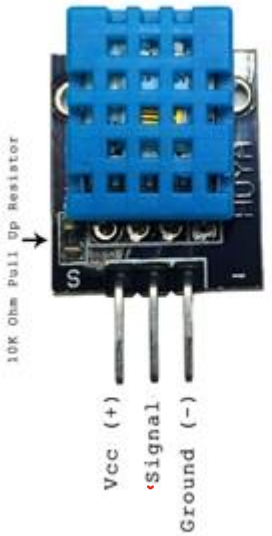
420-N23-LA Introduction to IOT

Sensor/Actuator Reference Sheet

Temperature/Humidity - DHT11 and DHT22

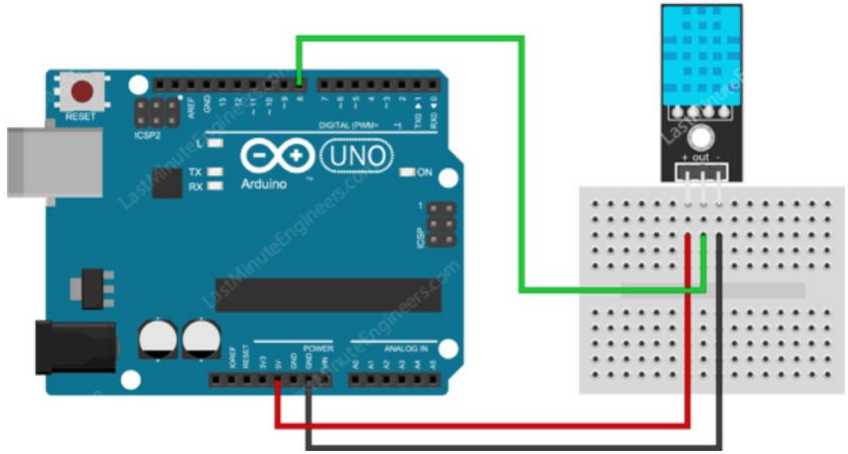
- TYPE: DIGITAL SENSOR
- There are two versions of this type of sensor.
  - Unit with a back-pcb, it contains a little resistor for you.
  - Unit with 4 pins only, this needs a resistor.
- DHT11 is the blue plastic case.
- DHT22 is the white plastic case, *only difference – it is more accurate and more expensive.*
- This is a very slow sensor, it takes 250 ms to read a value, and you should wait 2 seconds between measurements, minimum.

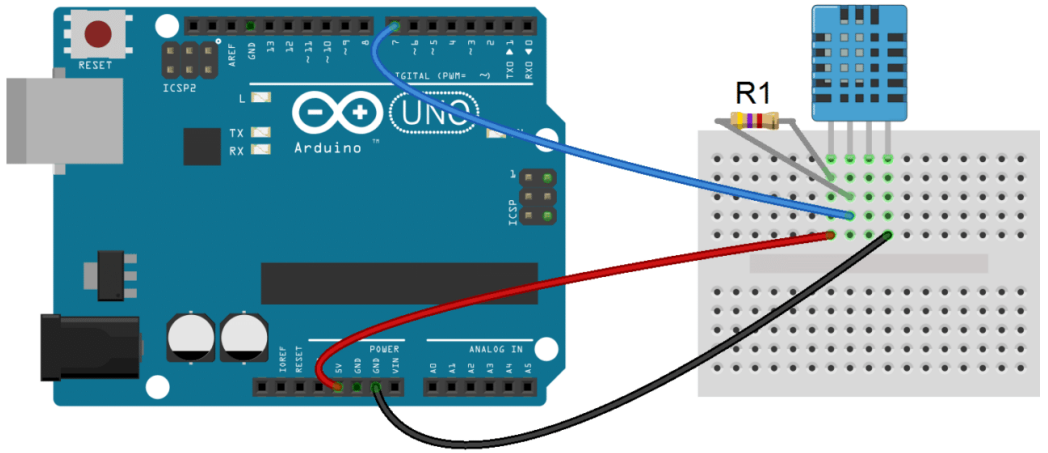


Temperature/Humidity - DHT11 and DHT22

- Connect VCC+ to 5V on Arduino.
- Connect Ground to GND on Arduino.
- Connect Signal to a pin on the Arduino.

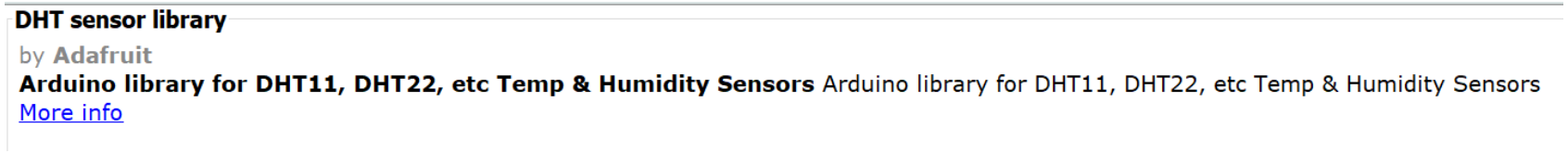
- The connections are the same, **but you need a resistor**.
- Put a 10kohm resistor (R1) between **Sig.** and **VCC+**.





Temperature/Humidity - DHT11 and DHT22

- Libraries
  - In Library manager, search for DHT and install the following library:



GIT Library location
https://github.com/adafruit/DHT-sensor-library

Temperature/Humidity - DHT11 and DHT22 Code

Class level code

```
#include "DHT.h“
#define DHTTYPE DHT11 // Or DHT22
DHT dht(DHTPIN, DHTTYPE);   // Creats a DHT object
```

Setup method code

```
dht.begin();
```

Temperature/Humidity - DHT11 and DHT22 Methods

Available Methods

```
float readTemperature();      // Read temperature as Celsius
float readTemperature(true);    // Read temperature as Fahrenheit
float readHumidity();  // Read humidity
float convertCtoF(temperature);
float convertFtoC(temperature);
float computeHeatIndex(temperature in Fahrenheit, humidity);
```

Example:

```
float currentTemp = dht.readTemperature();
```