

```
#include <ESP8266WiFi.h>
#include <ThingSpeak.h>

// Replace with your WiFi credentials
const char* ssid = "Galaxy";
const char* password = "omsairam";

// ThingSpeak details
unsigned long channelID =3088407; // e.g. 123456
const char* writeAPIKey ="XC5V1GOMDRFW4DB9";

WiFiClient client;

const int soilMoisturePin = A0;

void setup() {
    Serial.begin(115200);
    delay(10);

    // Connect to WiFi
    WiFi.begin(ssid, password);
    Serial.print("Connecting to WiFi");
    while (WiFi.status() != WL_CONNECTED) {
        delay(500);
        Serial.print(".");
    }
}
```

```
Serial.println("\nWiFi connected");

// Initialize ThingSpeak
ThingSpeak.begin(client);

}

void loop() {
    int sensorValue = analogRead(soilMoisturePin);

    // Map raw sensor value to moisture percentage (100% wet, 0% dry)
    int moisturePercent = map(sensorValue, 1024, 346, 0, 100);
    moisturePercent = constrain(moisturePercent, 0, 100);

    Serial.print("Raw Sensor Value: ");
    Serial.print(sensorValue);
    Serial.print(" | Soil Moisture: ");
    Serial.print(moisturePercent);
    Serial.println("%");

    // Send to ThingSpeak
    ThingSpeak.setField(1, moisturePercent);

    int response = ThingSpeak.writeFields(channelID, writeAPIKey);

    if(response == 200) {
        Serial.println("Data sent to ThingSpeak successfully.");
    }
}
```

```
    } else {
        Serial.print("Error sending data. HTTP response code: ");
        Serial.println(response);
    }

    delay(15000); // Send data every 15 seconds
}
```