# Introduction

mBlock is a graphical programming environment that is specially designed for beginners to easily program Arduino projects.

### **Getting started**

mBlock

Download mBlock from http://www.mblock.cc

Arduino kit

# **Blinking LED**

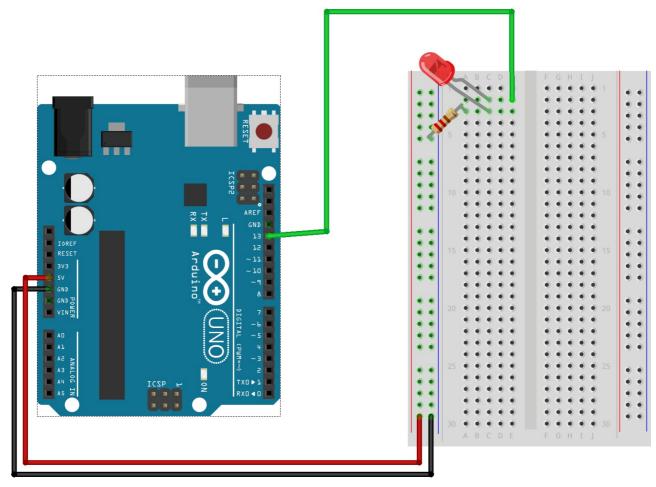
What is an LED? What is the end result of this experiment?

### **Required parts**

#### **Component Quantity**

LED 1
Resistor 1
Jumper wires 3

### **Circuit Diagram**



fritzing

mBlock Code

```
forever

set digital pin 9 output as HIGHY

wait 1 secs

set digital pin 9 output as LOWY

wait 1 secs
```

# **Potentiometer**

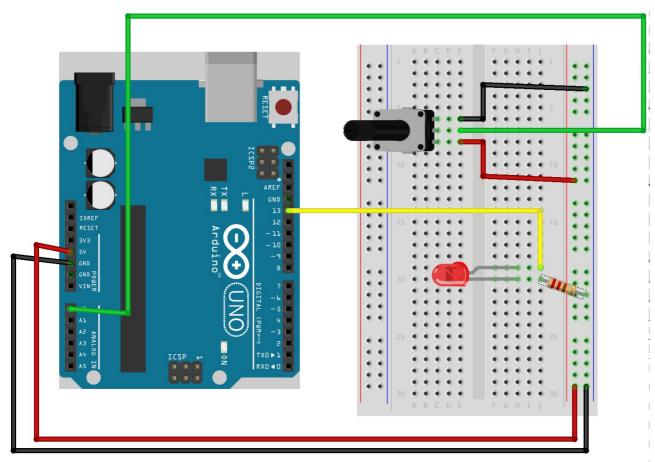
What is a Potentiometer? What is the end result of this experiment?

### **Required parts**

#### **Components Quantity**

Potentiometer 1 LED 1 Resistor 1 Jumper wires 1

### **Circuit Diagram**



fritzing

### mBlock Code

```
Pen Operators
Robots

Make a Variable

sensorValue
```

```
Arduino Program

forever

set sensorValue vo read analog pin (A) ①

set digital pin 13 output as HIGHV

wait sensorValue secs

set digital pin 13 output as LOWV

wait sensorValue secs
```

#### **RGB LED**

What is an RGB LED? What is hte end result of this experiment?

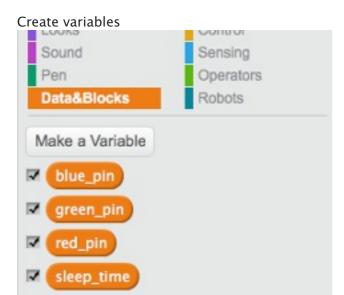
#### Required parts

#### **Component Quantity**

RGB LED 1
Resistor 3
Jumper wires 6

#### **Circuit Diagram**

#### mBlock Code



#### Assign variables

```
Arduino Program

set sleep_time ▼ to 1

set red_pin ▼ to 9

set green_pin ▼ to 10

set blue_pin ▼ to 11
```

```
Turn all the LEDs off
set green_pin ▼ to 10
set blue_pin ▼ to 11
forever
   set digital pin red pin output as LOW
   set digital pin green_pin output as LOW*
   set digital pin blue pin output as LOW*
  wait sleep_time ) secs
Turn on red
set digital pin red_pin output as (HIGH*
set digital pin green_pin output as LOWY
set digital pin blue pin output as LOWY
wait sleep_time | secs
Turn on green
set digital pin red pin output as LOW
set digital pin green_pin output as (HIGHY
set digital pin blue_pin output as LOW*
wait sleep_time | secs
Turn on blue
set digital pin red_pin output as LOW
set digital pin green pin output as LOWY
set digital pin blue pin output as (HIGHY
wait sleep time | secs
Red and Green
Red and Blue
```

Green and Blue