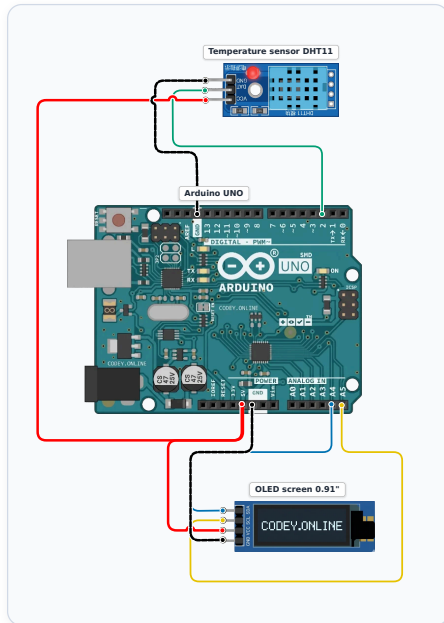


★★ Advanced beginner ⌚ 20 minutes

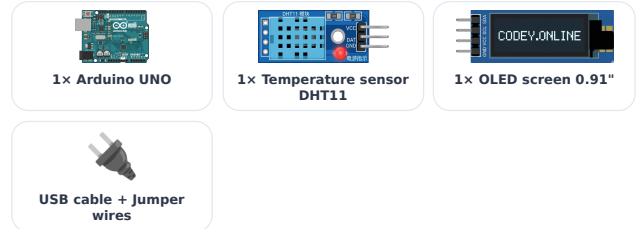
Mini weather station

You make a mini weather station. The DHT11 measures the temperature and the humidity, and the little OLED screen shows them.

Wiring diagram



What do you need?



This is how you build it

1. Connect the DHT11: DAT to pin 2, VCC to 5V and GND to GND.
2. Connect the OLED screen: SDA to A4, SCL to A5, VCC to 5V and GND to GND.
3. Tip: two parts need 5V and GND. Use the + and - strips of your breadboard.

The code

```
// Mini weather station
// The DHT11 measures the temperature and the humidity. The little OLED screen
// shows it.

#include <Wire.h>
#include <Adafruit_GFX.h>
#include <Adafruit_SSD1306.h>
#include <DHT.h>

const int DHT_PIN = 2;          // DAT of the DHT11 is on pin 2
DHT dht(DHT_PIN, DHT11);

Adafruit_SSD1306 display(128, 32, &Wire, -1); // OLED of 128 x 32 pixels (SDA =
// A4, SCL = A5)

void setup() {
  Serial.begin(9600);
  dht.begin();
  if (!display.begin(SSD1306_SWITCHCAPVCC, 0x3C)) { // 0x3C is the address of
    the display
    Serial.println(F("Display not found. Check the SDA and SCL wires."));
    while (true); // Stop: without a display
    it makes no sense
  }
  display.setTextColor(SSD1306_WHITE);
}

void loop() {

  float temperature = dht.readTemperature(); // In degrees Celsius
  float humidity = dht.readHumidity();       // In percent

  display.clearDisplay();
  display.setTextSize(1);
  display.setCursor(0, 0);

  if (isnan(temperature) || isnan(humidity)) { // Did measuring not work?
    display.setTextSize(1);
    display.print(F("No DHT11 found"));
  } else {
    display.print(temperature, 1);
    display.print((char)247); // The degree sign
    display.println(F("C"));
    display.print(humidity, 0);
    display.print(F("% hum"));

    Serial.print(F("Temperature: "));
    Serial.print(temperature);
    Serial.print(F(" C Hum: "));
    Serial.print(humidity);
    Serial.println(F(" %"));
  }

  display.display(); // Only now does everything really appear on the display
  delay(2000);      // The DHT11 can measure only once every 2 seconds
}
```

What does the code do?

- The DHT11 is on pin 2. With `readTemperature()` and `readHumidity()` we read the values.
- The OLED screen talks through SDA (A4) and SCL (A5). With `print()` we put text on the screen.
- Every 2 seconds there is a new measurement. Does measuring not work? Then you see a message.

Try this...

- Also show the temperature in Fahrenheit
- Turn on an LED when it is warmer than 25 degrees
- Remember the highest temperature of today and show that too

🔧 Build this project with Codey: open codey.online/starter-kits/uno/projects/weather-station and click MAKE THIS. Then the code and the wiring diagram are ready right away.