tangible

Digital OUTPUT

Tangible Matrix

Context	DIGITAL	ANALOG
INPUTS	BUTTON	POTENTIOMETER photoCell
OUTPUTS	LED BLINK	LED FADE

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Context	DIGITAL	ANALOG
INPUTS	BUTTON	POTENTIOMETER photoCell
OUTPUTS	**LED BLINK**	LED FADE

INPUT / OUTPUT

When we discuss **INPUT** and **OUTPUT**
we mean relative to **ARDUINO**.

INPUT

Electric **SIGNAL** that moves **IN** **to** the **Arduino**

OUTPUT

Electric **SIGNAL** that moves **OUT** **of** the **Arduino**

DIGITAL

Refers to **SIGNALS**, **CIRCUITs** or **LOGICAL** systems that have

ONLY TWO STATES

DIGITAL OUTPUT

An **ON/OFF** SIGNAL that moves **OUT** of the Arduino

The CODE

Digital **Output** (**Blink** an LED)

digitalWrite(*pin, state*);

state = 0, 1 (LOW, HIGH)

REFERENCE - Card in your kit.

Digital Output

CONTEXT

	Digital	Analog
Input		
Output	■	

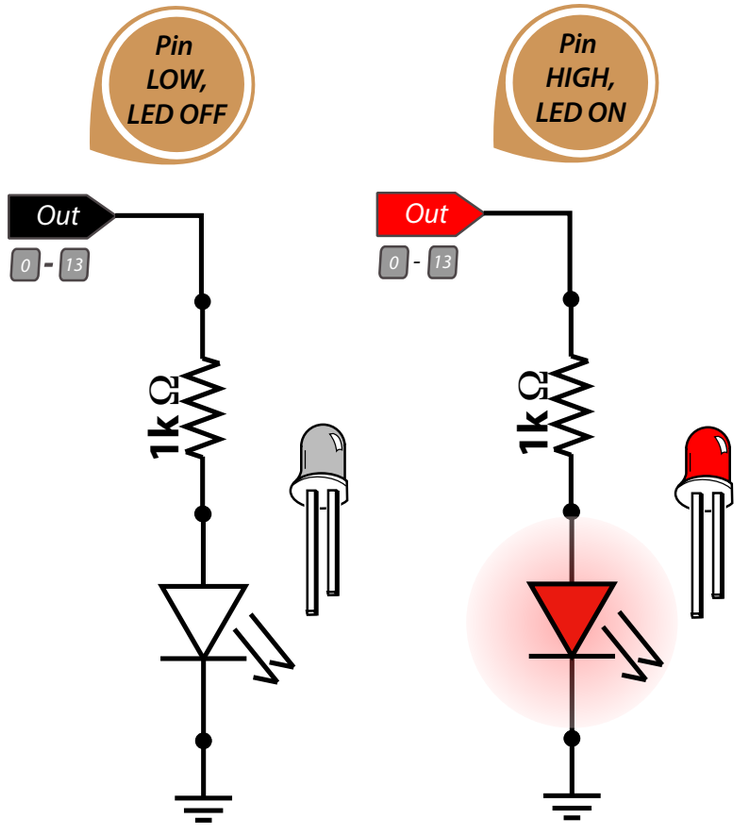
COMMAND

digitalWrite (*pin*, *state*);

pin = 0-13

state = HIGH (1, 5V) , LOW (0, GND)

CIRCUIT

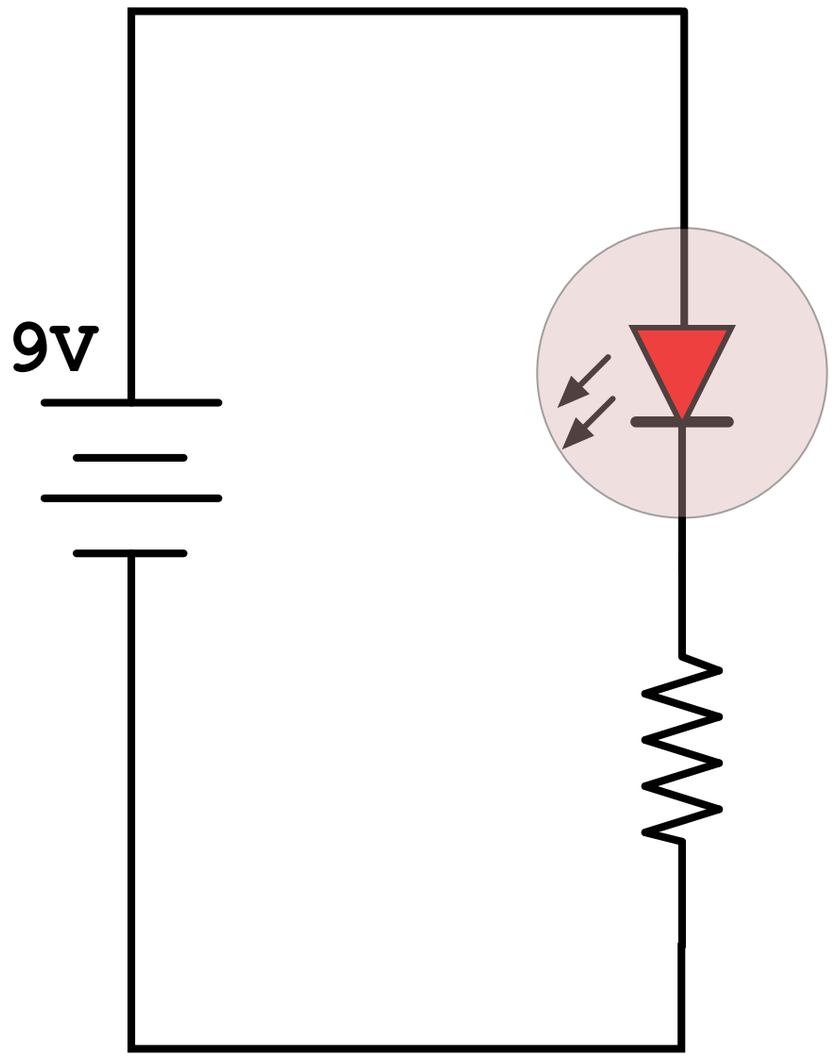


CODE

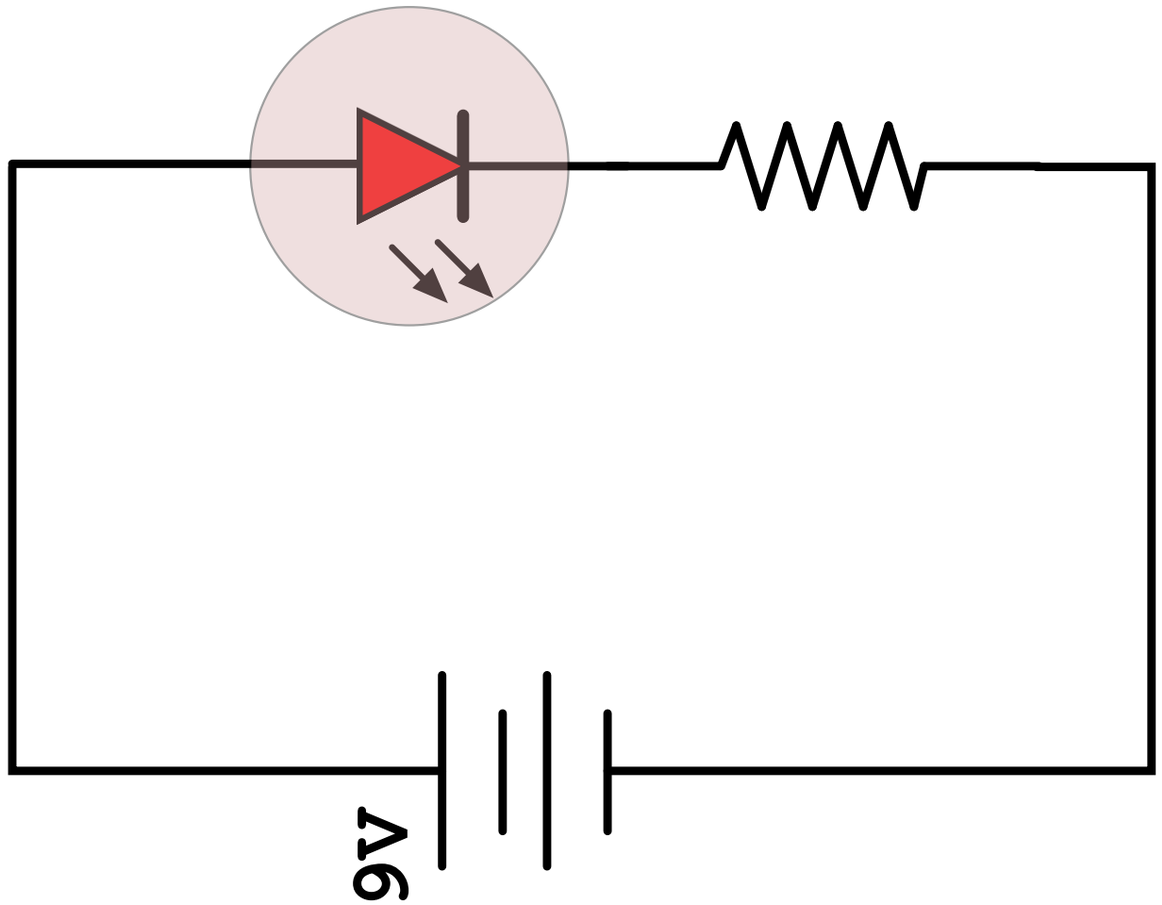
```
int ledPIN = 13;


void setup() {

  pinMode( ledPIN, OUTPUT );

}

void loop() {

  digitalWrite( ledPIN, 1 );
  delay(1000);

  digitalWrite( ledPIN, 0 );
  delay(1000);

}
```

The CIRCUIT

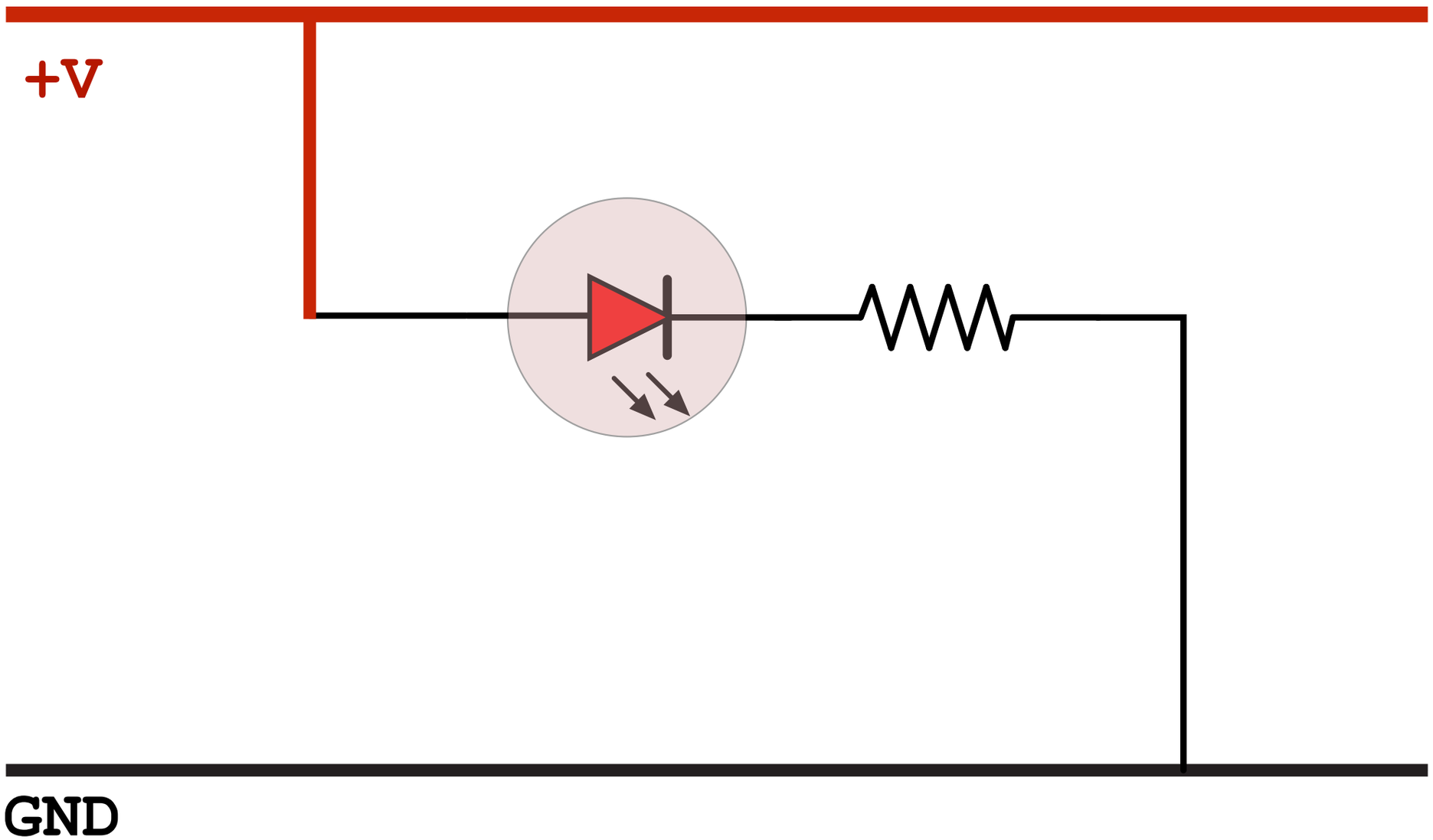
Here is the first circuit we built on a breadboard.



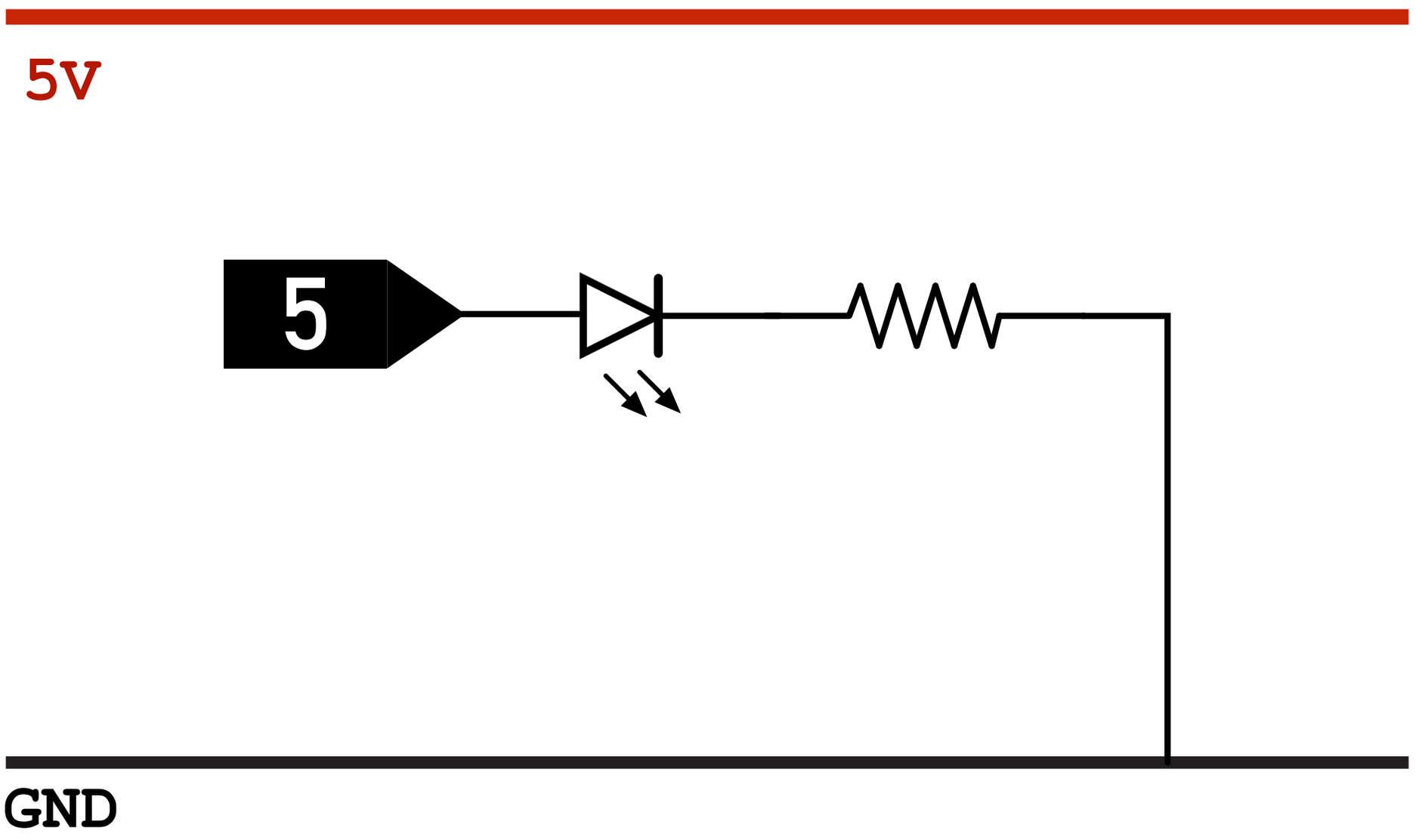
Let’s rotate it on its side.



Let’s rotate it on its side.

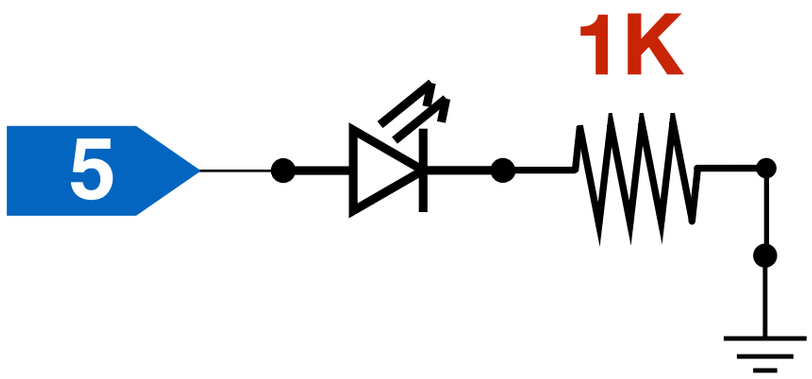


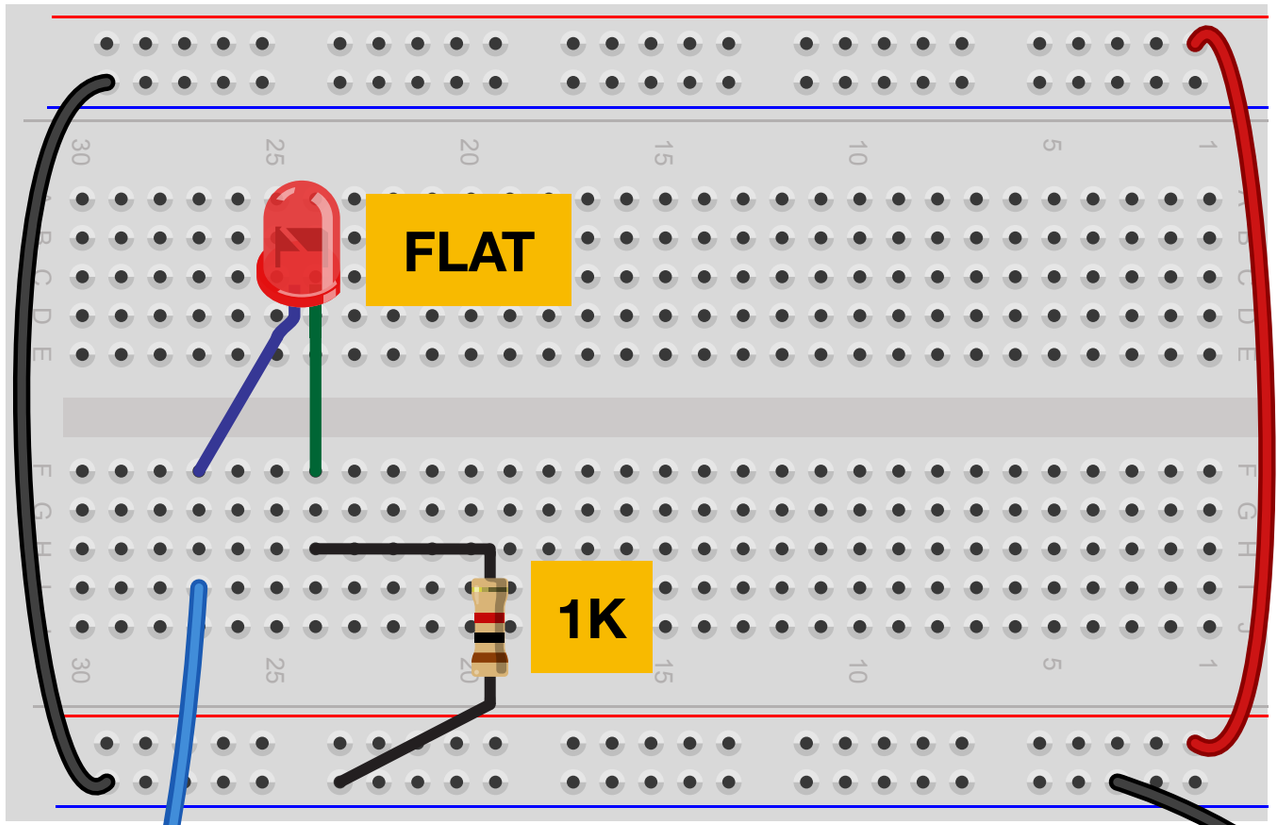
Then, remove the battery and connect to Pin 5 on your Arduino.



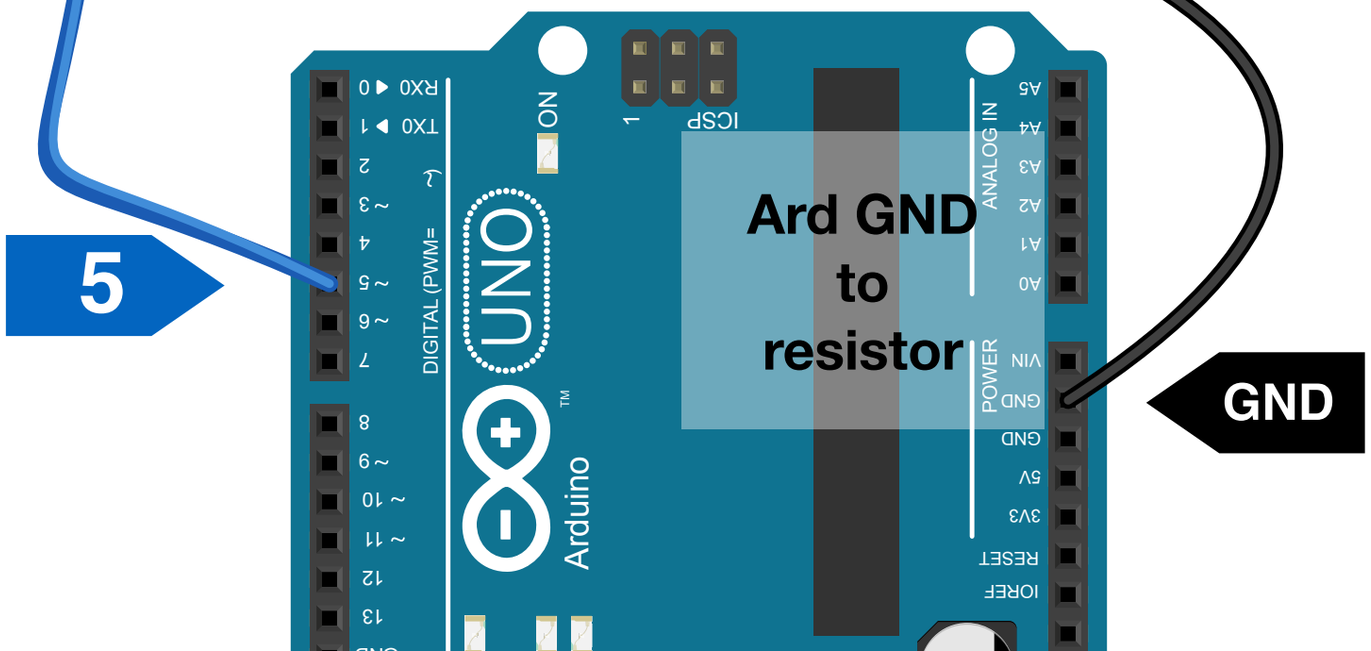
Let’s build.

(i turned it on its side)



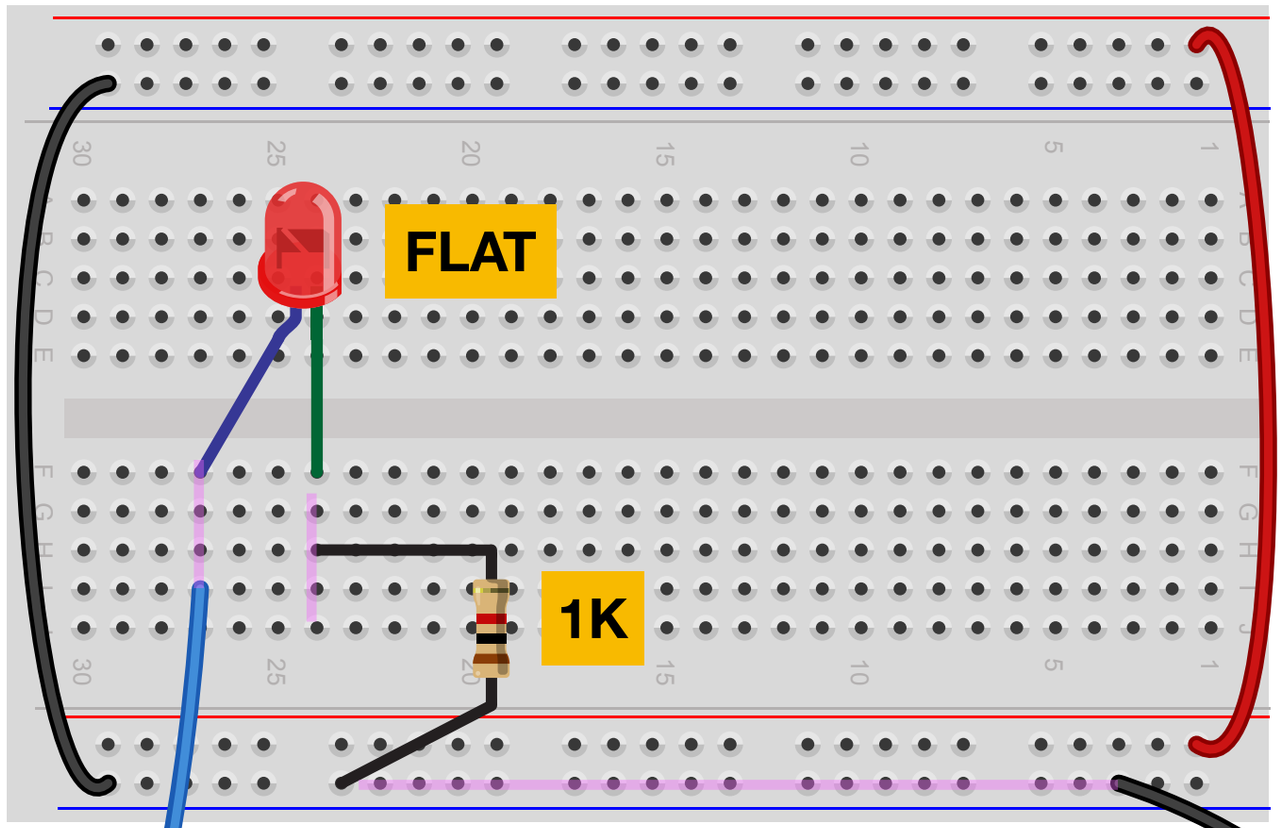


Connect a wire from:
ARD Pin 5 to LED

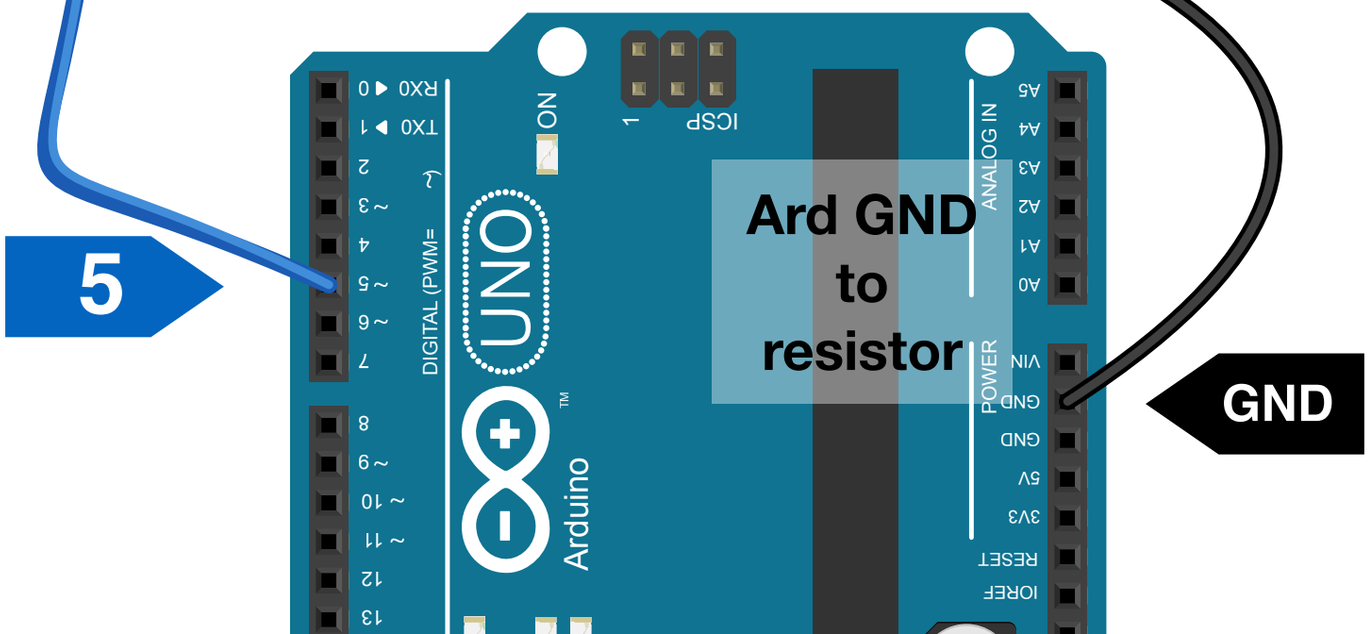


Trace the circuit. See the loop.

Pale Pink lines are internal BB connections.

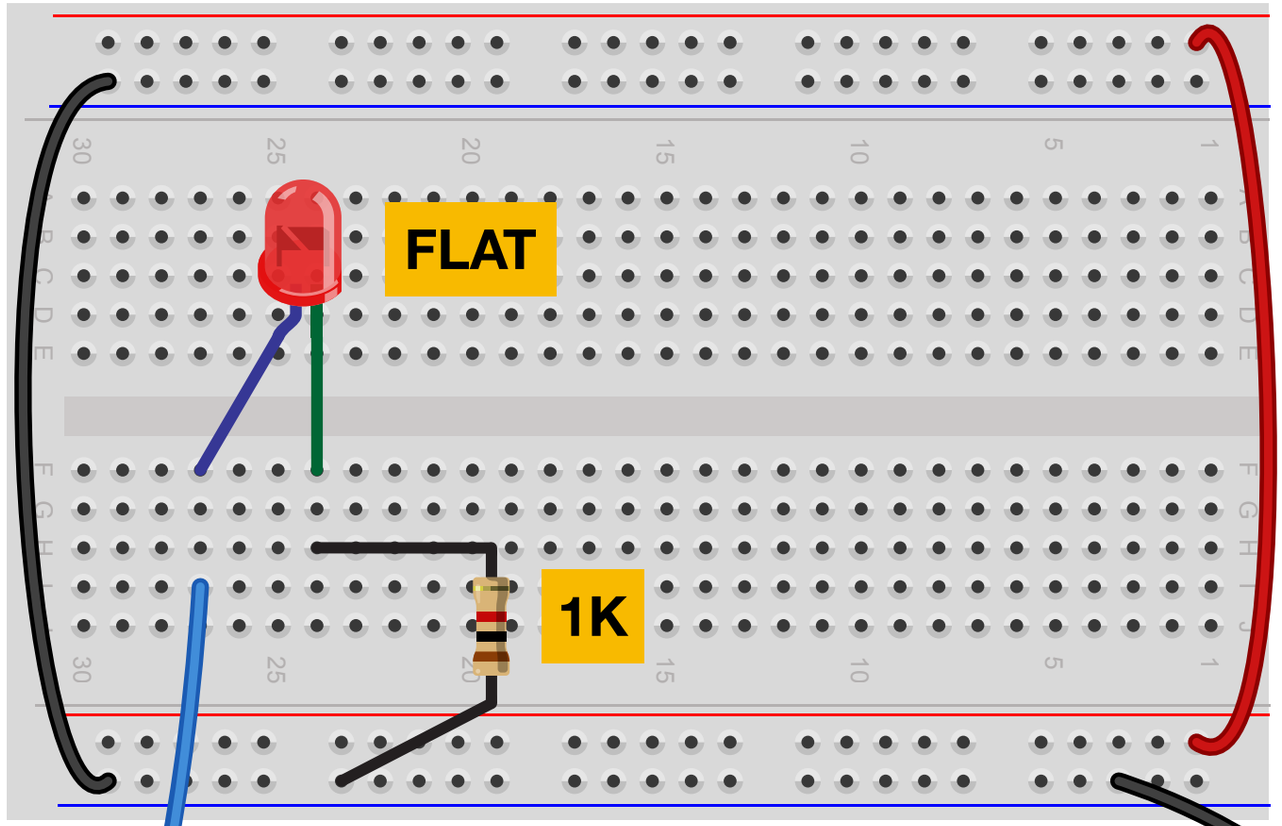


Connect a wire from:
ARD Pin 5 to LED



We connect to an Arduino pin, not the positive battery terminal.

NOTE:
LED round side is connected to Arduino pin.



Connect a wire from:
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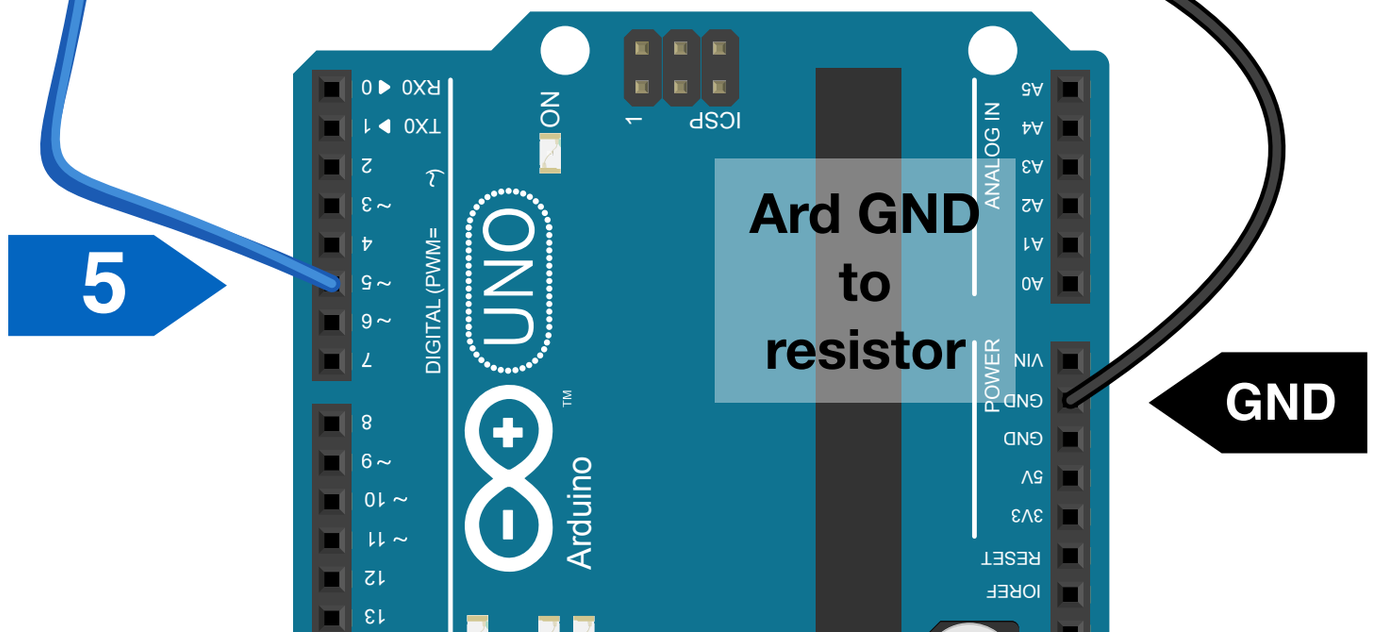
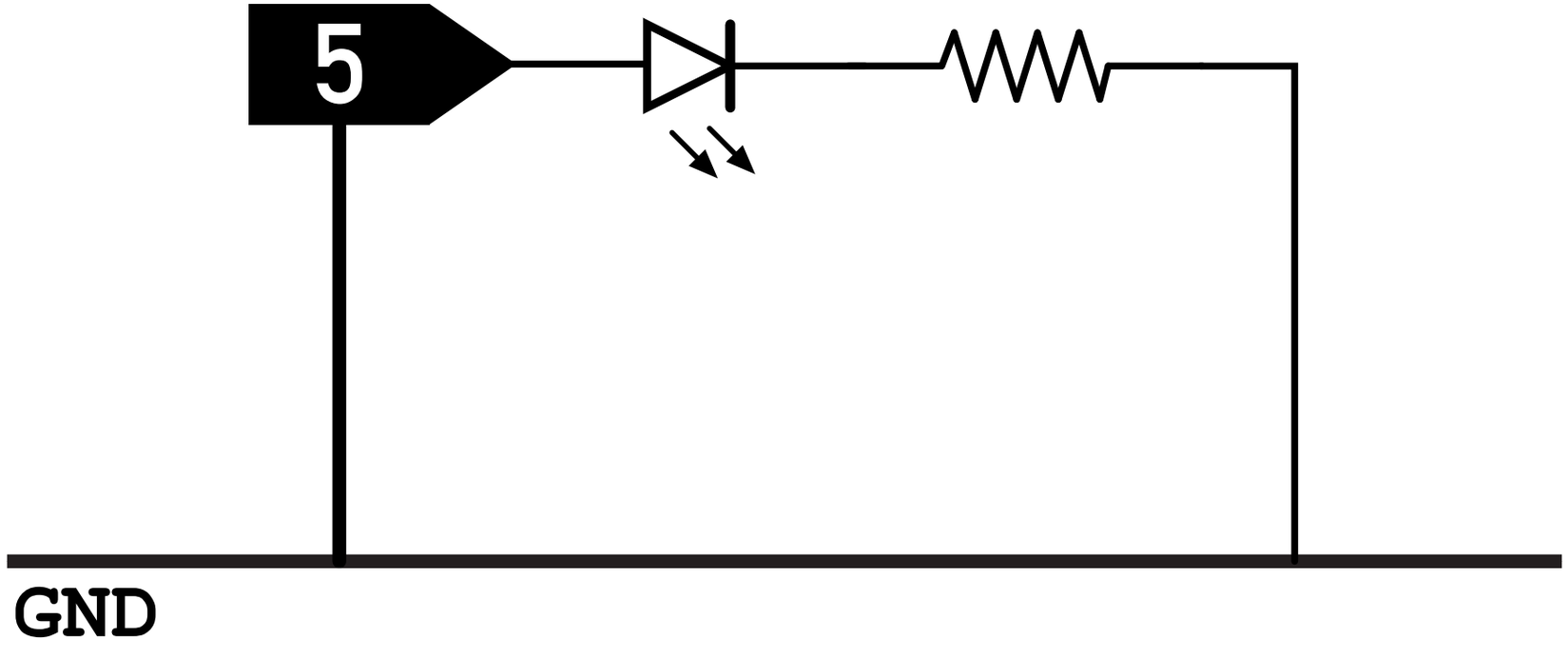


Add CODE

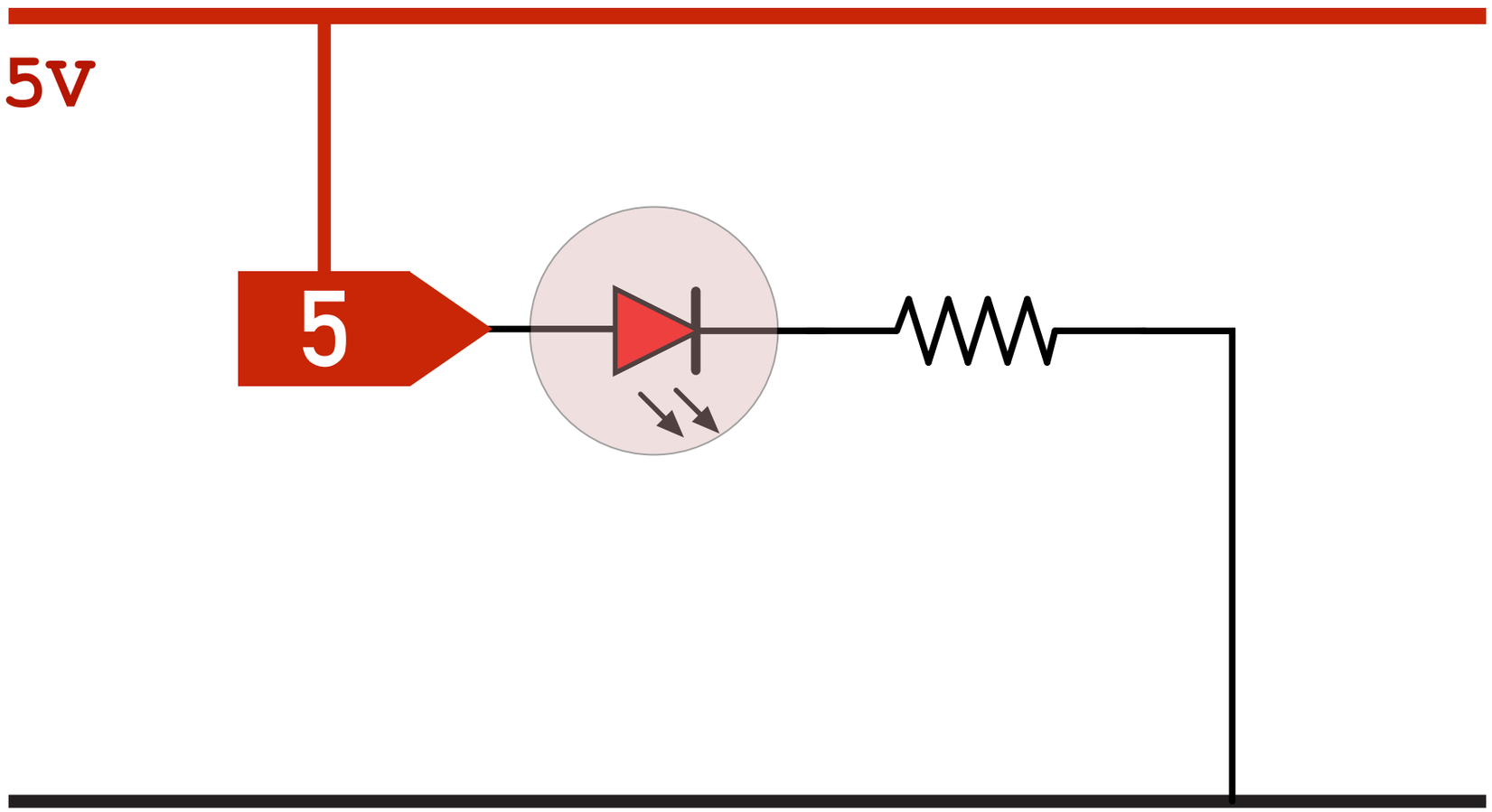
What’s Going ON ?

5V




```
digitalWrite(5, LOW);
```

What's Going ON ?

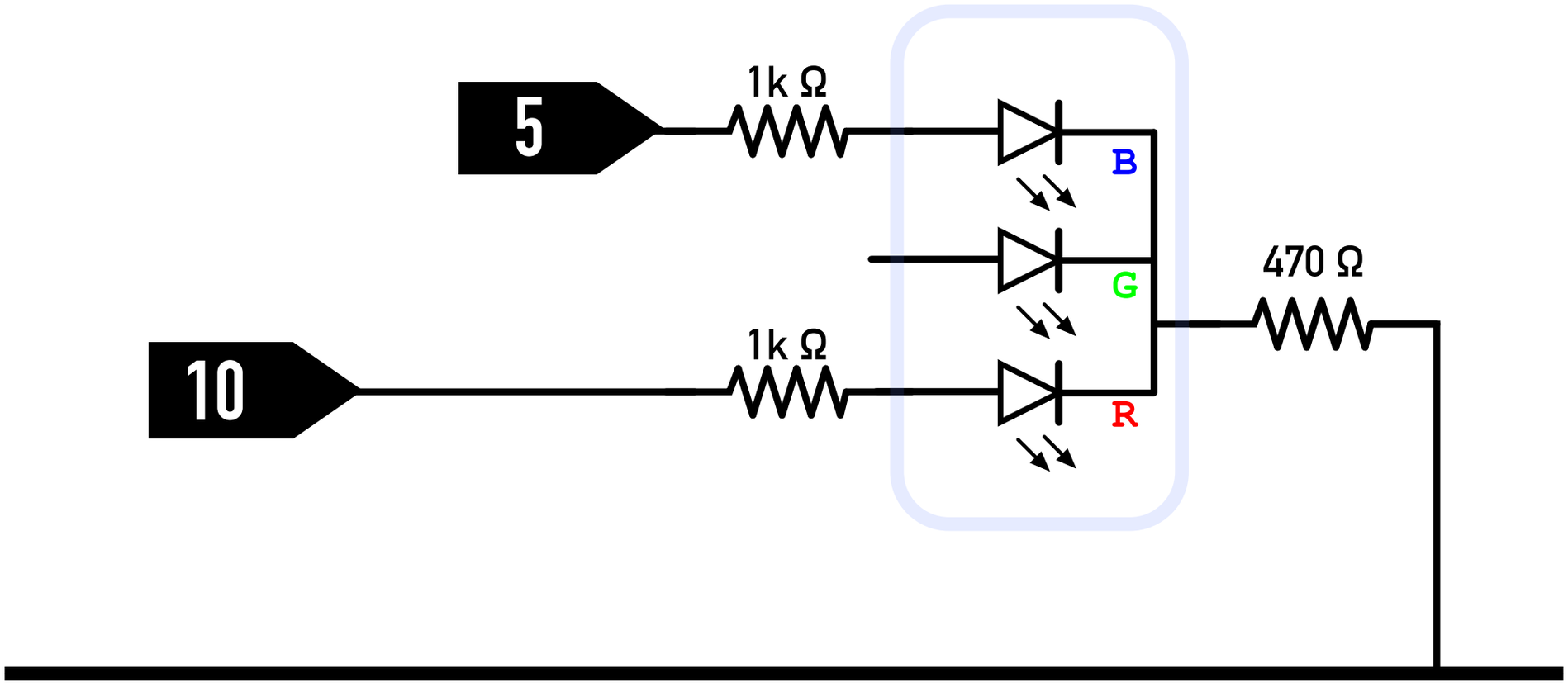



```
digitalWrite(5, HIGH);
```

RGB Variation

Can we do that with RGB?

Build it – Getting connected.



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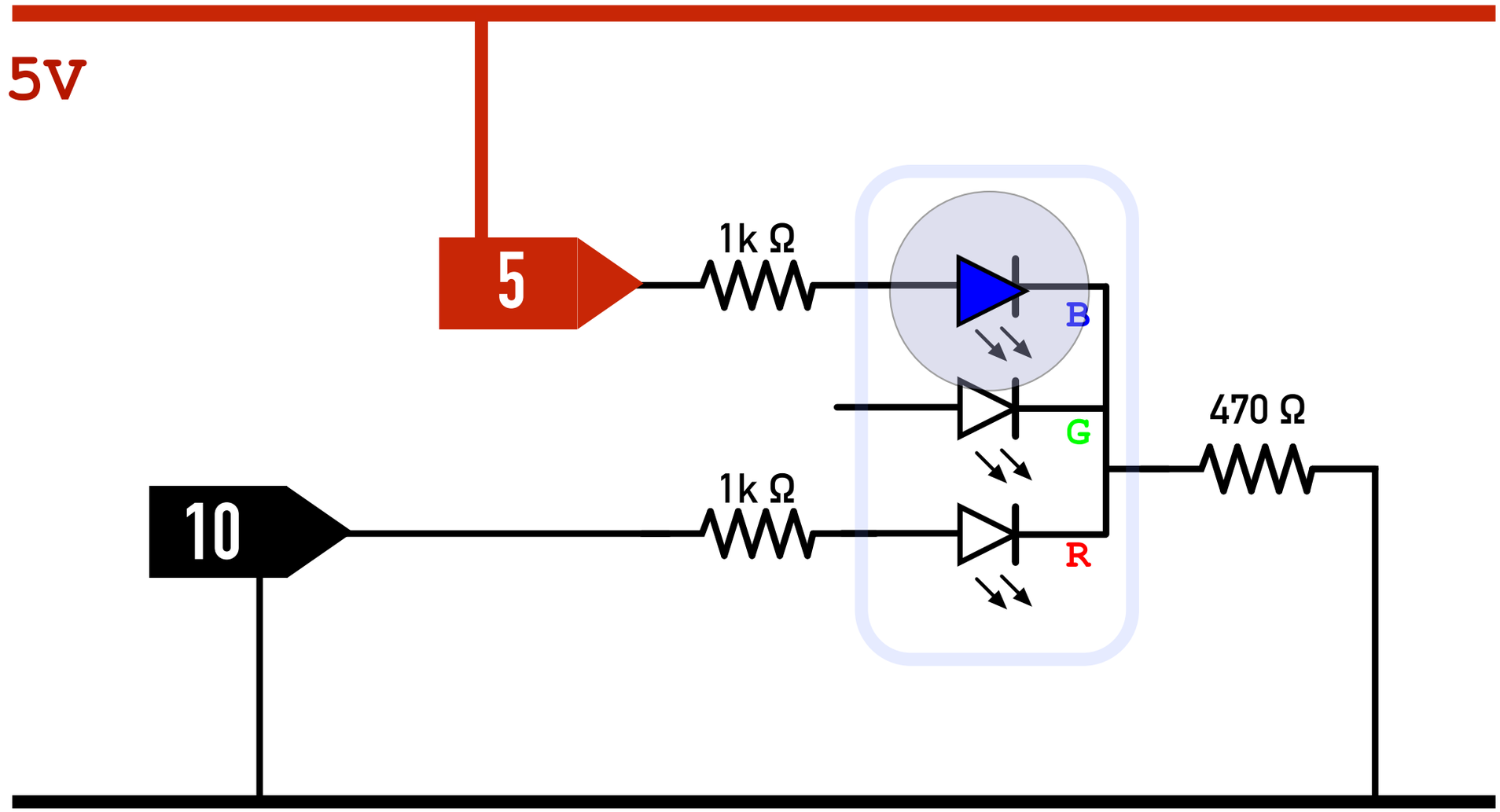
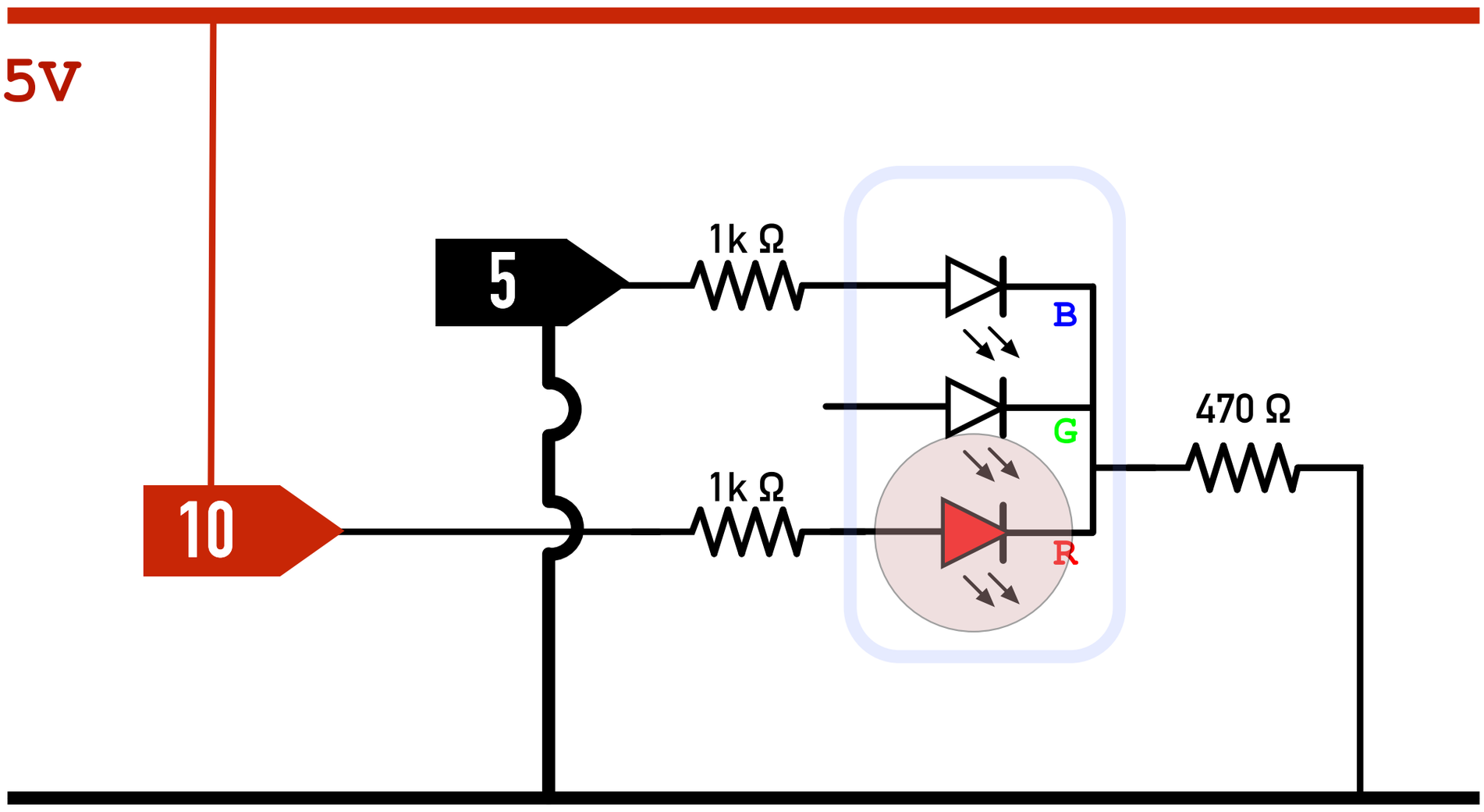



```
digitalWrite(5, HIGH);
digitalWrite(10, LOW);
```

Can we do that with RGB?




```
digitalWrite(5, LOW);
digitalWrite(10, HIGH);
```