](mailto:techsupport@seeed.cc).