

Digital Input & Output

Name: _____

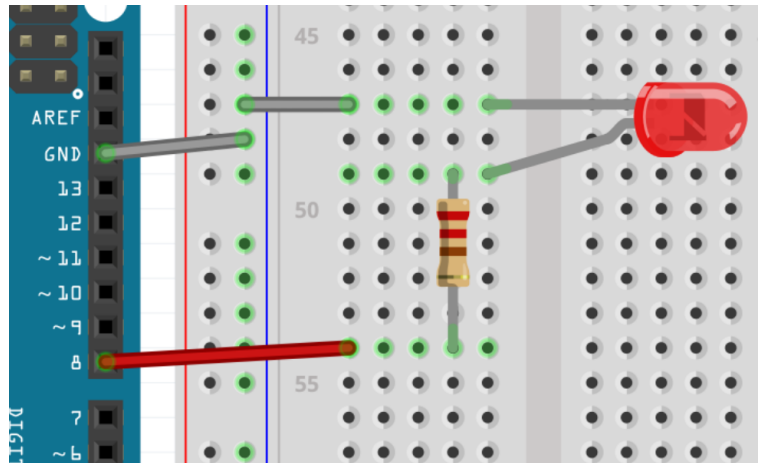
Digital signals are either 0 or 1, the Arduino Uno has a total of 14 digital pins.

The first example demonstrates how to blink a LED.

The second example demonstrates how to read a button's state.

What You'll Need:

- 1 x Arduino Uno board
- 1 x Breadboard
- 1 x LED
- 1 x Button
- Jumper wires



This code would blink a LED on Pin 8

```
1 void setup() {  
2   // Configure Pin 8 as output pin  
3   pinMode(8, OUTPUT);  
4 }  
5  
6 void loop() {  
7   // Set LED on Pin 8 to ON  
8   digitalWrite(8, 1);  
9   delay(500);  
10  
11   // Set LED on Pin 8 to OFF  
12   digitalWrite(8, 0);  
13   delay(500);  
14 }
```

Challenge: Blink 3 LEDs one at a time. Imagine traffic lights running 2 seconds Green, 1 second Yellow, and 2 seconds Red.

Each LED must have a resistor.

Read the Button State

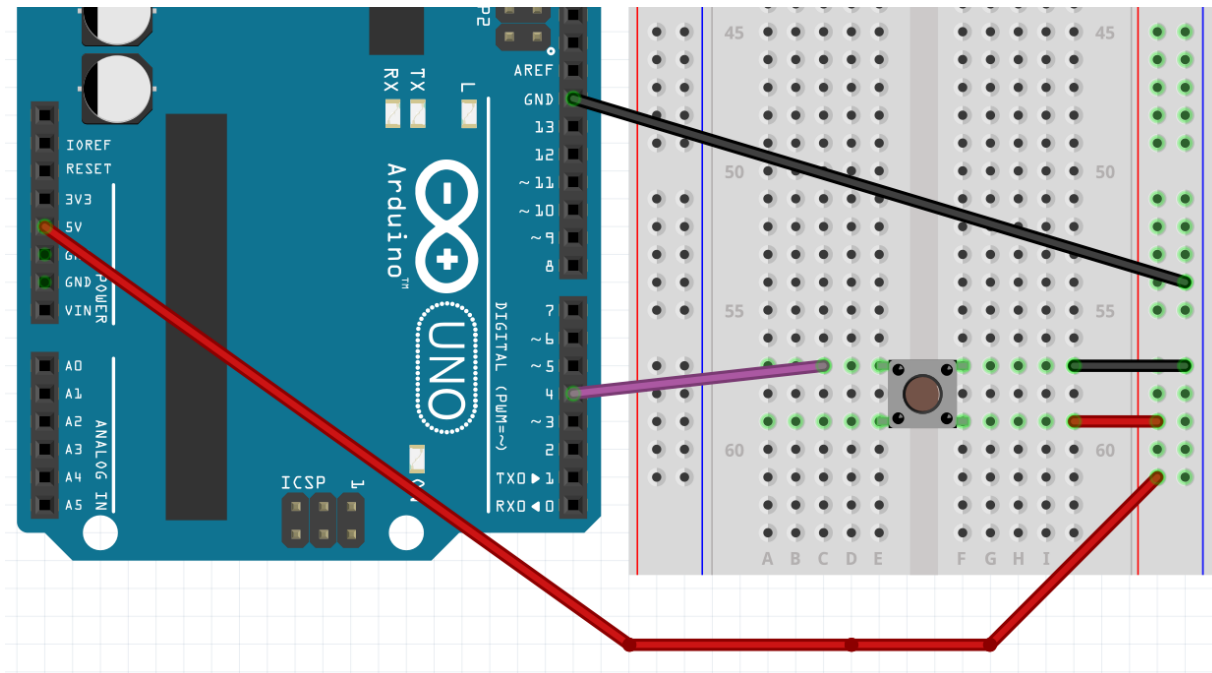


Figure 1: Pin 4 Button Circuit

In this example, we print the value read on **Pin 4** to the Serial Monitor

```
1 void setup() {  
2   // Configure Pin 4 as an Input for button  
3   pinMode(4, INPUT);  
4  
5   // Configure Pin 8 as an Output for LED  
6   pinMode(8, OUTPUT);  
7 }  
8  
9 void loop() {  
10  // If button is pressed  
11  if (digitalRead(4)) {  
12    // Turn on LED  
13    digitalWrite(8, 1);  
14  } else {  
15    // Turn on LED  
16    digitalWrite(8, 1);  
17  }  
18 }
```

Open the **Serial Monitor** with **Ctrl + Shift + M**

Challenge: Make a counter with a button.
Each time the button is pressed, add 1 to the count.
Print the count in the serial monitor.
Hint; Create a `count` variable