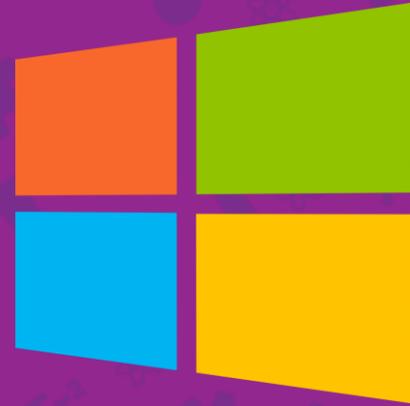




# Crash Course: Measurements, Sensors and Data Logging

*Arduino IDE Install  
&  
Finding COM Ports*

*PC, MAC & Chromebook*



# PC / Windows Instructions

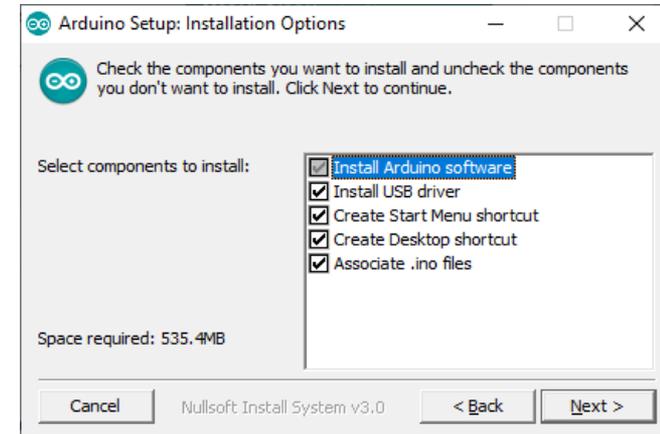
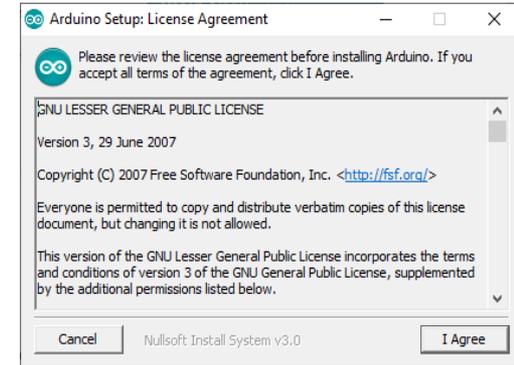
# Download & Install IDE

- Download  
<https://www.arduino.cc/en/Main/Software>
  - Windows Installer for windows 7 and up
- Install Arduino
  - Find download location or open installer from your browser



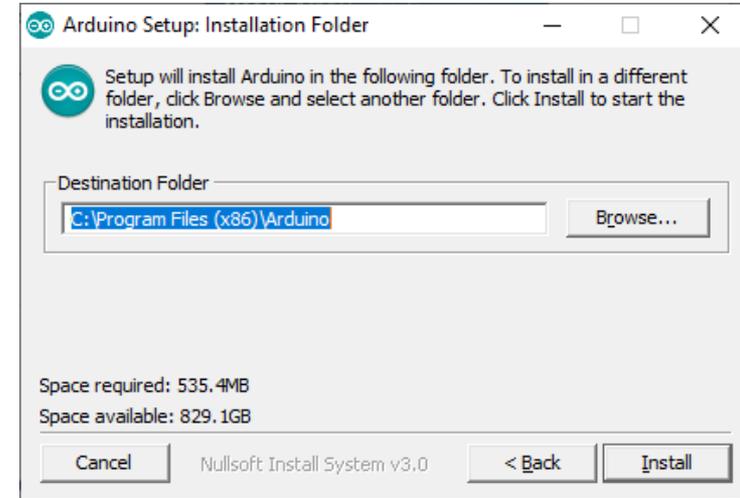
# Download & Install IDE – Part 1

- Install Arduino
  - Find download location or open installer from your browser
  - Agree to the License Agreement
  - Default Options are fine, click *Next*



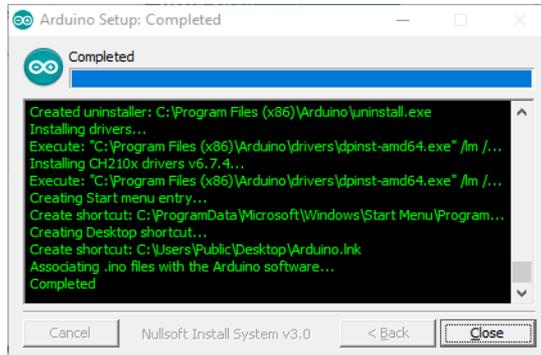
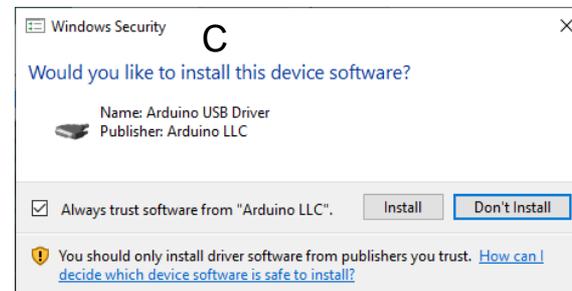
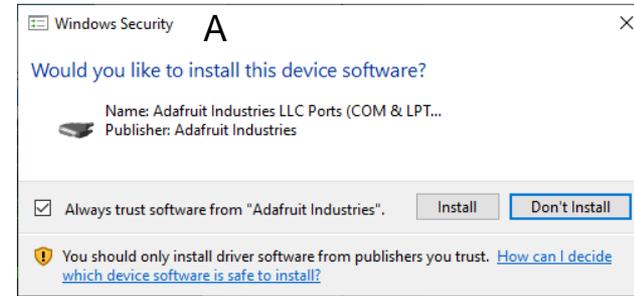
# Download & Install IDE – Part 2

- Install Arduino
  - Default Destination Folder is fine. Click *Install*



# Install Drivers & Completion

- A) Install COM port driver. Click *Install*
- B) Install USB driver (Arduino srl). Click *Install*
- C) Install USB driver (Arduino LLC). Click *Install*
- Install Complete. Click *Close*



# Download & Install CP2012 USB Driver – Part 1

- Download and install CP2012 USB Driver

<https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers>

- Select the version of your Windows version
- This will likely be downloaded to your *Downloads* folder

Silicon Labs » Products » Development Tools » Software » USB to UART Bridge VCP Drivers

## CP210x USB to UART Bridge VCP Drivers

The CP210x USB to UART Bridge Virtual COM Port (VCP) drivers are required for device operation as a Virtual COM Port to facilitate host communication with CP210x products. These devices can also interface to a host using the [direct access driver](#). These drivers are static examples detailed in application note 197: The Serial Communications Guide for the CP210x; download an example below:

AN197: The Serial Communications Guide for the CP210x

### Download Software

The CP210x Manufacturing DLL and Runtime DLL have been updated and must be used with v6.0 and later of the CP210x Windows VCP Driver. Application Note Software downloads affected are AN1445W.zip, AN2055W.zip and AN2235W.zip. If you are using a 5.x driver and need support you can download archived [Application Note Software](#).

[Legacy OS software and driver package download links and support information >](#)

### Download for Windows 10 Universal (v10.1.9)

Note: The latest version of the Universal Driver can be automatically installed from Windows Update.

Platform	Software	Release Notes
 Windows 10 Universal	<a href="#">Download VCP (2.3 MB)</a>	<a href="#">Download VCP Revision History</a>

### Download for Windows 7/8/8.1 (v6.7.6)

Platform	Software	Release Notes
 Windows 7/8/8.1	<a href="#">Download VCP (5.3 MB) (Default)</a>	<a href="#">Download VCP Revision History</a>
 Windows 7/8/8.1	<a href="#">Download VCP with Serial Enumeration (5.3 MB)</a> <a href="#">Learn More &gt;</a>	<a href="#">Download VCP Revision History</a>



# Download & Install CP2012 USB Driver – Part 2

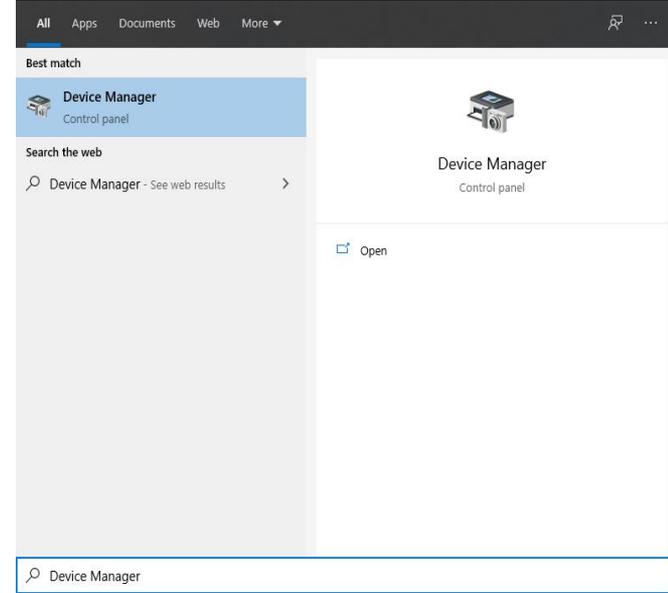
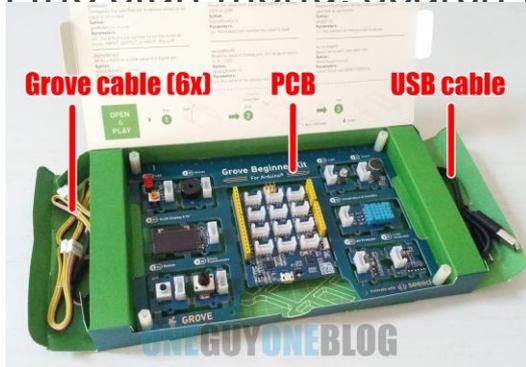
- Extract the downloaded folder
- Install the driver by double clicking on the driver  
*CP210xVCPInstaller\_64.exe*

PC > Windows7\_OS (C:) > Users > MSMikko > Downloads > CP210x\_Universal\_Windows\_Driver >

Name	Date modified	Type	Size
arm	10/16/2020 2:19 PM	File folder	
arm64	10/16/2020 2:19 PM	File folder	
x64	10/16/2020 2:19 PM	File folder	
x86	10/16/2020 2:19 PM	File folder	
CP210x_Universal_Windows_Driver_Relea...	10/16/2020 2:19 PM	Text Document	25 KB
CP210xVCPInstaller_x64.exe	10/16/2020 2:19 PM	Application	1,026 KB
CP210xVCPInstaller_x86.exe	10/16/2020 2:19 PM	Application	903 KB
dpinst.xml	10/16/2020 2:19 PM	XML Document	12 KB
silabser.cat	10/16/2020 2:19 PM	Security Catalog	13 KB
silabser.inf	10/16/2020 2:19 PM	Setup Information	11 KB
SLAB_License_Agreement_VCP_Windows...	10/16/2020 2:19 PM	Text Document	9 KB

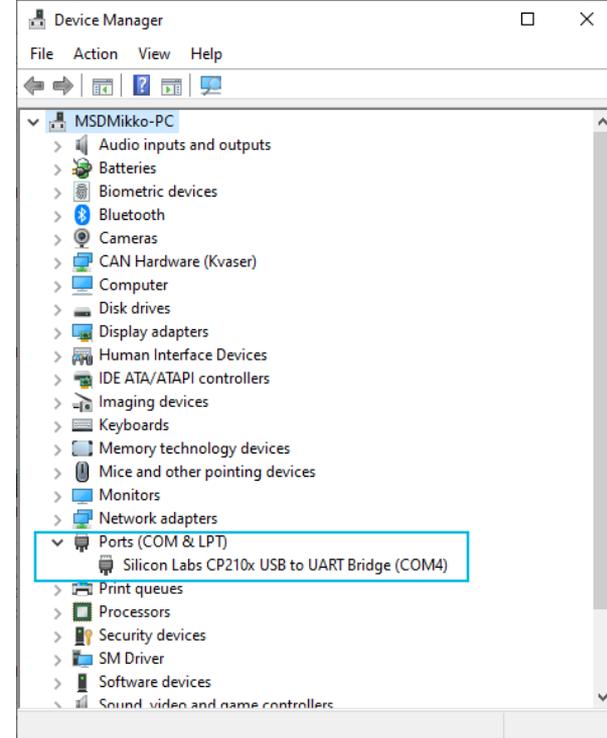
# Determining & Selecting the COM Port

- Plug Arduino into a USB Port on your PC
  - There is a cable in the Arduino box. It is in the side of the box.
  - Check that the USB cable is fully seated on the PC and Arduino connections.
- Open *Device Manager*
  - From the start menu, search for *Device Manager*



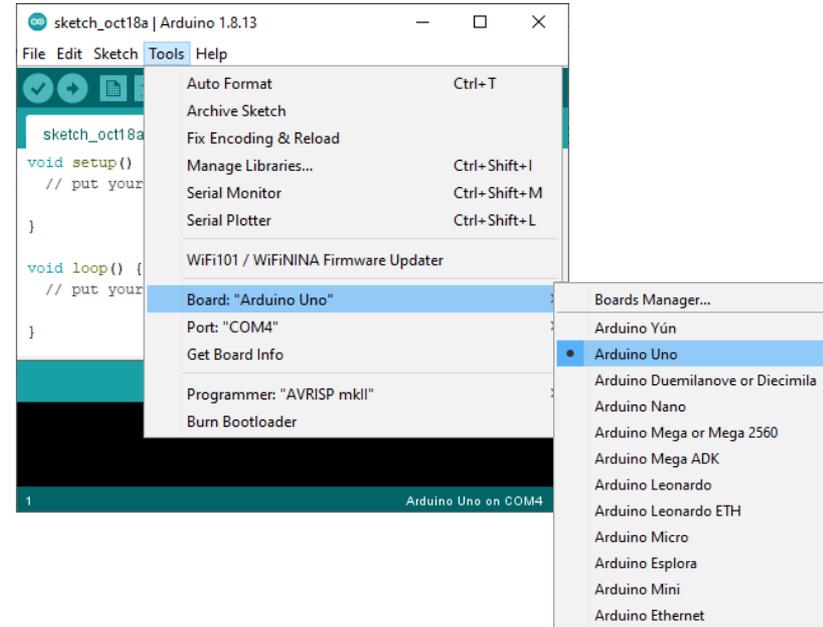
# Determining & Selecting the COM Port

- Search for *Ports (COM & LPT)*
  - Look for:
    - ***Silicon Labs CP210x USB to UART Bridge***
  - The COMX listed is the port.
    - In this instance COM4 is the port



# Setting the Board & Port in Arduino IDE

- Open the Arduino IDE
- Set the Board
  - *Tools -> Board -> Arduino Uno*
- Set the Port
  - *Tools -> Port -> COMX*
    - The port is the one determined previously



# Mac Instructions

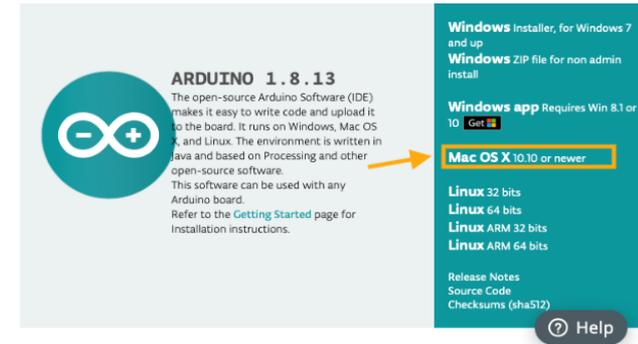


# Download & Install IDE

- Download  
<https://www.arduino.cc/en/Main/Software>
  - Mac OS X 10.10 or newer

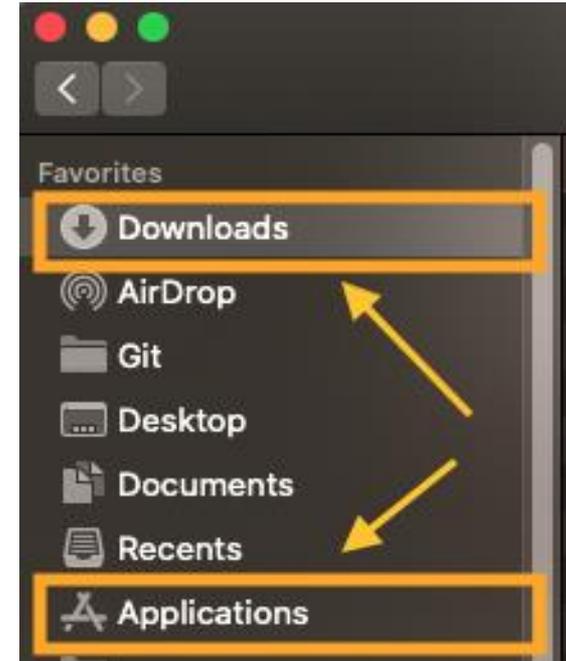


## Download the Arduino IDE



# Install Arduino IDE

- Find *Arduino.app* in your *Downloads* folder and click and drag it to your *Applications* folder.

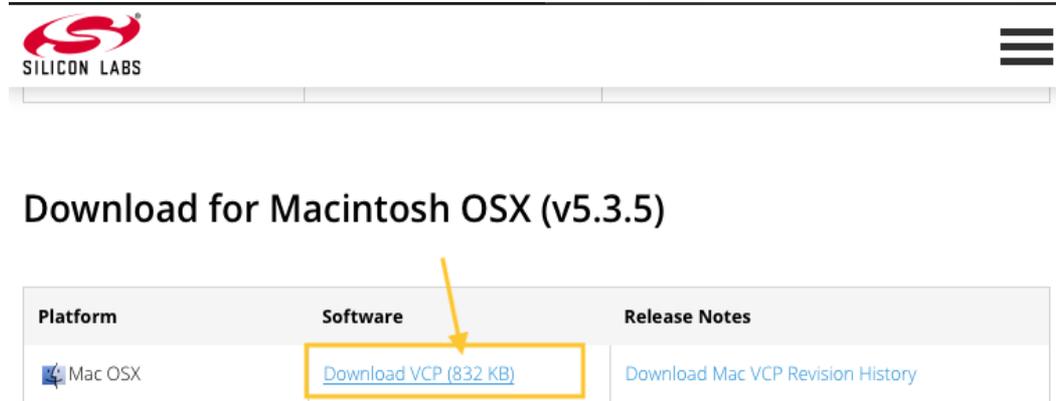


# Download & Install CP2012 USB Driver – Part 1

- Download and install CP2012 USB Driver

<https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers>

- Click on *Download VCP* under Download for Macintosh OSX (v5.3.5)

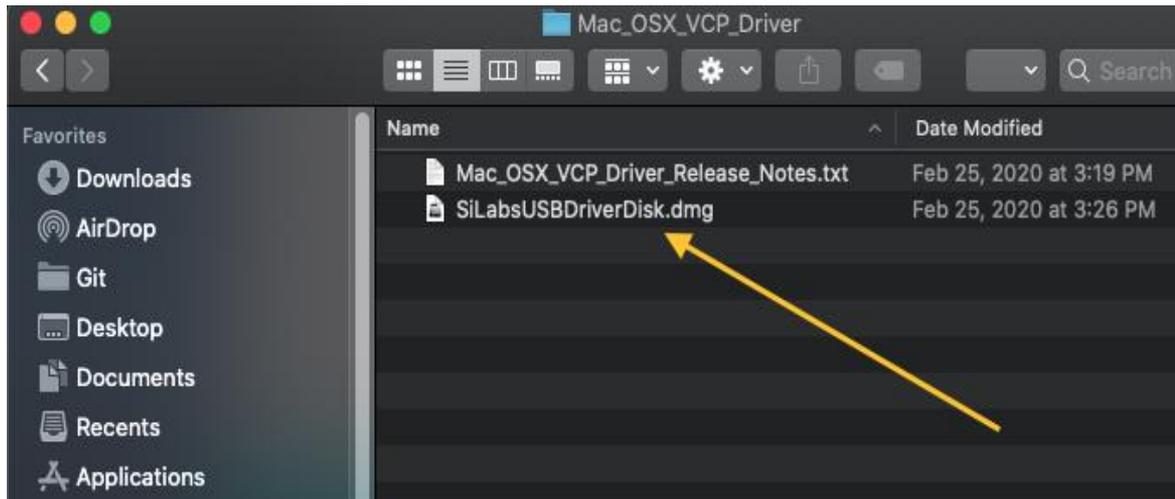


The screenshot shows the Silicon Labs website header with the logo and a hamburger menu icon. Below the header, the text "Download for Macintosh OSX (v5.3.5)" is displayed. A table with three columns: "Platform", "Software", and "Release Notes" is shown. The "Software" column contains a link "Download VCP (832 KB)" which is highlighted with a yellow box and a yellow arrow pointing to it. The "Release Notes" column contains a link "Download Mac VCP Revision History".

Platform	Software	Release Notes
 Mac OSX	<a href="#">Download VCP (832 KB)</a>	<a href="#">Download Mac VCP Revision History</a>

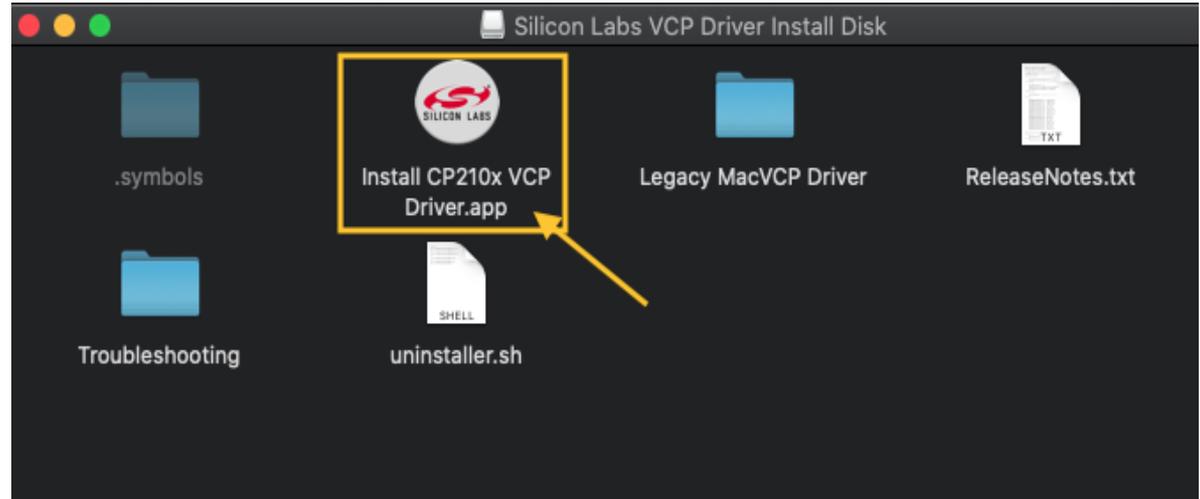
# Download & Install CP2012 USB Driver – Part 2

- Find and open the folder *Mac\_OSX\_VCP\_Driver* in the *Downloads* folder.
- Double click on *SiLabsUSBDriverDisk.dmg*



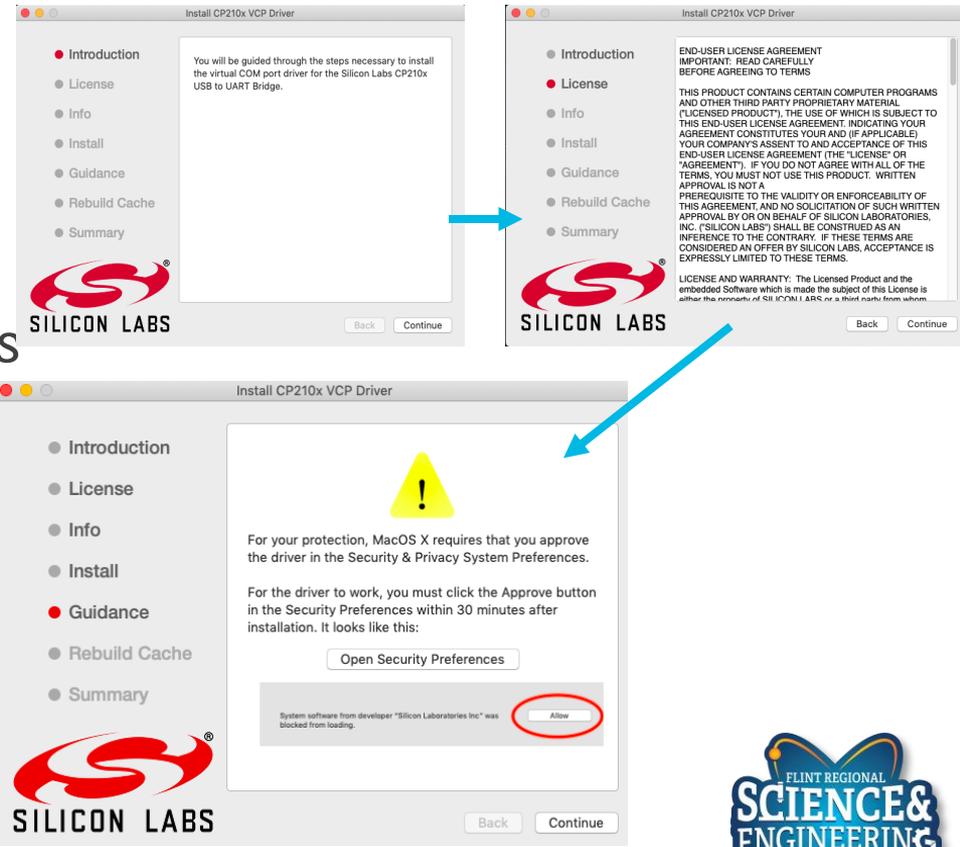
# Download & Install CP2012 USB Driver – Part 3

- Double click on *Install CP210x VCP Driver.app*



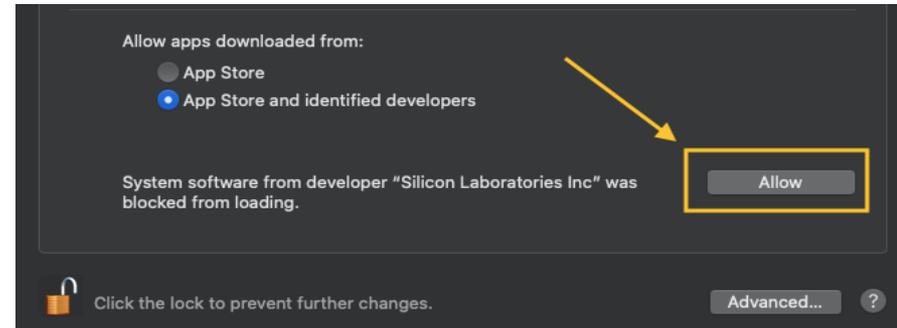
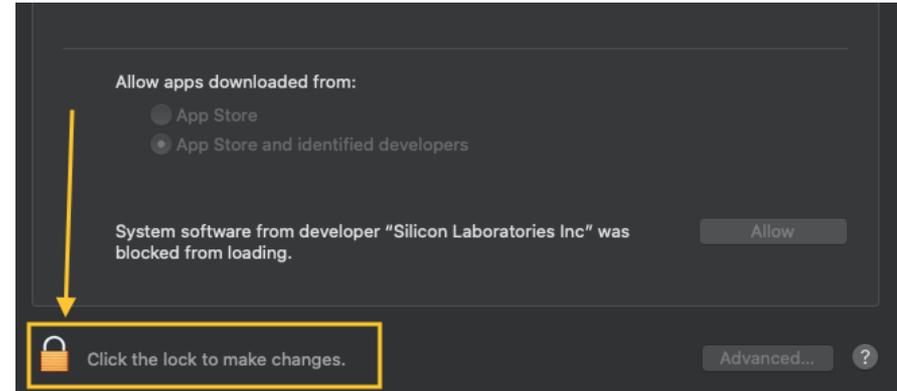
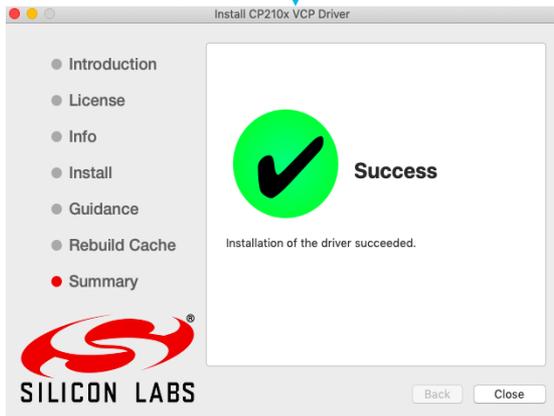
# Download & Install CP2012 USB Driver – Part 4

- Follow the installation instructions.
- Click on *Open Security Preferences*



# Download & Install CP2012 USB Driver – Part 5

- Select the Lock Icon in the corner and then select *Allow*
- It may take some time to rebuild the cache. When complete you'll get a success message.

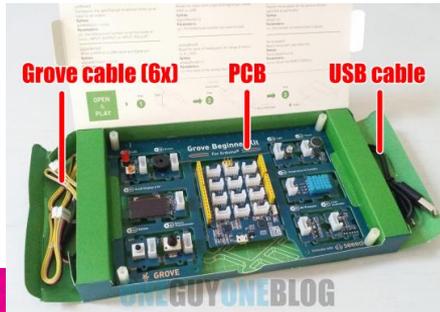
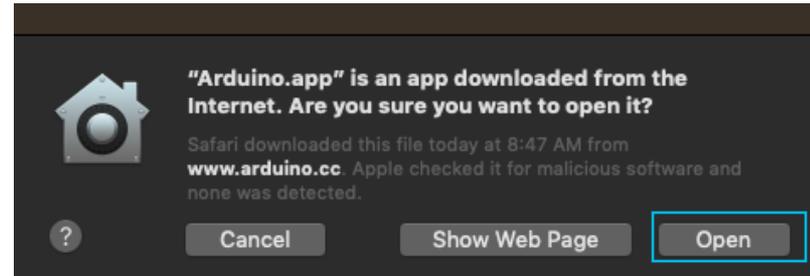


# Start the Arduino IDE and Power on the Arduino

- Open *Arduino.app* from you applications folder by double clicking on it.
- Click **Open** If you see the message: *Arduino.app” is an app downloaded from the Internet. Are you sure you want to open it.*

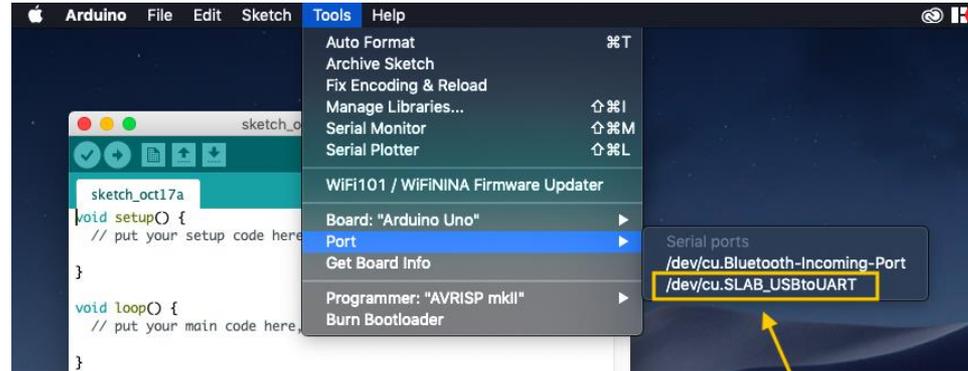
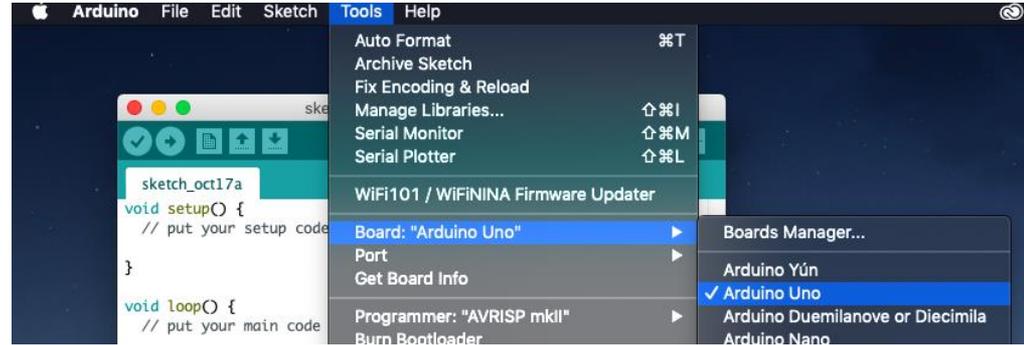
- Plug Arduino into a USB Port

- There is a cable in the Arduino box.
- Check that the USB cable is fully seated.
- An adapter or hub may be needed if the computer only have USB type-C ports.



# Setting the Board and Port in Arduino IDE

- Select the Board
  - *Tools -> Board -> Arduino Uno*
- Select the Port
  - *Tools -> Port -> dev/cu.SLAB\_USBtoUART (or similar)*

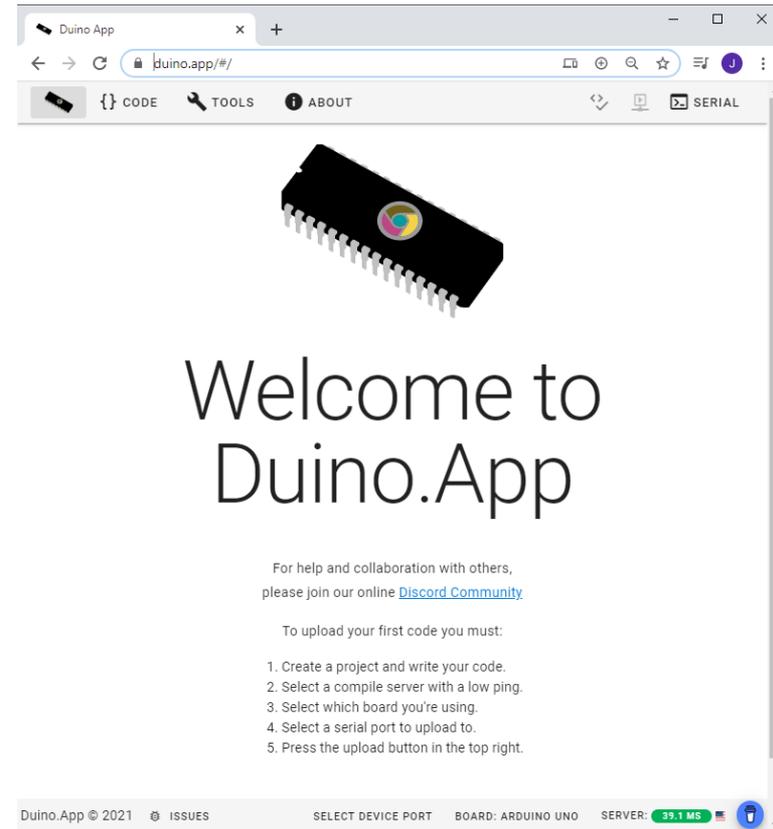




# Chromebook Instructions

# Duino App

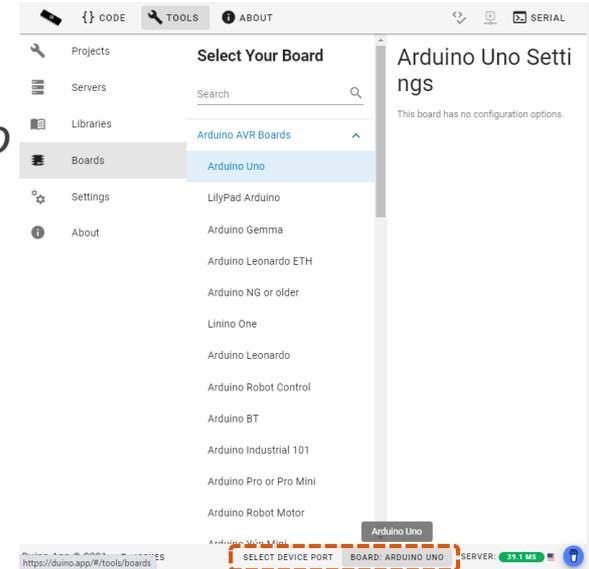
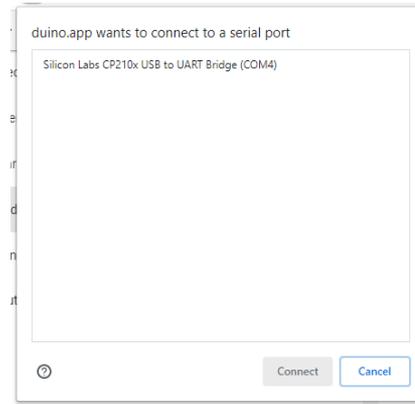
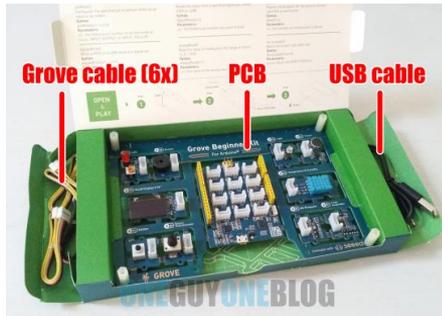
- The duino app will be used to edit and compile sketches and upload to our Arduino.
- Go to <https://duino.app/>
  - I'd save it as a favorite



The screenshot shows a web browser window with the address bar displaying "duino.app/#/". The page features a navigation bar with "CODE", "TOOLS", and "ABOUT" options. A central image of an Arduino board is positioned above the main heading "Welcome to Duino.App". Below the heading, there is a paragraph of text: "For help and collaboration with others, please join our online [Discord Community](#)". This is followed by a section titled "To upload your first code you must:" which contains a numbered list of five steps: 1. Create a project and write your code. 2. Select a compile server with a low ping. 3. Select which board you're using. 4. Select a serial port to upload to. 5. Press the upload button in the top right. At the bottom of the page, a status bar shows "Duino.App © 2021", "ISSUES", "SELECT DEVICE PORT", "BOARD: ARDUINO UNO", "SERVER: 39.1 MS", and a trash icon.

# Setting the Board and Port in Duino

- Select the Board
  - *Tools -> Boards -> Arduino AVR Boards / Arduino Uno*
- Select the Port
  - *Select Device Port -> Silicon Labs CP201x USB to UART Bridge Controller (*dev/ttyUSB0*)*
    - or something similar
    - Plug in the Arduino via USB cable.



# Duino App - Controls

Check & Compile      Compile & Upload      Serial Monitor

The screenshot displays the Duino App interface. At the top, there is a navigation bar with icons for a board, CODE, TOOLS, and ABOUT. Below this is a file explorer showing a folder named 'Test' containing a file 'test.ino'. The main area is a code editor with a line number column on the left (1-19) and a text area on the right containing the following code:

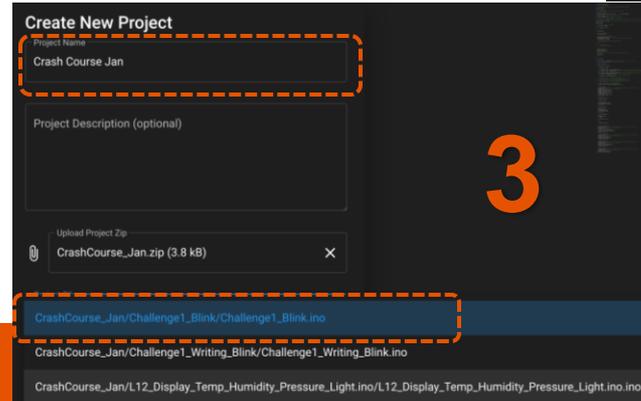
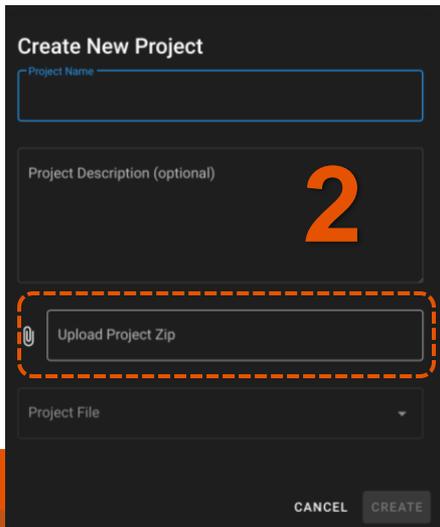
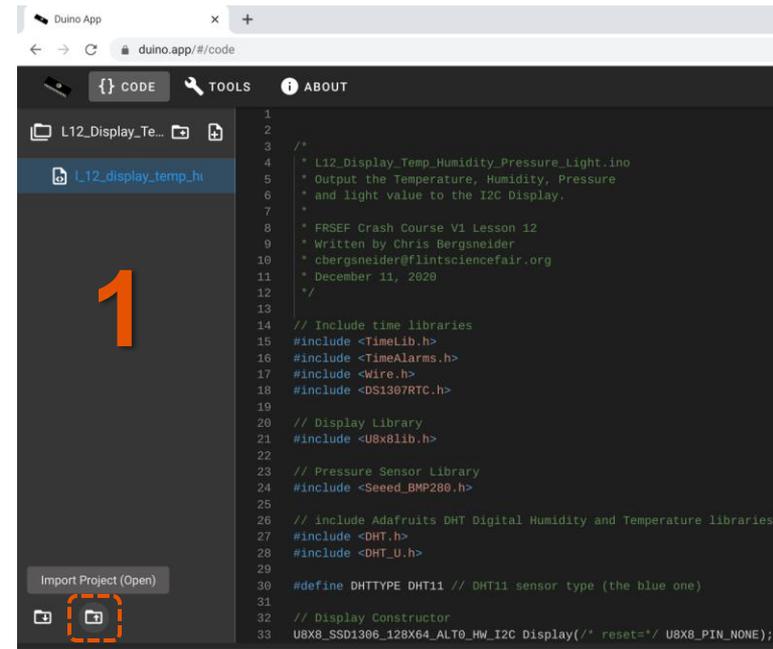
```
1 /*  
2 Blink  
3  
4 Turns an LED on for one second, then off for one second  
5  
6 Most Arduinos have an on-board LED you can control. It's usually  
7 it is attached to digital pin 13, on MKR1000 on pin 5. It's usually  
8 the correct LED pin independent of which board is used. If you  
9 If you want to know what pin the on-board LED is connected to on  
10 model, check the Technical Specs of your board at:  
11 https://www.arduino.cc/en/Main/Products  
12  
13 modified 8 May 2014  
14 by Scott Fitzgerald  
15 modified 2 Sep 2016  
16 by Arturo Guadalupi  
17 modified 8 Sep 2016  
18 by Colby Newman  
19
```

At the bottom of the interface, there is a status bar with the following information: Duino.App © 2021, ISSUES, SELECT DEVICE PORT, BOARD: ARDUINO UNO, SERVER: 39.1 MS, and a trash icon.



# Duino App – Importing a File

- Import Project (bottom left corner)
- Select *Upload Project Zip* and select the zip file of the sketches
- Select the desired sketch and enter a name under *Project Name*



# Notes

- Version 1.2
  - Plug in Arduino to find the port
  - Published 2021/01/09, J. Krell
- Version 1.1
  - Updated Chromebook instructions to the Duino App
  - Published 2021/01/04, J. Krell
- Version 1.0
  - Published 2020/10/18, J. Krell