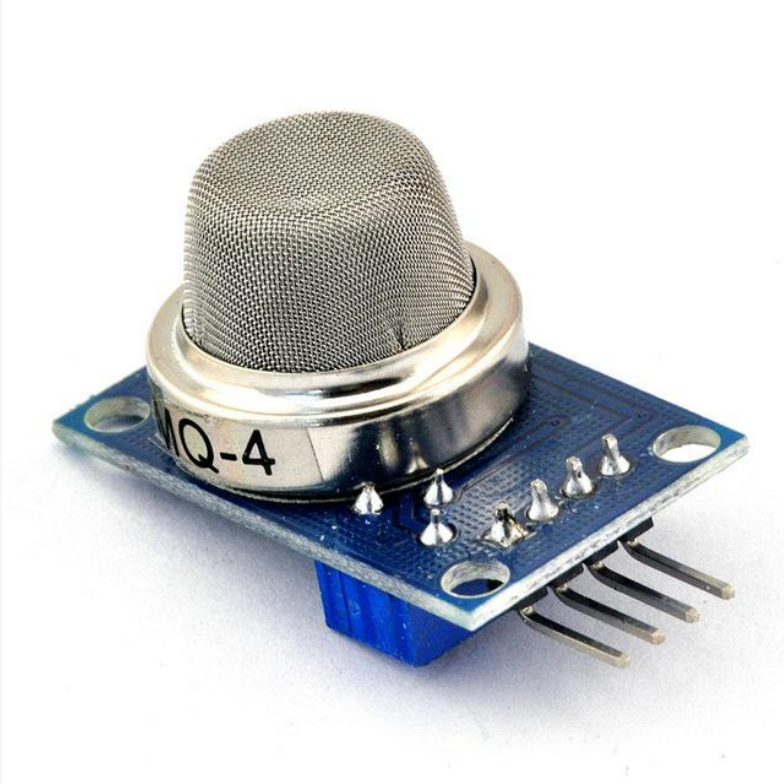
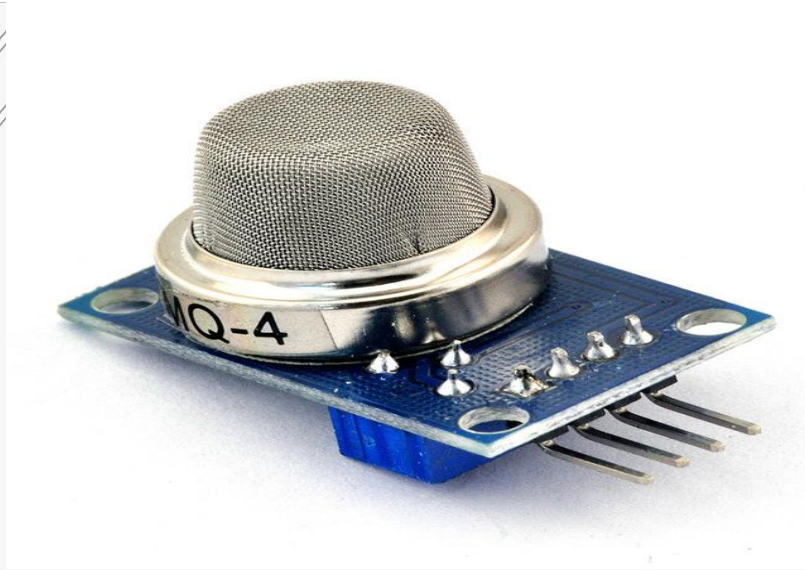
Interfacing of MQ-4 [Methane Sensor]



ABLEDUCATION™
ACTIVITY BASED LEARNING



MQ-4 [Methane Sensor]

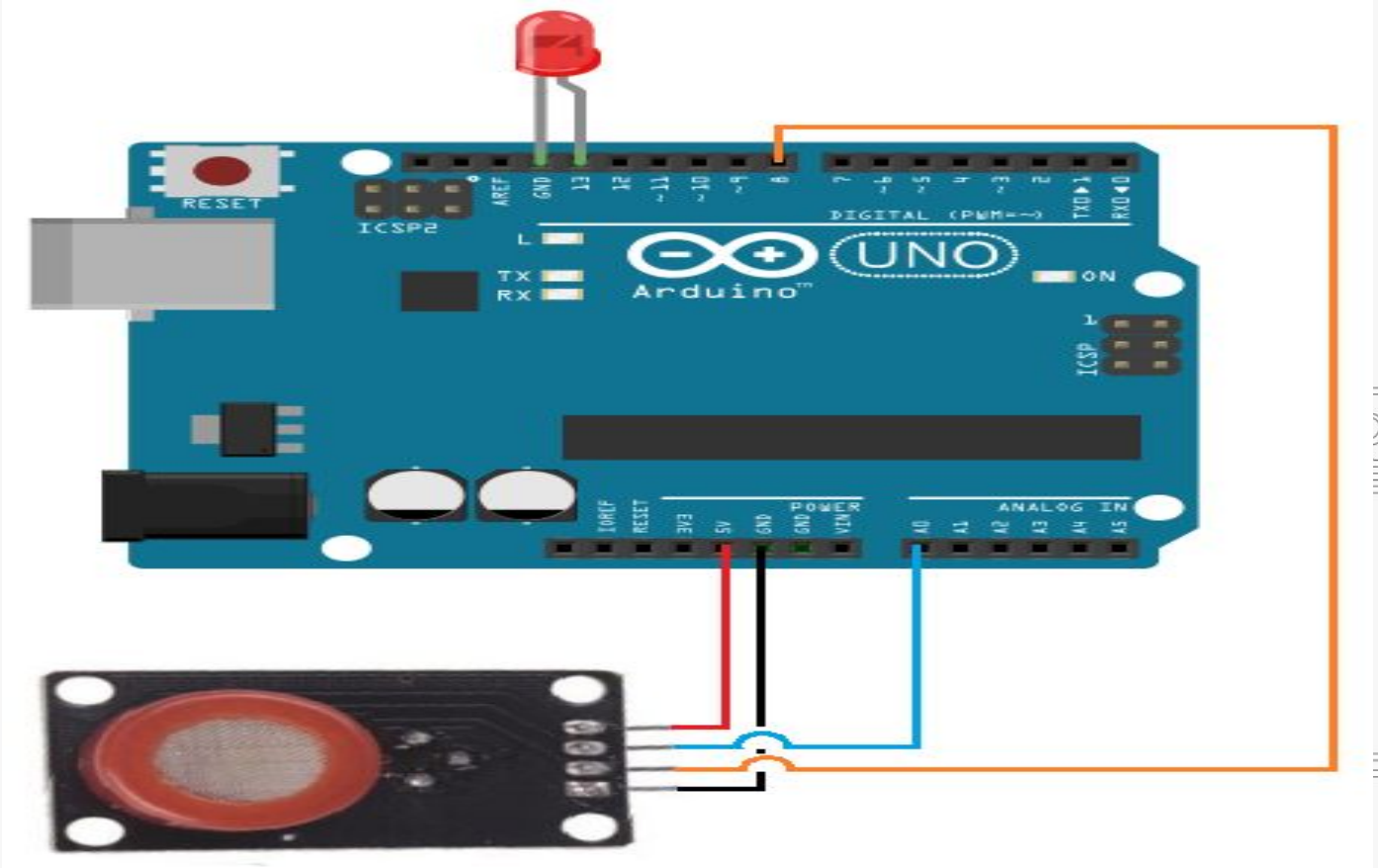
- The MQ4 is used in gas leakage detecting equipment in consumer and industry markets, this sensor is suitable for detecting CH4, Natural gas, LNG, avoid exposure to alcohol, cooking fumes, and cigarette smoke. The sensitivity can be adjusted by the potentiometer.
- As a natural gas sensor, the MQ-4 Natural Gas Sensor is a fast and reliable sensor with a high sensitivity to natural gas and methane, also good sensitivity to propane and butane.

Components Required

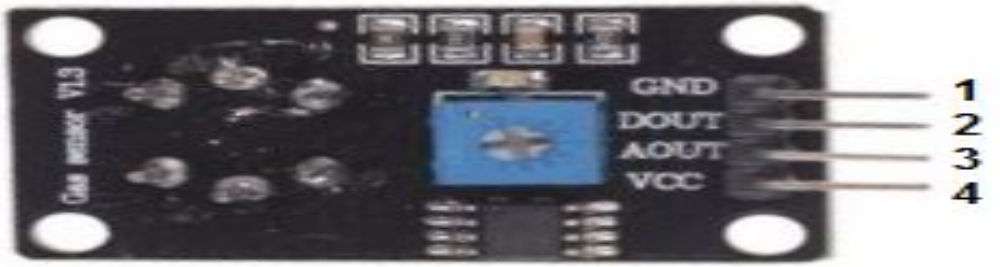
- Arduino UNO
- MQ-4 Methane Sensor
- LED
- Jumper Wires

ABLEDUCATION™
ACTIVITY BASED LEARNING

Connection Diagram



ABLEDUCATION™
ACTIVITY BASED LEARNING



1 = GND
2 = DOUT
3 = AOUT
4 = Vcc

(bottom view)

Connections

- Connect **Vcc** of MQ-4 with +5 V of Arduino UNO.
- Connect **DOUT** of MQ-4 with pin 8 of Arduino UNO.
- Connect **AOUT** of MQ-4 with Ao of Arduino UNO.
- Connect **GND** of MQ-4 with GND of Arduino UNO.
- Connect positive pin of LED with pin 13 of Arduino UNO and LED's negative with GND of Arduino UNO.

After uploading done

- Open Serial Window at the upper-right hand corner of the Arduino IDE, when no gas is detected, the sensor will export 1(high voltage) to the serial monitor and the LED will be turned on.
- When gas generated by the lighter nears the sensor, it will export 0 (low voltage) and the LED will turn off.

ABLEDUCATION™
ACTIVITY BASED LEARNING

Code

Interfacing_of_MQ-4__Methane_Sensor_ | Arduino 1.8.19

File Edit Sketch Tools Help

Interfacing_of_MQ-4__Methane_Sensor_

```
const int AOUTpin=A0;//the AOUT pin of the MQ-4 sensor goes into analog pin A0 of the arduino
const int DOUTpin=8;//the DOUT pin of the MQ-4 sensor goes into digital pin D8 of the arduino
const int ledPin=13;//the anode of the LED connects to digital pin D13 of the arduino

int limit;
int value;

void setup() {
Serial.begin(115200);//sets the baud rate
pinMode(DOUTpin, INPUT);//sets the pin as an input to the arduino
pinMode(ledPin, OUTPUT);//sets the pin as an output of the arduino
}

void loop()
{
value= analogRead(AOUTpin);//reads the analaog value from the MQ4 sensor's AOUT pin
limit= digitalRead(DOUTpin);//reads the digital value from the MQ-4 sensor's DOUT pin
Serial.print("Sensor value: ");
Serial.println(value);//prints the sensor value
Serial.print("Limit: ");
Serial.print(limit);//prints the limit reached as either LOW or HIGH (above or underneath)
delay(100);
if (limit == HIGH){
digitalWrite(ledPin, HIGH);//if limit has been reached, LED turns on as status indicator
}
else{
digitalWrite(ledPin, LOW);//if threshold not reached, LED remains off
}
}
```

ABLEDUCATION™
ACTIVITY BASED LEARNING

Project Link :