

Spark their Imagination 2024

Software Installation

This short guide includes instructions for installing the Arduino IDE, USB drivers and the UKESF Sixth-Formers Arduino library.

Installing the Arduino IDE

The Arduino IDE is available for Windows, Linux, and Mac OS X and can be downloaded from arduino.cc/en/software. Please select the correct download file for your operating system (OS) on the right hand side and follow the instructions. Note that the version number may differ from that shown in Fig. 1.

Downloads



Figure 1. The Arduino IDE starting window showing an empty sketch.

Once installed, launching Arduino should show a window like the one in Fig. 2. You can alter Settings via **File > Preferences** where you can change the font, turn on line numbers, and more.

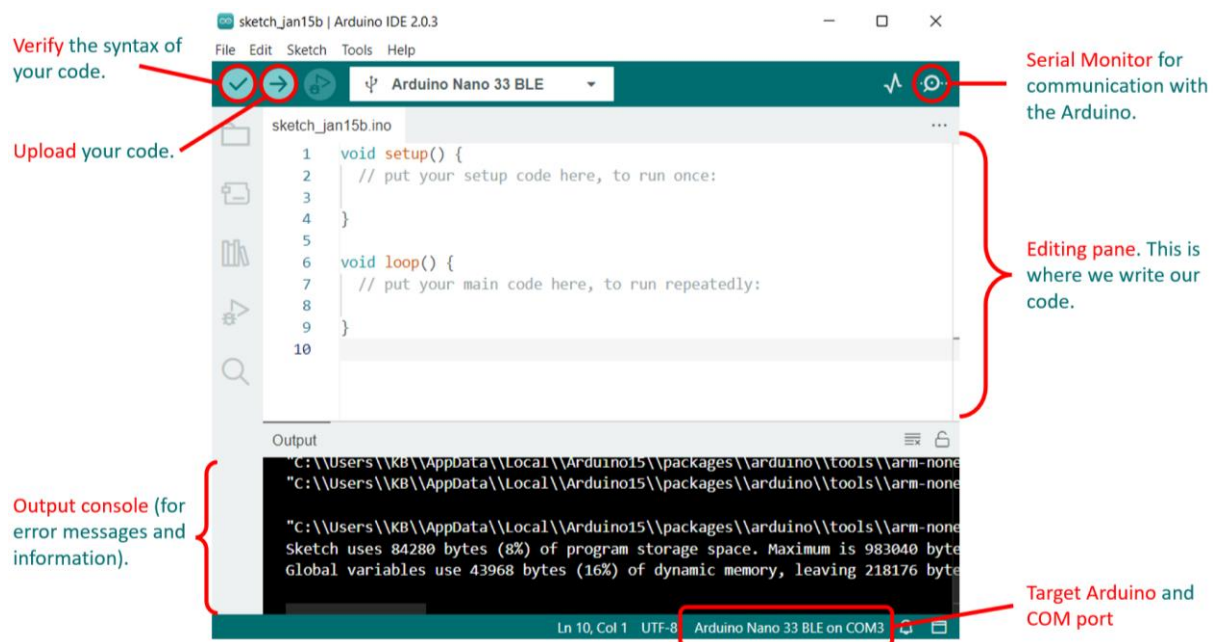


Figure 2. The Arduino IDE (v.2.0.3) showing an empty sketch.

Installing the USB Driver

To use the Grove kit and Seeeduino Lotus microcontroller, you need the CP210x USB driver for your OS. You can download and install it from the Silicon Labs website here: bit.ly/3rT2eD8. The installation files are listed under the “Downloads” tab and will download as a .zip file to your computer. The available driver files for Windows and Mac are shown in Fig. 3.

Note: Installation on other operating systems is not covered here. If you need help, search online for “installing CP201x driver + your OS” for more information.



The screenshot shows the 'Software Downloads' section of the Silicon Labs website. It features a list of software files with their respective versions and dates. The list is as follows:

Software	Version	Date
CP210x Universal Windows Driver	v11.2.0	10/21/2022
CP210x VCP Mac OSX Driver	v6.0.2	10/26/2021
CP210x Windows Drivers	v6.7.6	9/3/2020
CP210x Windows Drivers with Serial Enumerator	v6.7.6	9/3/2020
CP210x_5x_AppNote_Archive		9/3/2020

Figure 3. Downloading the CP210x USB Driver from Silabs at: bit.ly/3rT2eD8.

After the download, the installation procedure is as follows:

Windows install:

1. Using Windows File Explorer, locate the driver folder (that you previously unzipped).
2. Right click on the *silabser.inf* file and select Install.
3. Follow the instructions.

MacOS install:

1. Using Finder, navigate to the downloaded zip file and unzip it (double click).
2. Mount the DMG file and double click on Silicon Labs VCP Driver.
3. On MacOS 10.13 and later, the installation of the driver may be blocked. To unblock, open the System Preferences Security & Privacy pane and unblock the system extension (See Apple Technical Note TN2459 "User-Approved Kernel Extension Loading" for more information).

After the driver is installed, connect the Seeeduino Lotus board to your computer using the provided USB cable and open the Arduino IDE. In the Arduino IDE click on **Tools > Board > Arduino Uno** to select the correct development board model as shown in Fig. 4. Then click on **Tools > Port > COMN**, where **N** is the port that your operating system has assigned to the Arduino (in this case it is **COM7**). Note that this number may change each time you connect the board.

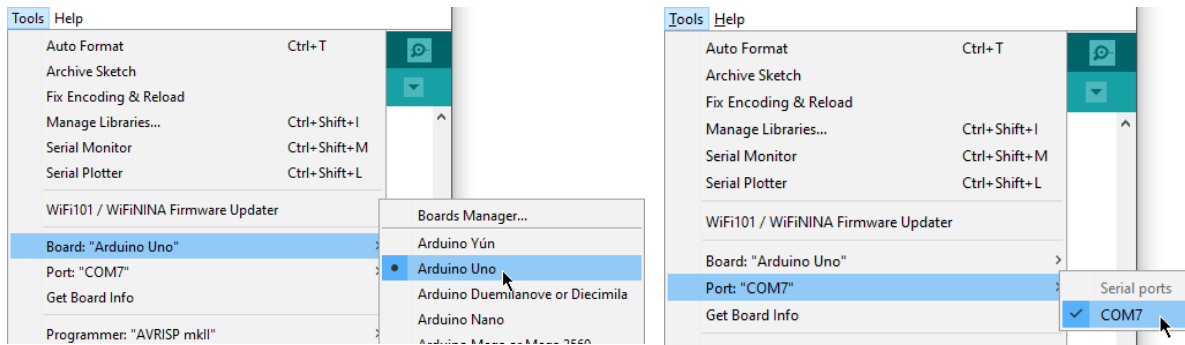


Figure 4. Selecting the correct Board type “Arduino Uno” and choosing the correct COM port once a board is connected.

Installing the UKESF Sixth Formers Library

This guide comes with an Arduino library, called *UKESF Sixth-Formers*. A library contains a set of functions that allow you to easily do more with an Arduino that is available out of the box. We’ll worry about the details later, but for now we need to install this library so that it is ready. To do this, in your Arduino IDE go to **Sketch > Include Library > Manage Libraries...** (or use the left hand side tabs if you are using Arduino IDE 2.0), then type in *UKESF Sixth-Formers* and click **Install** as shown in Fig. 5. Make sure to install the latest version, which may be different from v2.0.2 as shown in the figure below.

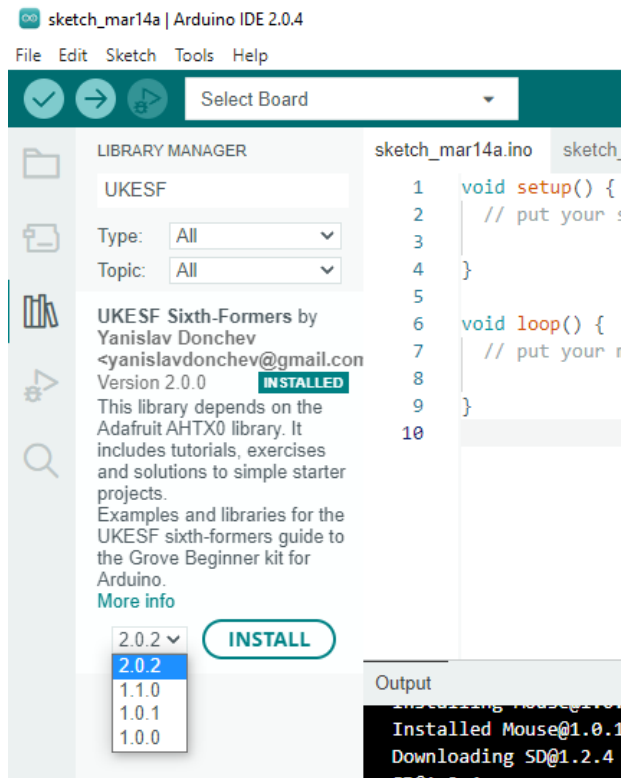


Figure 5. The Library Manager window.

That’s it, you are now ready to move on to the main guide and start the exercises there.