# 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**

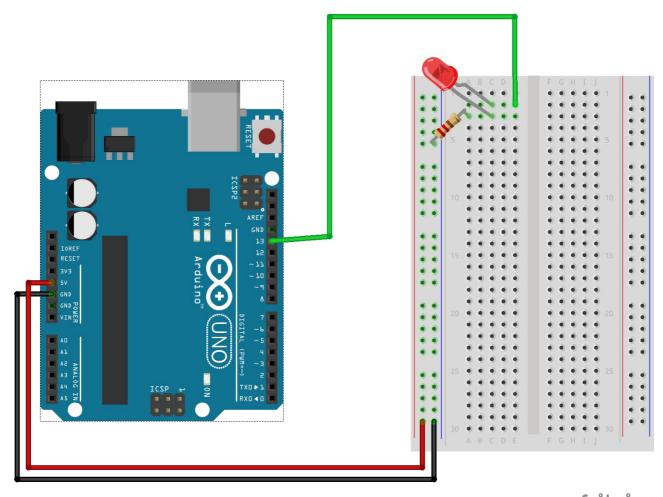
What is an LED? What is the end result of this experiment?

### **Required parts**

#### **Component Quantity**

LED 1
Resistor 1
Jumper wires 3

### **Circuit Diagram**



fritzing

#### mBlock Code

```
Arduino Program

forever

set digital pin 9 output as HIGH*

wait 1 secs

set digital pin 9 output as LOW*

wait 1 secs
```

# **Potentiometer**

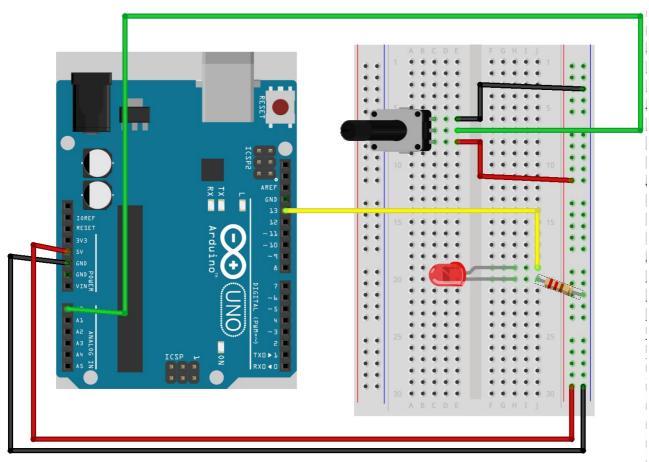
What is a Potentiometer? What is the end result of this experiment?

### **Required parts**

#### **Components Quantity**

Potentiometer 1 LED 1 Resistor 1 Jumper wires 7

### **Circuit Diagram**



fritzing

#### mBlock Code

```
Pen Operators
Robots

Make a Variable

sensorValue
```

```
Arduino Program

forever

set sensorValue to read analog pin (A) ①

set digital pin 13 output as HIGHT

wait sensorValue secs

set digital pin 13 output as LOWT

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
      sleep_time ▼ to 1
       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 (HIGHY
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 LOW set digital pin blue_pin output as HIGH wait sleep_time secs
```

**Red and Green** 

Red and Blue

Green and Blue