

Here is the **flow (series path)** for the **LED connection** with an Arduino Uno.

Go to <https://wokwi.com/>

And practice

□ LED Connection Flow

Pin 13 → 220Ω Resistor → LED Anode (Long Leg) → LED Cathode (Short Leg) → GND

Step-by-Step Wiring

- 1 □ Pin 13 (Arduino) → One side of 220Ω resistor
- 2 □ Other side of 220Ω resistor → LED Anode (long leg)
- 3 □ LED Cathode (short leg) → GND (Arduino)

Simple Current Flow

```
Pin 13
|
[220Ω Resistor]
|
(LED Anode +)
|
[ LED ]
|
(LED Cathode -)
|
GND
```

What Happens

- Pin 13 = HIGH (5V) → Current flows → LED turns ON □
- Pin 13 = LOW (0V) → No current → LED turns OFF

The 220Ω resistor protects the LED from too much current.

Here is the **series-style connection order** for the push button circuit with an Arduino Uno.

Push Button Connection (Series Path)

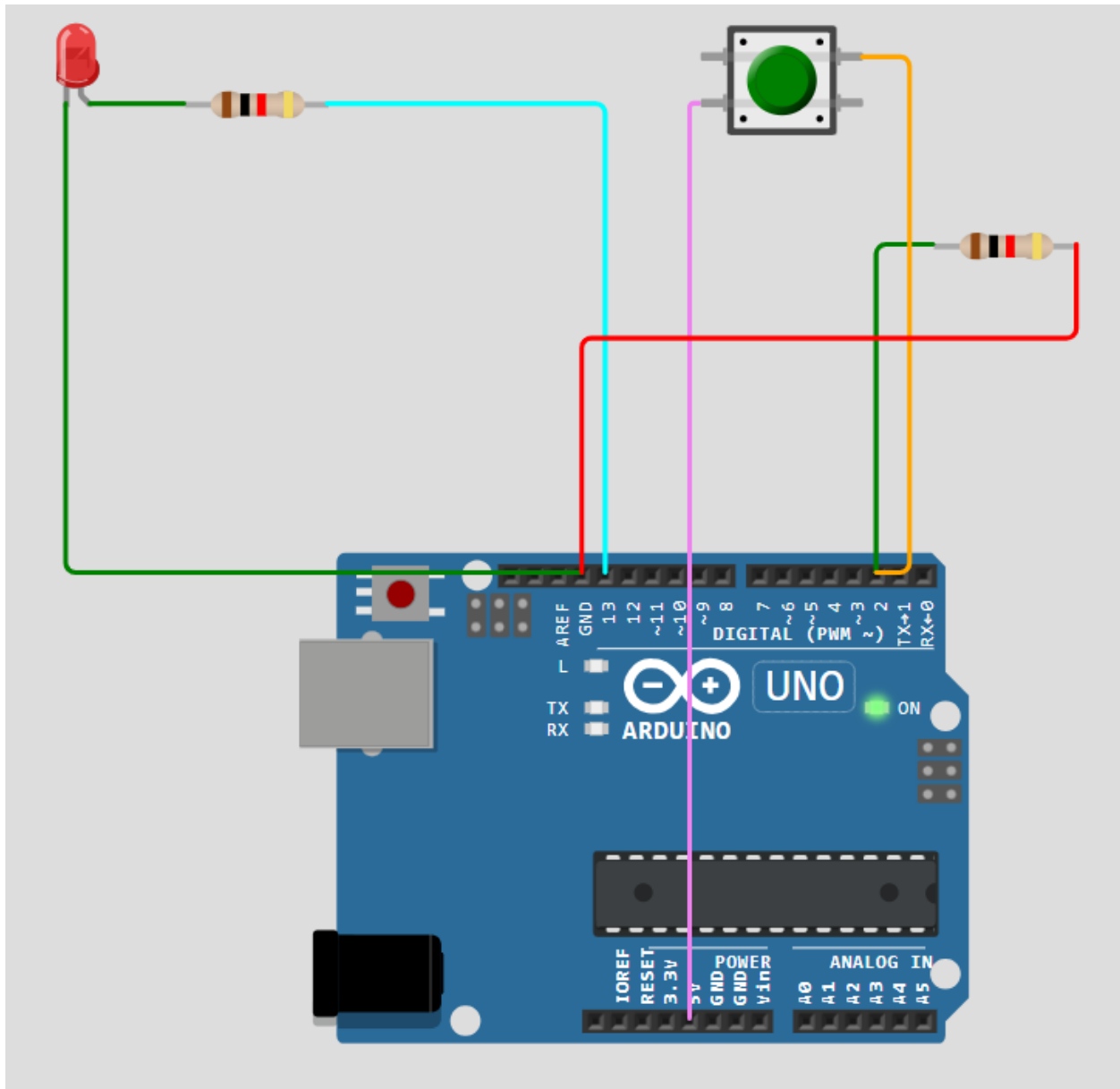
5V → Push Button → Pin 2 → 10kΩ Resistor → GND

Step-by-Step Wiring

- 1 **5V pin (Arduino) → One leg of Push Button**
- 2 **Other leg of Push Button → Pin 2 on Arduino**
- 3 **Pin 2 → One side of 10kΩ resistor**
- 4 **Other side of 10kΩ resistor → GND on Arduino**

Simple Flow

```
5V
|
[Push Button]
|
Pin 2 (Arduino Input)
|
[10kΩ Resistor]
|
GND
```



What Happens

- **Button NOT pressed:**
Pin 2 is connected to **GND** through the **10kΩ** resistor → **LOW**
- **Button pressed:**
Pin 2 gets **5V** → **HIGH**

Code for this Circuit sketch.ino :-

```
int buttonPin = 2;
int ledPin = 13;
int buttonState = 0;

void setup() {
  pinMode(buttonPin, INPUT);
  pinMode(ledPin, OUTPUT);
}

void loop() {
  buttonState = digitalRead(buttonPin);

  if (buttonState == HIGH) {
    digitalWrite(ledPin, HIGH); // LED ON
  }
  else {
    digitalWrite(ledPin, LOW); // LED OFF
  }
}
```

<https://wokwi.com/projects/458376814018379777>