buzzer with an Arduino Uno

**Wiring the Buzzer**

1. **Active Buzzer:** An active buzzer has a built-in oscillator, so it can generate sound when power is applied.
   * Connect the positive terminal (long pin) of the active buzzer to **digital pin 8** on the Arduino.
   * Connect the negative terminal (short pin) to the **GND** (ground) pin on the Arduino.
2. **Passive Buzzer:** A passive buzzer requires a PWM signal to generate sound.
   * Connect one pin to **digital pin 9** on the Arduino.
   * Connect the other pin to **GND**.

Code for Active Buzzer:

// Define pin for the buzzer

const int buzzerPin = 8; // Connect to the active buzzer

void setup() {

pinMode(buzzerPin, OUTPUT); // Set the buzzer pin as an output

}

void loop() {

digitalWrite(buzzerPin, HIGH); // Turn the buzzer on

delay(1000); // Wait for 1 second

digitalWrite(buzzerPin, LOW); // Turn the buzzer off

delay(1000); // Wait for 1 second

}

Code for Passive Buzzer:

// Define pin for the buzzer

const int buzzerPin = 9; // Connect to the passive buzzer

void setup() {

pinMode(buzzerPin, OUTPUT); // Set the buzzer pin as an output

}

void loop() {

// Play a tone

tone(buzzerPin, 1000); // Play 1kHz tone

delay(1000); // Wait for 1 second

noTone(buzzerPin); // Stop the tone

delay(1000); // Wait for 1 second

}

**Uploading the Code**

1. Open the Arduino IDE on your computer.
2. Copy and paste the desired code (for active or passive buzzer) into the IDE.
3. Select the correct board and port from the **Tools** menu.
4. Click the **Upload** button (right arrow icon) to upload the code to the Arduino.

**Testing**

* Once the code is uploaded, the buzzer should start sounding according to the code you uploaded:
  + The active buzzer will beep on and off every second.
  + The passive buzzer will play a tone for one second, then pause for one second.