# Destination Weather Station Instructions v2.3

## Materials Needed:

1. 1x Seeeduino XIAO
2. 1x BME280 sensor
3. 1x OLED display
4. 1x microSD card module
5. 1x AA battery case
6. 1x Breadboard
7. 1x MicroSD card
8. 3x AA batteries
9. 1x USB-C cable
10. 1x MicroSD card adapter
11. 15x Jumper Wires
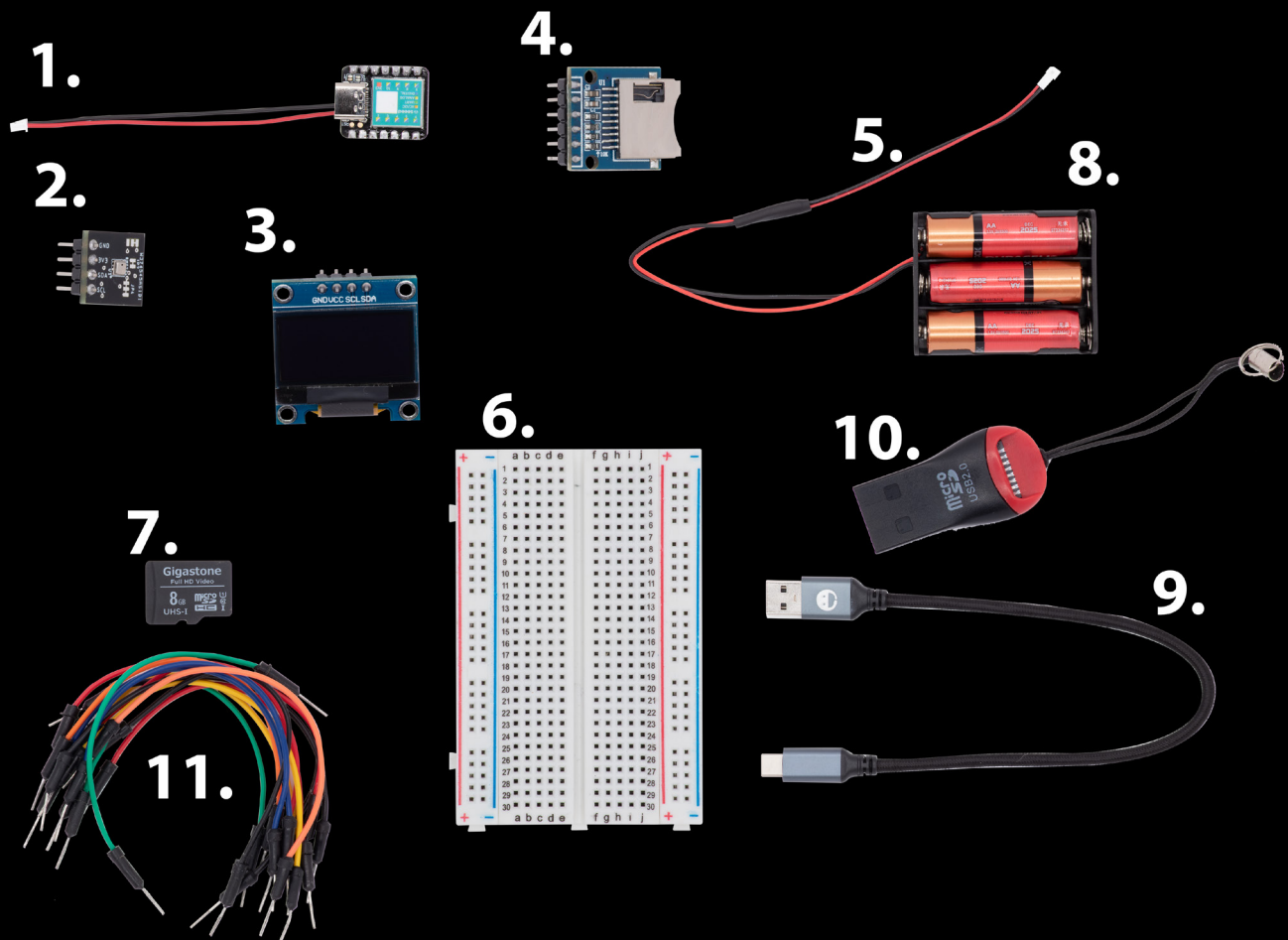
# Assembly:

1. Take Seeeduino XIAO and insert the top left pin into hole c1 and the top right pin into hole g1
2. Take the OLED display and insert the VCC pin into hole h12 and the SDA pin into hole h15
3. Take the BME280 weather sensor and plug the GND pin into hole b20 and the SCL pin into hole b23
4. Take the microSD card module and plug the GND pin into hole f25 and 3v3 pin into hole f30

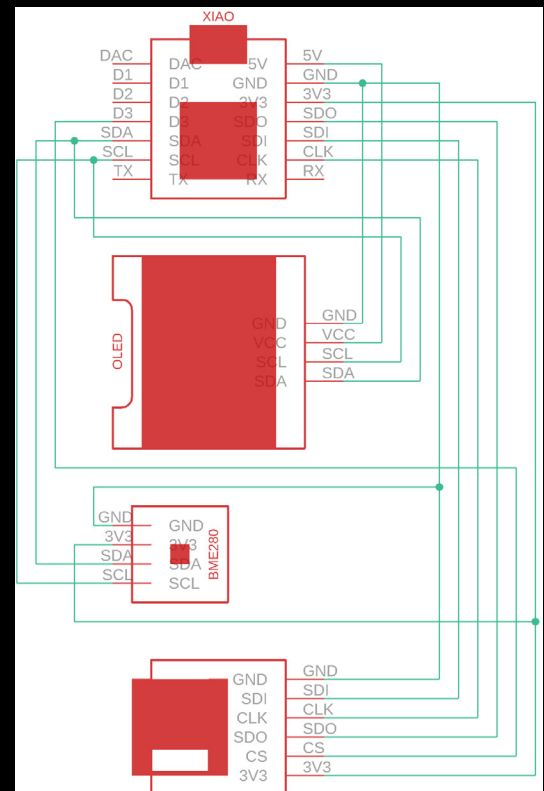Your weather station should similar to the image below:
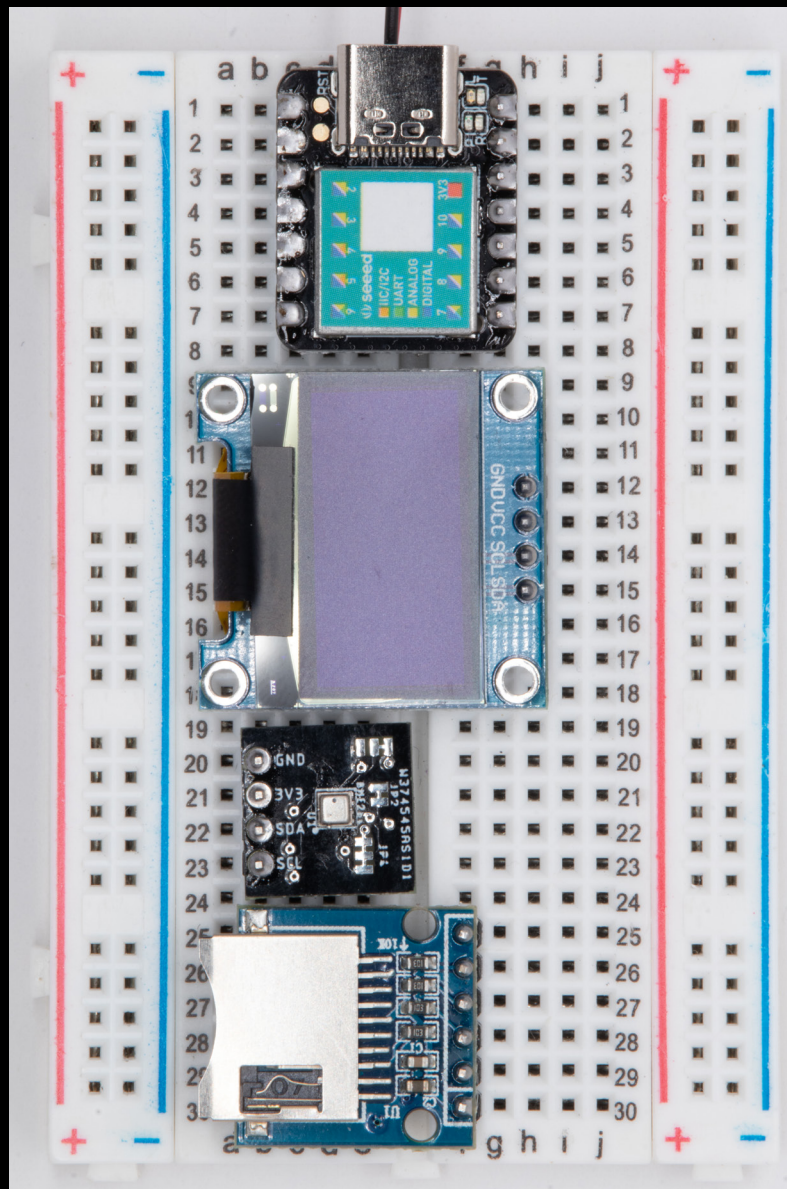
# Wiring:

OLED:
1. Connect a wire from hole h1to hole i12
2. Connect a wire from h2 to i13
3. Connect a wire from b6 to i14
4. Connect a wire from b5 to i15

BME280:
1. Connect a wire from i2 to a20
2. Connect a wire from h3 to a21
3. Connect a wire from a5 to a22
4. Connect a wire from a6 to a23

microSD Card Module:
1. Connect a wire from j2 to g25
2. Connect a wire from h5 to g26
3. Connect a wire from h6 to g27
4. Connect a wire from h4 to g28
5. Connect a wire from b4 to g29
6. Connect a wire from i3 to g30



Your weather station should look similar to the image below:
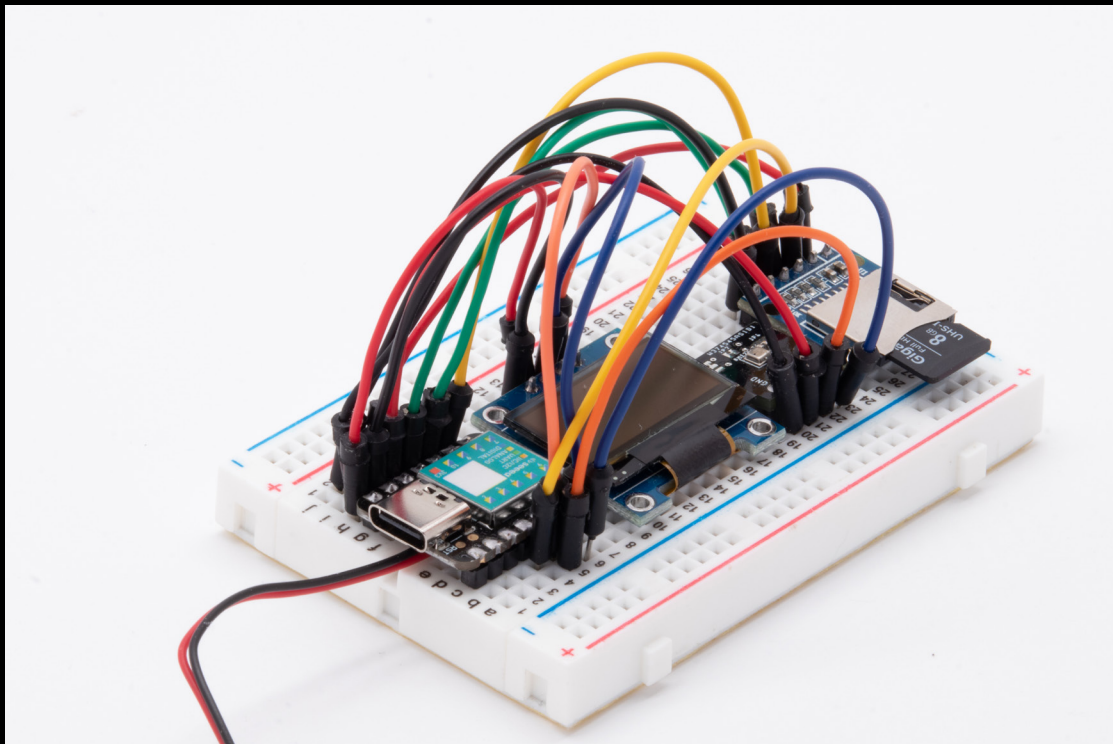
# Programming:

One of the benefits of using a XIAO as our microcontroller is that is supports a bootloader where you can drag and drop pre-compiled scripts onto it directly through your file manager like a flash drive! This makes getting started with the XIAO simple and can easily be done on Windows, Mac, and Chrome systems. In order to upload pre-compiled code to your XIAO you need to first put it in bootloader mode.

To enter bootloader mode begin by connecting your weather to your computer using your USB-C cable. Next you must short the reset pins twice in succession. These are the two copper pads next to the USB-C port that say RST. Only shorting the reset pins once will reset the XIAO, starting the code from the begining.

Once your enter bootloader mode on your XIAO a window should open on your computer showing the file directory of your XIAO. To upload a script to your XIAO simply drag and drop a UF2 (USB Flashing Format) file into the XIAOs directory as shown in the GIF below. The flashdrive provided with your kits contains the UF2 files needed for this camp. Once the file is uploaded to your XIAO the window will close and the script will run on your weather station.

**Note: When powering up your weather station make sure to always insert the microSD card before connecting the batteries.**

Additional materials and instructions can be found at
https://github.com/Destination-SPACE/Weather-Station/wiki