Hands on activities 3
- Digital sensors

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CS 4380 / CS 5331

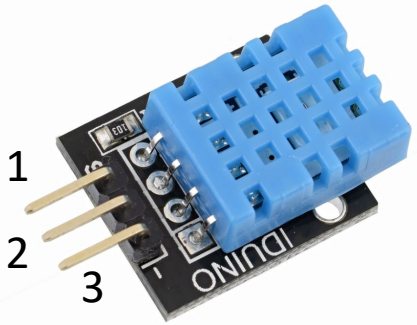
Example 1: Digital DHT sensor

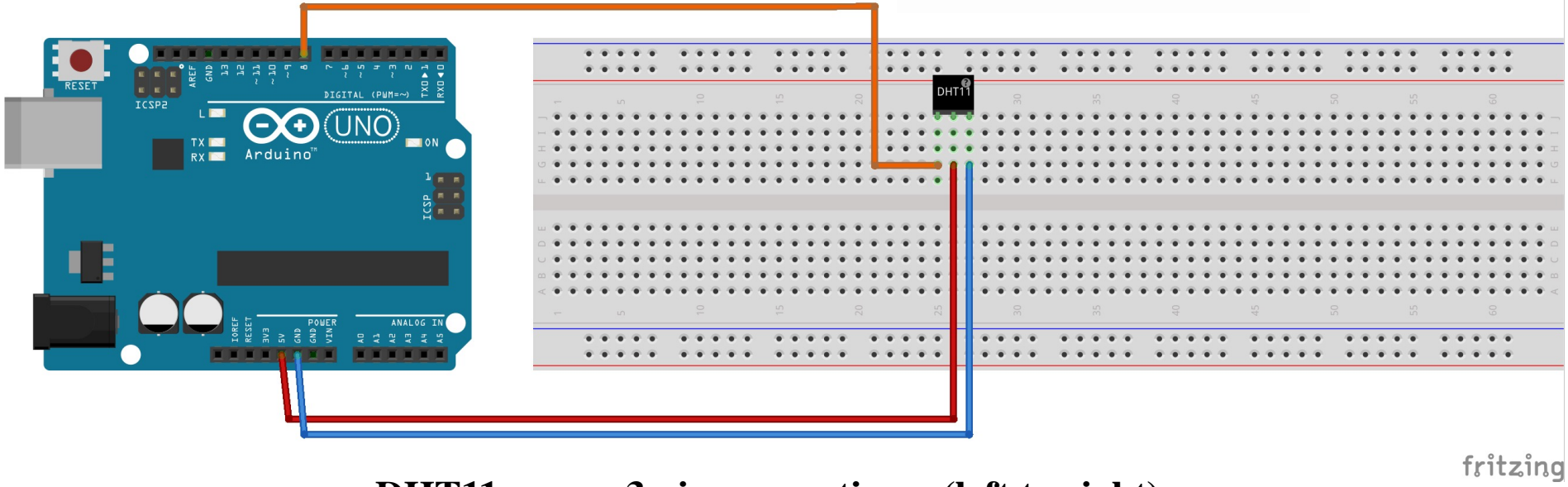
```
#include <dht11.h>
#define DHT11PIN 8
dht11 DHT11;
void setup() {
  Serial.begin(9600);
}
void loop() {
  Serial.println();
  int chk = DHT11.read(DHT11PIN);
  Serial.print("Humidity (%): ");
  Serial.println((float)DHT11.humidity, 2);
  Serial.print("Temperature (C): ");
  Serial.println((float)DHT11.temperature, 2);
  delay(1000);
}
```

https://github.com/adidax/dht11

After download and unzip, place the folder in Arduino Library

Note: The image in the textbook is incorrect.



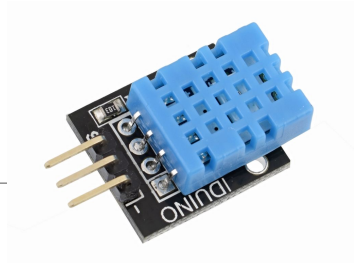


DHT11 sensor 3 pin connections: (left to right)
S-Signal, 5 V VDD, 0 V GND

DHT	1	2	3
Arduino	Pin 8	5V	GND

Example 2: DHT with LCD

```
#include <dht11.h>
#include <LiquidCrystal.h>
#define DHT11PIN 8
dht11 DHT11;
float tempF = 0.0;
LiquidCrystal lcd(12,11,5,4,3,2);
void setup() {
lcd.begin(16, 2);
lcd.print("Initializing...");
Serial.begin(9600);
delay(3000);  }
void loop() {
lcd.clear();
int chk = DHT11.read(DHT11PIN);
tempF = ((float)DHT11.temperature*9.0/5.0) + 32.0;
lcd.print("Humidity:");
lcd.print((float)DHT11.humidity);
lcd.print("%");
lcd.setCursor(0,1);
lcd.print("Temp.:");
lcd.print(tempF);
lcd.print("F");
delay(1000);  }
```

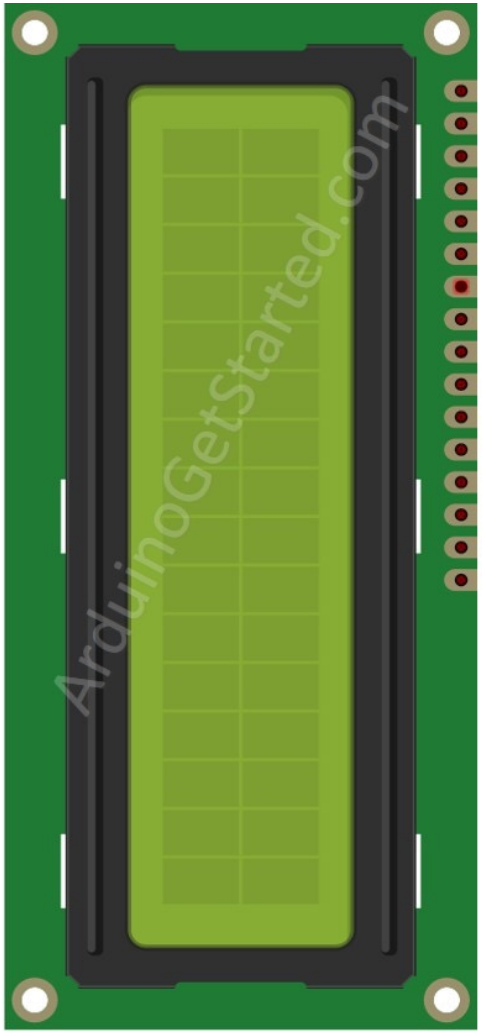


DHT11

DHT	1	2	3
Arduino	8	5V	GND

POT

POT	Left	Middle (or back)	Right
LCD	5V	3 (Contrast)	GND



ArduinoGetStarted.com

LCD

LCD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Arduino	GND	5V		12	GND	11	-	-	-	-	5	4	3	2	5V	GND