

# [Getting started with the O Watch](#)

Congratulations on your very own O Watch kit!

O Watch kit has all the pieces you will need to make your watch. In this project you will learn how electronic parts fit together and function as a product. Let's get started!

## **Important! Before you start!**

- This great fun project will require some adult supervision.
- O Watch kit contains electronics components like circuit board, battery, connecting wires and small 3D printed delicate parts.
- The O Watch buttons are tiny parts that can get lost easily. Please use a clean flat surface to setup.

There are 6 steps to setup your O Watch. You just need to do it this one time.

1. [Unbox your O Watch Kit](#)
2. [Assemble the O Watch](#)
3. [Configure the Arduino Software](#)
4. [Install the TinyScreen Library](#)
5. [Connect the O Watch](#)
  - [Install Windows Device Driver](#)
6. [Upload your first Program](#)

If you are facing problems connecting to O Watch/TinyScreen+ then see the troubleshooting steps below.

- [Troubleshooting](#)

# 1. Unbox your O Watch Kit?

Here is what you should have received.

- Main Processor Board – TinyScreen+ (TS+) : This is the brains of your watch. It is a microcontroller (mini computer) that you will use to program your watch.
- *Sensor Board (If you have the Sensor Kit) : Sensor Board comes with 4 sensors: temperature, compass, humidity and pressure*
- Rechargeable LiPo Battery : It is a battery that gets recharged when connected to a power source.
- USB Cable
- Main Watch Case : A 3D printed main case.
- Watch Case Back (closure) : A 3D printed case back.
- Watch Case Buttons (2 pairs) : 3D printed case button set. You should have 2 pairs, one for each side of buttons.
- Watch Band
- Paracord (5' #275)
- Glue tabs ( $\frac{3}{8}$ " 10mm )

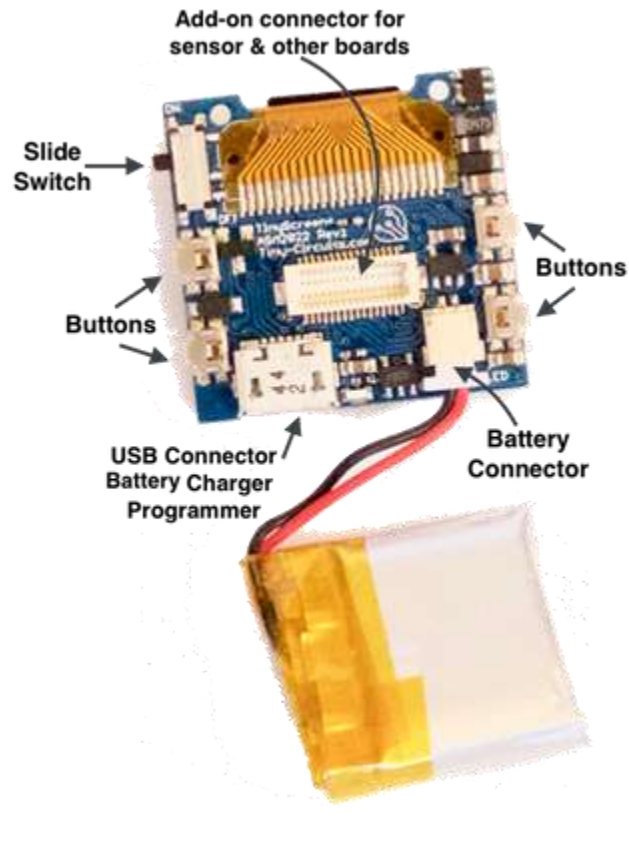


## 2. Assemble the O Watch

Watch the video and follow the step by step instructions below.

<https://youtu.be/1x9kxiTnsm4>

Get to know your O Watch main board before you start.

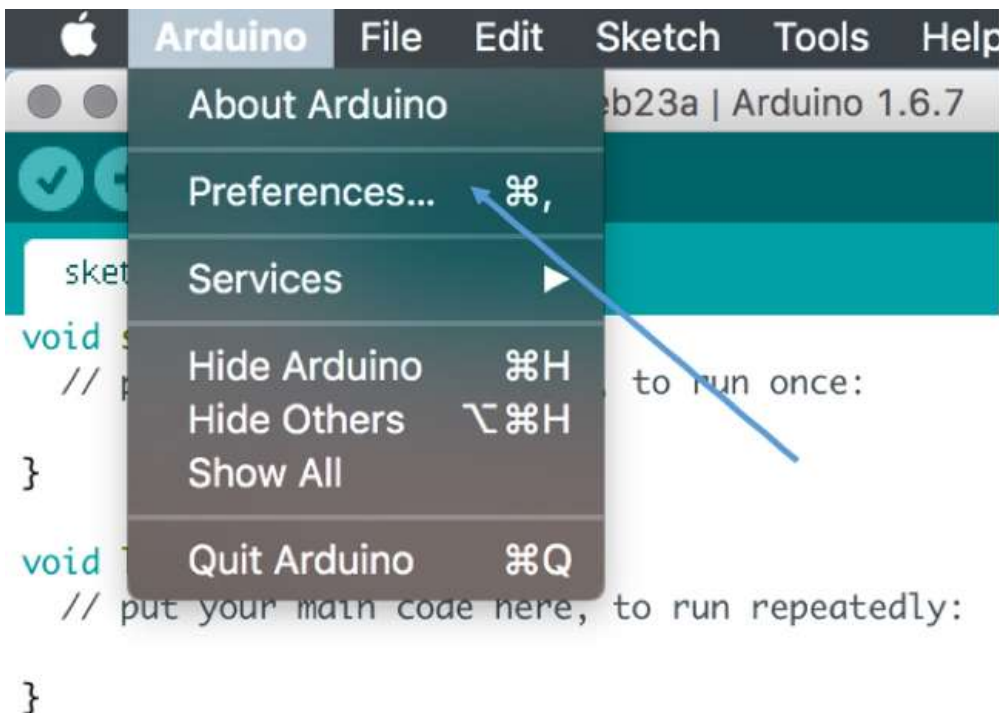


- Connect the battery to main board using the white connectors at the top of the battery. Push it in gently to ensure it is all the way in the connector.  
Tip: Hold the main board upside down from the sides with thumb and middle finger with pointer finger supporting it from below.
- If you have a sensor board, plug that to the main board. Use provided glue foam tabs to secure the board as shown in the video.
- Secure battery to the center of the main board (or sensor board) using provided glue tabs. Ensure the connecting cables wrap clockwise around to the side (with screen facing down) and stay snug and flat as shown in the video.
- Move the slider switch on the side up to the ON position. If the battery is charged you should see the screen light up. Leave switch in the ON position.

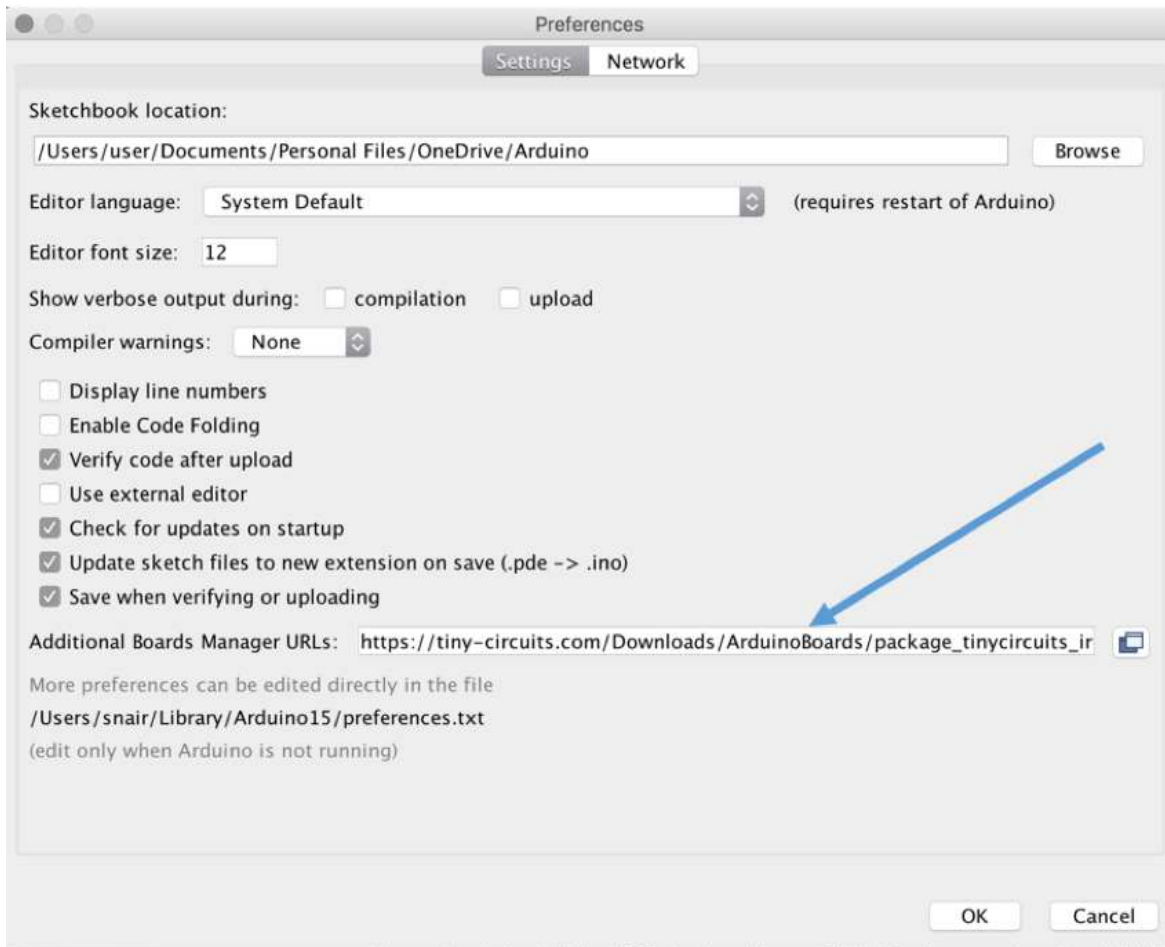
- Lay the watch main case upside down on the table and insert the two pairs of buttons on both sides as shown in the video.
- Gently and carefully insert the connected board(s) with battery into the case, screen facing down and the buttons on the board aligned to the ones on the case. CAREFUL! Do not use force; the screen or other parts can get damaged.
- Check for spacing around the battery. Adjust the position of the battery and connecting wires if they are touching side walls of the case. You do not want anything in the way when you insert the case back enclosure.
- Insert the case back enclosure with the two longer legs aligned to the top of the case and the clasps on the sides aligned along in between the buttons. Again do not force it in. Press gently and if you feel any obstruction remove and clear the sides.
- Once the case back is all the way in and secure, you now have the main unit ready to program.

### 3. Configure Arduino Software (IDE)

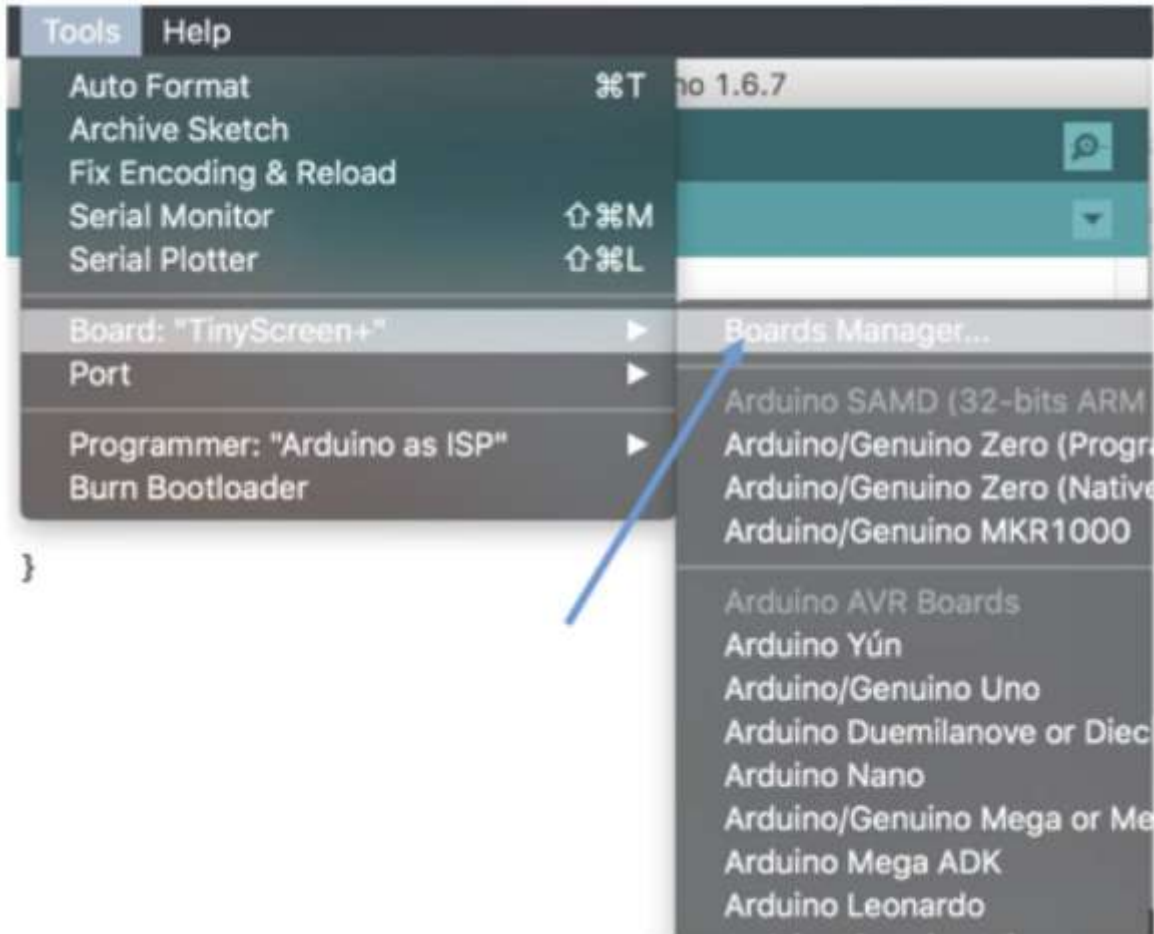
- Download and install the latest Arduino Software (IDE) from [Arduino website](https://www.arduino.cc/). (On Windows click Yes/Install whenever it asks 'Do you want to install this device driver/software'. You can also select the check box 'Always trust Arduino').
- Open Arduino IDE and go to File->Preferences (Windows) or Arduino->Preferences (Mac OSX).



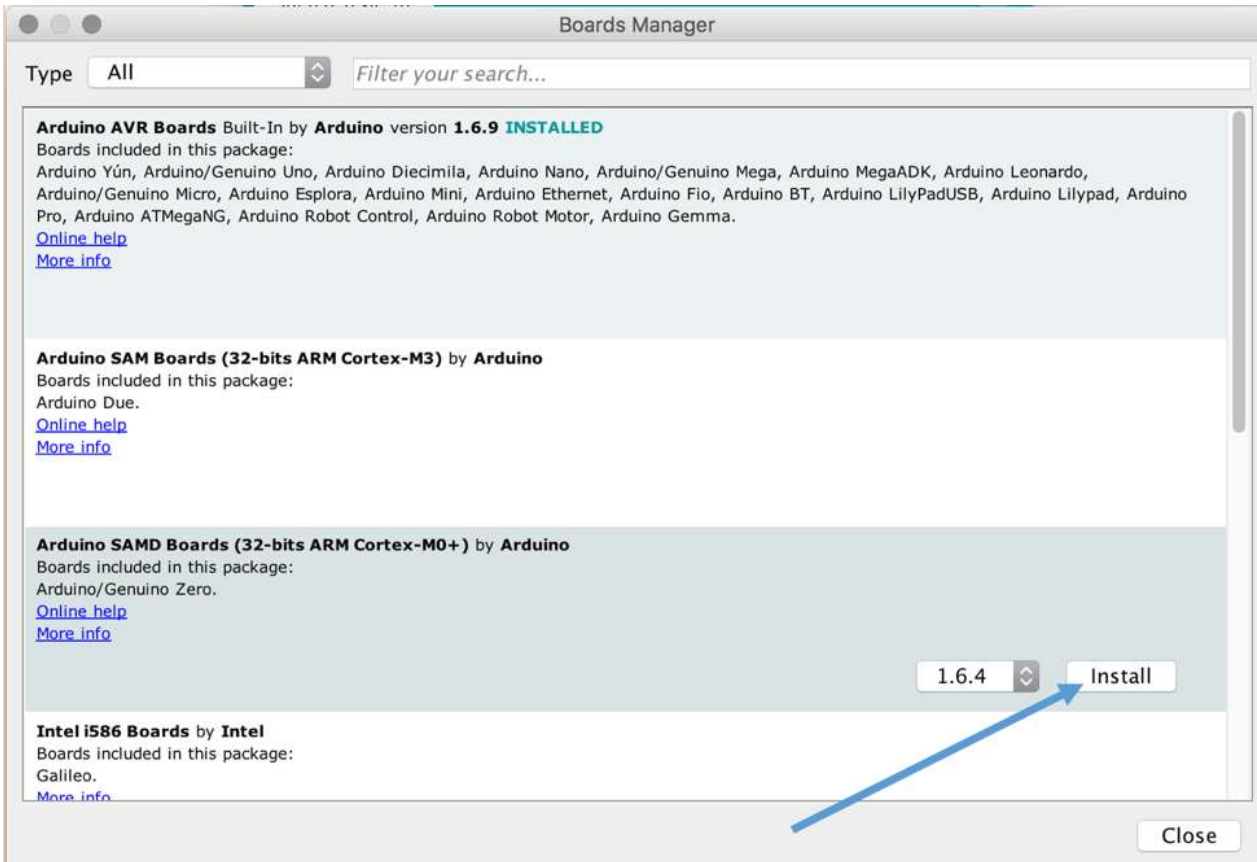
- Copy and paste this URL to the box that says “Additional Boards Manager URLs” and click ok. [https://tinycircuits.com/Downloads/ArduinoBoards/package\\_tinycircuits\\_index.json](https://tinycircuits.com/Downloads/ArduinoBoards/package_tinycircuits_index.json)



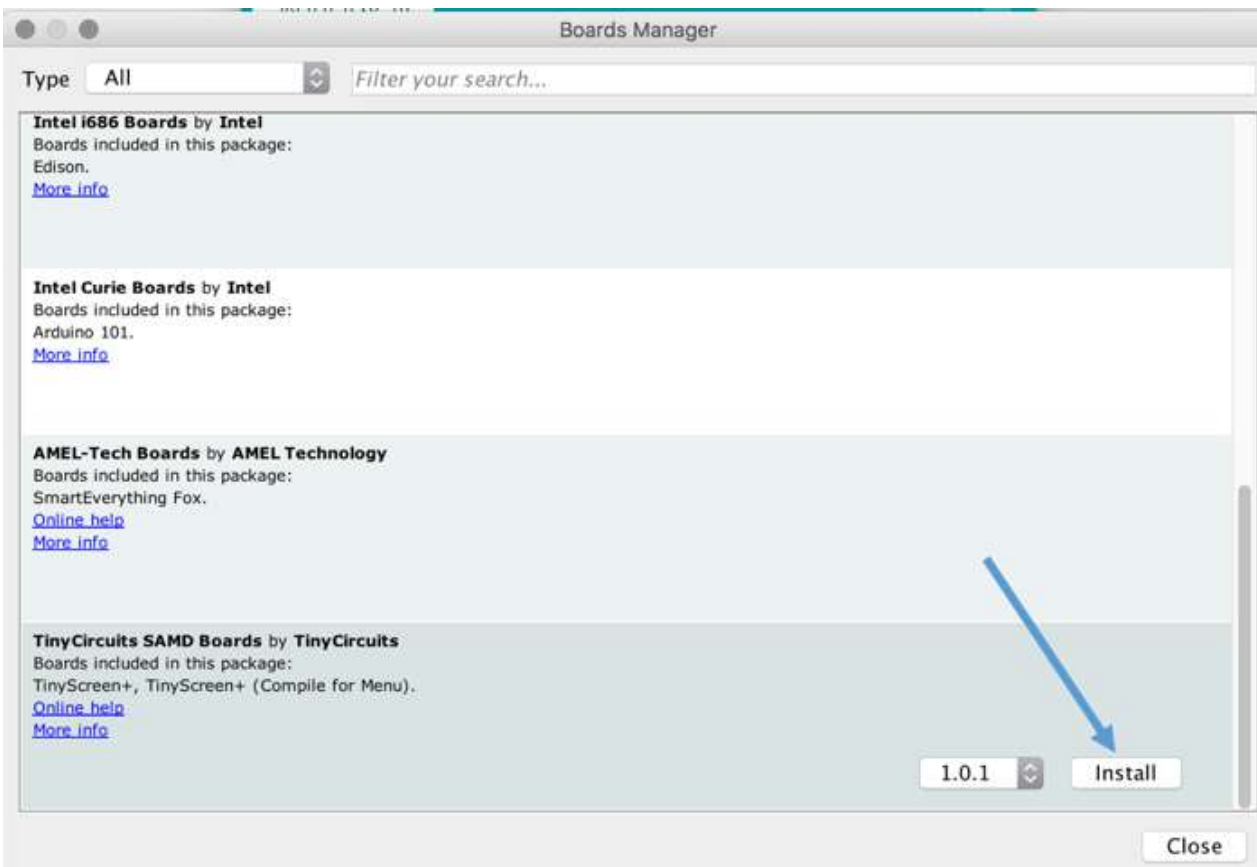
- Go to Tools->Board->Boards Manager.



- Select and install Arduino SAMD Boards (32 bits ARM Cortex-M0+) for Ardiuno/Genuino Zero/MKR 1000. Be patient this will take a few minutes.



- Then on the same Board Manager, scroll down to select and install TinyCircuits SAMD Boards.





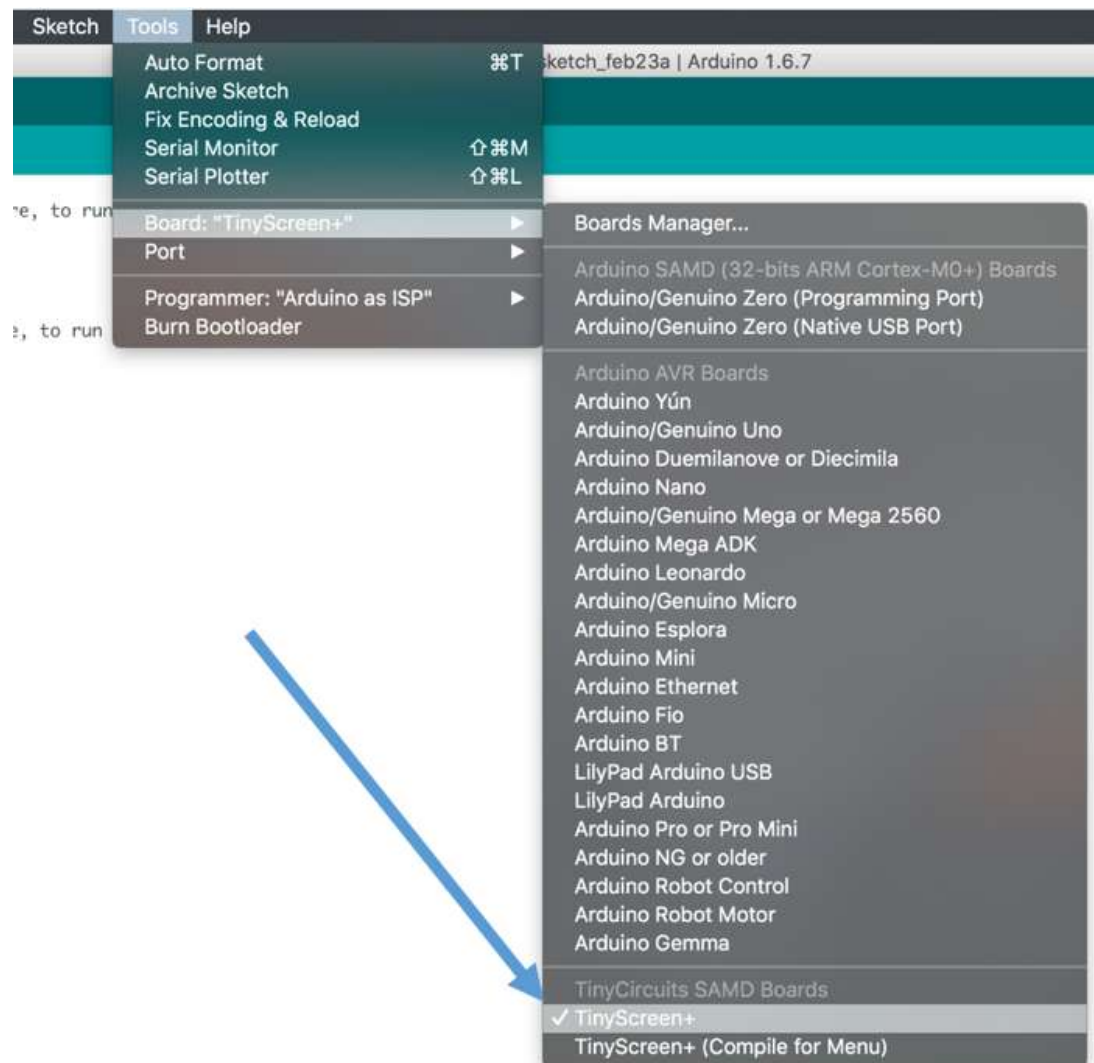
## 4. Install TinyScreen Library

O Watch requires the TinyScreen library to function.

- [Click here to download the TinyScreen library.](#)
- Unzip and copy the unzipped folder named TinyScreen.
- Go to My Documents (Mac) or Documents (PC) folder in your computer and paste the copied TinyScreen library folder in to Arduino->Libraries folder.

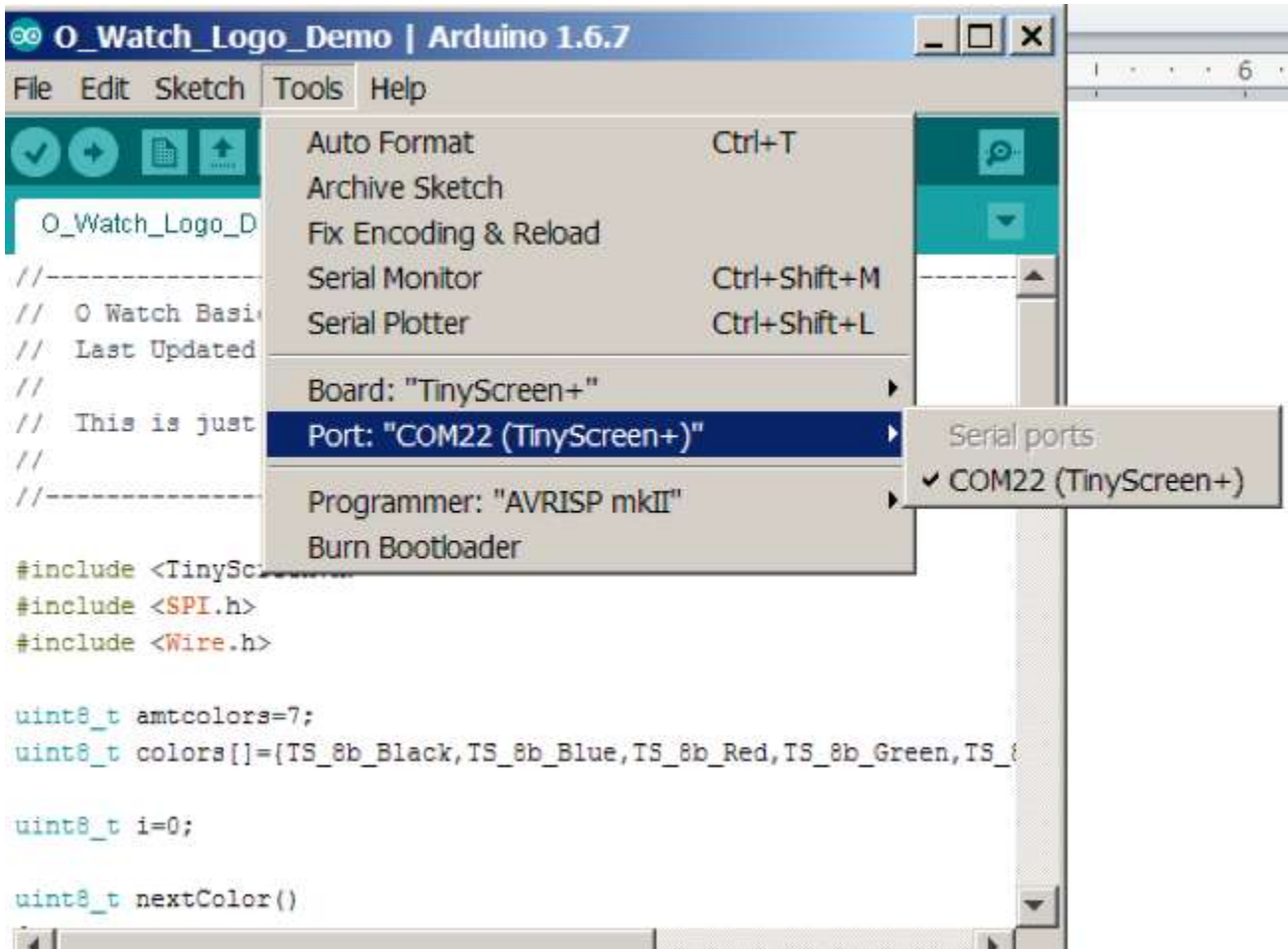
## 5. Connect O Watch

- Insert micro-USB cable to the O Watch micro-USB slot gently. Connect the other side of the cable to the USB port on your computer.
- Windows 7/8 users [click here for device driver installation instructions](#) before proceeding to next step. Mac and Win 10 users proceed to next steps below.
- In the Arduino IDE, go to Tools->Board and scroll down to select TinyScreen+.





- In the IDE, go to Tools->Port and select the port showing TinyScreen+. e.g. on Mac it should show something similar to “/dev/cu.usbmodem1411 (TinyScreen+)” and on Windows similar to “COM3 (TinyScreen+)”. The port numbers maybe different on your computer.



- Now you are ready to upload your very first program to the O Watch!

## 6. Upload your first program

- [Download this demo program](#) and unzip it to your Documents->Arduino folder. (My Documents->Arduino in Mac). The program is shown below. Alternately, you can copy and paste the code below in its entirety in to the Arduino IDE
- In the Arduino IDE, go to File->Open and select the O\_Watch\_Logo\_Demo.ino file from the Arduino folder. Click ok when it asks to create a folder.
- Make sure the Tools->Boards and Tools-Port both point to TinyScreen+.
- Click the arrow icon pointing to the right on top menu bar of Arduino IDE. This is the upload button that loads the program into your O Watch. It should show 'Uploading' and then 'Done uploading' on the status bar on below the IDE.
- If it successfully uploaded then you should see the demo running on the O Watch screen.

### Congratulations on first O Watch upload!

```
/*
 * Hello World
 * This is a simple program that blinks 'Hello World'
 * This for the Arduino compatible TinyScreen+ by http://tiny-circuits.com
 *
 * This example is in the public domain.
 * Published 29 Feb 2016
 * by O Watch http://theowatch.com
 */

#include <TinyScreen.h> //Include TinyScreen library

TinyScreen display = TinyScreen(TinyScreenPlus); //Set TinyScreen board type

int delaytime = 1000; //Declaring a variable to set the delay between text blink

// The setup function runs once when you power on the board
void setup()
{
  display.begin(); //Initializes TinyScreen board
  display.setFlip(1); //Flips the TinyScreen rightside up for O Watch
  display.on(); //Turns TinyScreen display on
  display.setFont(liberationSansNarrow_12ptFontInfo); //Set the font type
  display.setFontColor(TS_8b_Blue,TS_8b_Black); //Set the font color, font background
  display.setBrightness(10); //Set display brightness 0 - 15
}

// the loop function runs over and over again forever
void loop()
{
  display.setCursor(15,25); //set the cursor to x, y position, where to start next print/draw instruction
  display.print("Hello World!"); //print command
  delay(delaytime); //delay for 1000 milliseconds or one second
  display.clearScreen(); //clears the screen blank
  delay(delaytime); //delay again for one second
}
```