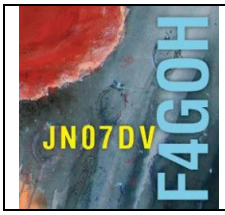
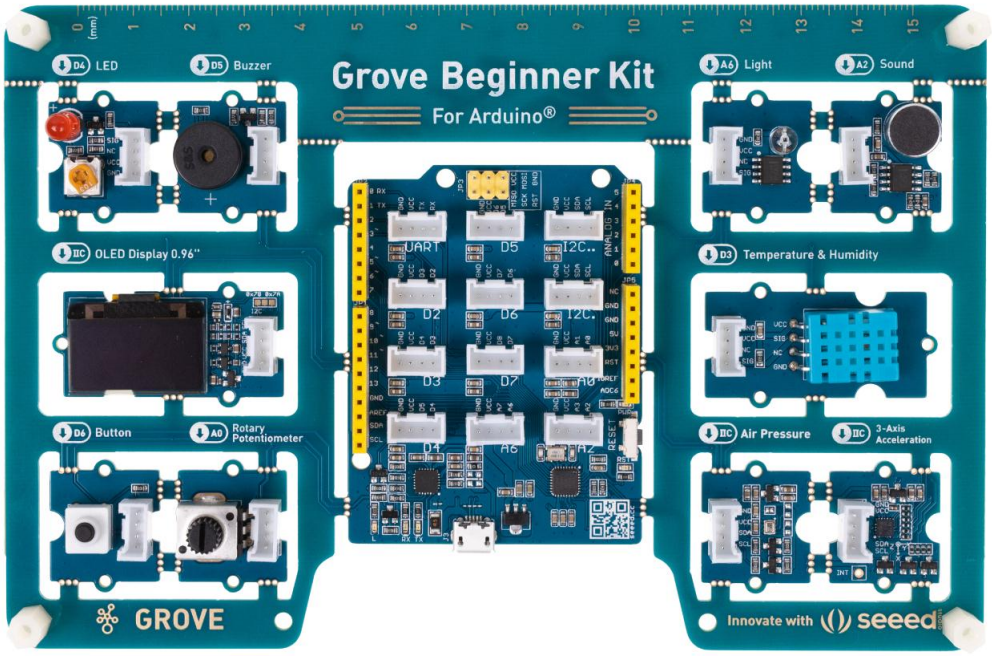


Grove Beginner Kit



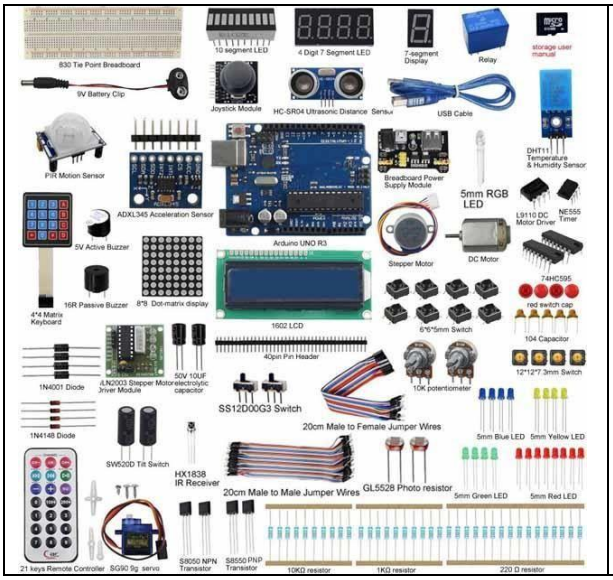
Summary :

Version du 10/11/2020 V1.0

1 Grove Beginner Kit card presentation»

Most people who want to learn programming on Arduino Uno use tutorials on the internet. These can be blogs or videos. Of course, you will have to buy some material in order to realize small projects that are not too complicated, such as

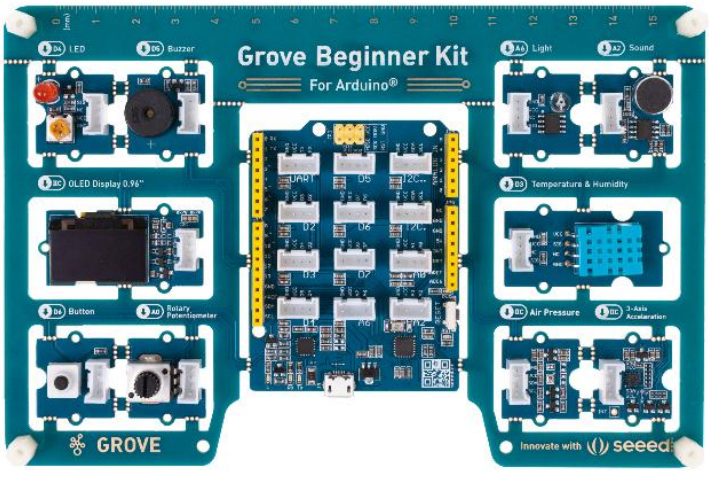
- Blinking a led;
- Generate a sound;
- Display text;
- Perform an action with a push button;
- Read a temperature, pressure, humidity;
- Detect a noise;
- Detect ambient light.



Initiation kits are available as shown in the photo opposite. But most of the time there is no documentation provided with this Kit. It is the user who will have to search for applications, design his wiring diagram, perform troubleshooting and finally implement the program.

Not that this kit is useless, but it is rather aimed at people who already have a good knowledge of the Arduino UNO and its applications.

Seeedstudio's Grove Beginner Kit environment is an "all-in-one" solution with a programming board compatible with an Arduino Uno and a set of sensors and displays already wired. The user only has to concentrate on the programming part while analyzing the links between the microcontroller and the 10 grove peripherals. It only takes a quarter of an hour to carry out the first programming.



The Kit is compatible with more than 300 Grove modules

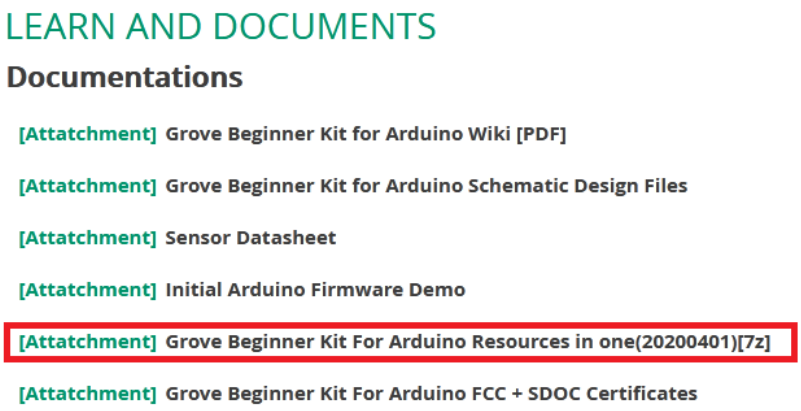
2 Download the Grove Beginner Kit documentation

The easiest way is to download the following document:

https://files.seeedstudio.com/wiki/Grove-Beginner-Kit-For-Arduino/res/Grove-Beginner-Kit-For-Arduino-Resources-in-one(20200401).7z

This compressed file contains all the necessary documentation for programming the card. The file is also accessible from the manufacturer's page.

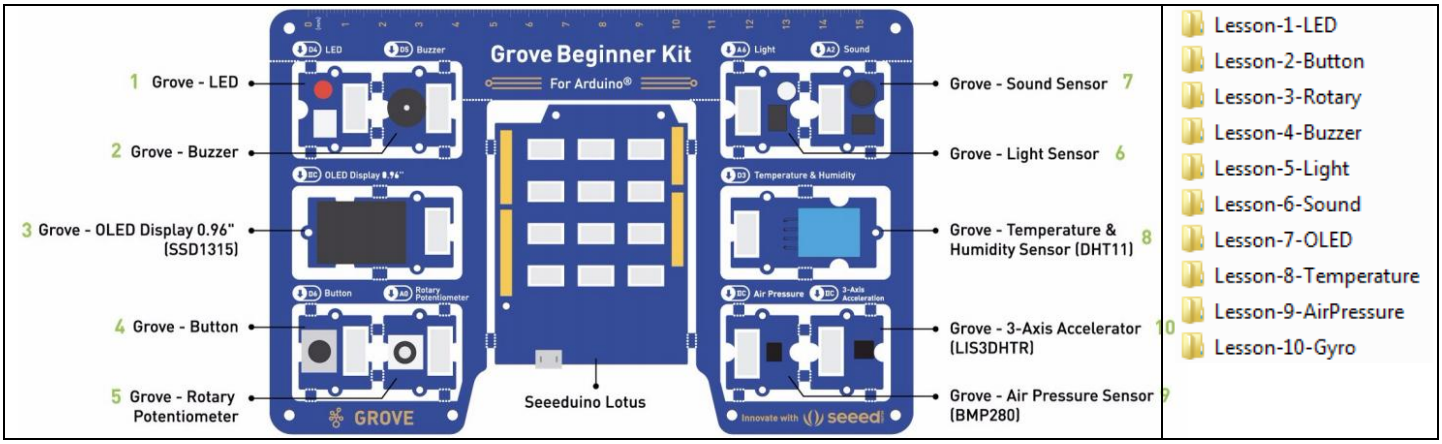
https://www.seeedstudio.com/Grove-Beginner-Kit-for-Arduino-p-4549.html



The unzipped file contains the following directories:

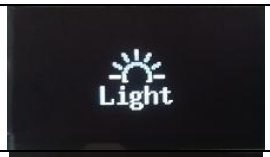
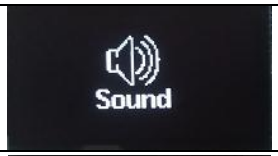
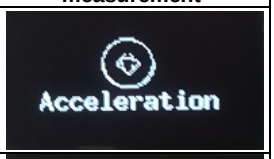
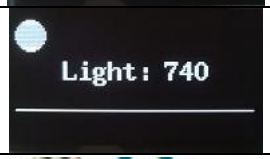
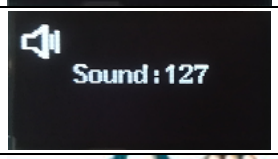
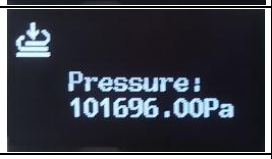
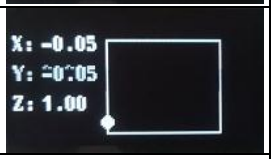
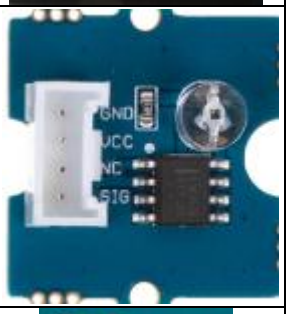
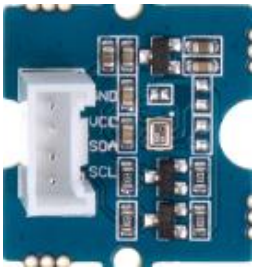
Arduino IDE	The Arduino idea for Windows, MAC os or Linux
Datasheet	The documentation of the integrated circuits used
Grove Beginner Kit for Arduino Schematic File	The board schematics in PDF format
Lesson	Examples of the different sensors ready for use
libraries	the libraries
More About Arduino and Seeed Product	Notes on Grove modules and the Arduino IDE
More about Open-Source Hardware	Notes on synchronous and asynchronous serial buses
Resources	Libraries again and demo program
Grove Beginner Kit For Arduino(CN).pdf	CN User's Manual
Grove Beginner Kit For Arduino.pdf	EN User's Manual (Read 1st)

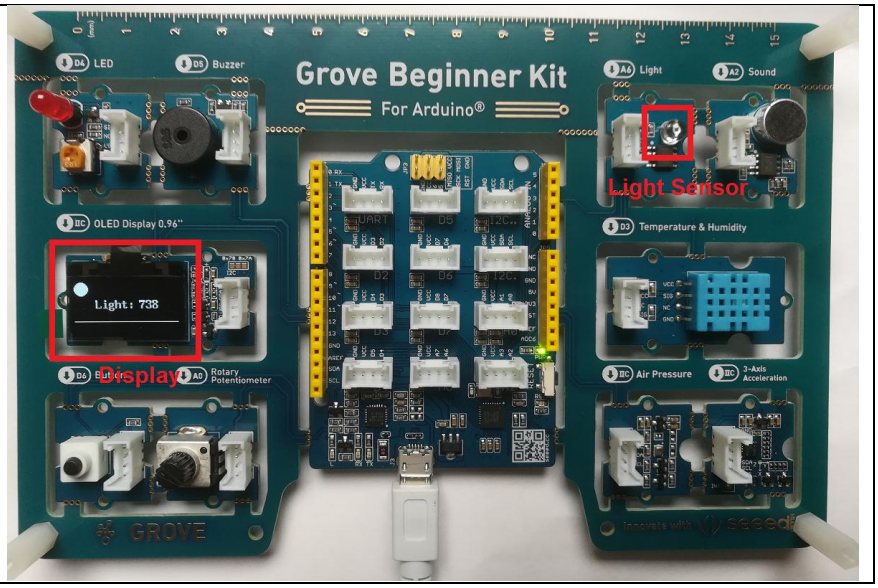
Each example program (1 to 10) described in the user manual is located in the Lesson directory. No risk of making a mistake.



3 Powering up the board and discovering the demo program

Connect a micro USB cable to a computer to immediately use the demo program managing all the sensors. Simply use the push button and the potentiometer to select one of the 5 menus as shown in the file "Grove Beginner Kit for Arduino.pdf" on page 6.

Light detection	Sound detection	Temperature and humidity reading	Air pressure reading	Acceleration measurement
				
				
				
A6 Light	A2 Sound	D3 Temperature & Humidity	IIC Air Pressure	IIC 3-Axis Acceleration

Example for light detection The light sensor is located at the top right (position 6) and uses the analog input A6	

4 Drivers and libraries Installation.

Under Windows 10 the driver will normally be installed automatically if the PC is connected to the internet. But for Windows 7, the driver will have to be installed manually, as indicated in the "Grove Beginner Kit For Arduino.pdf" file on page 7.

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

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	Download VCP (2.3 MB)	Download VCP Revision History

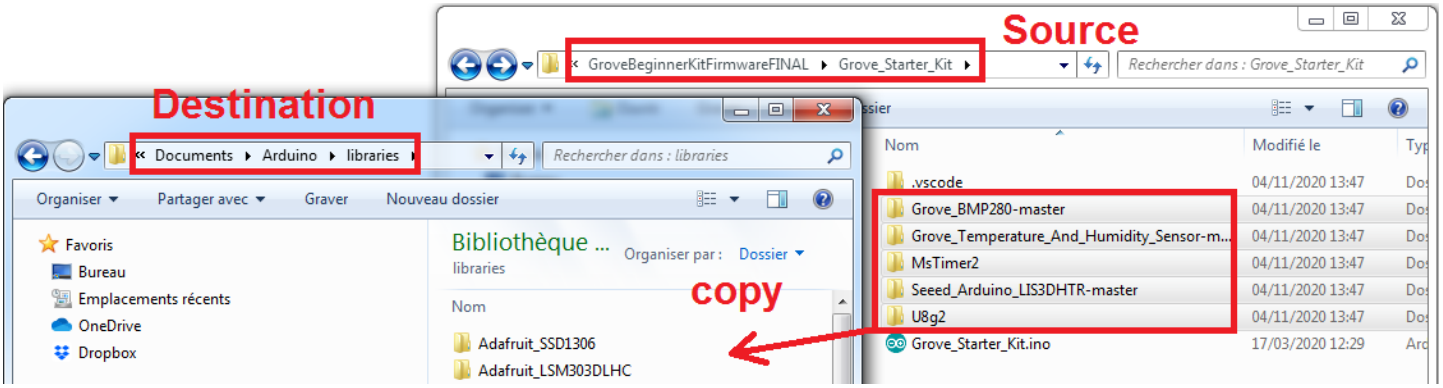
Download for Windows 7/8/8.1 (v6.7.6)

Platform	Software	Release Notes
Windows 7/8/8.1	Download VCP (5.3 MB) (Default)	Download VCP Revision History
Windows 7/8/8.1	Download VCP with Serial Enumeration (5.3 MB) Learn More »	Download VCP Revision History

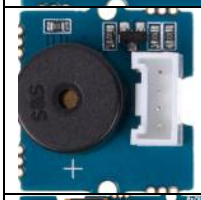
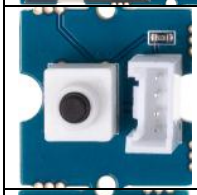
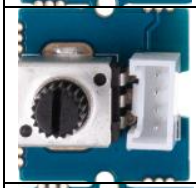
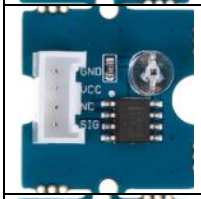
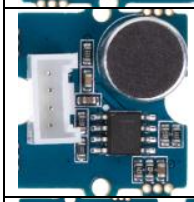
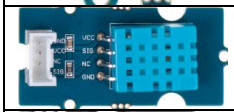
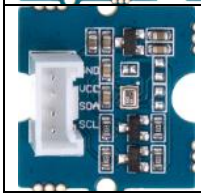
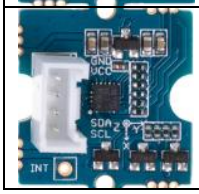
Install the IDE (integrated development environment) provided in the ZIP file or by downloading the latest version from the official website.

Downloads

The easiest way to install the libraries is to copy the contents of the "`Resources\GroveBeginnerKitFirmwareFINAL\Grove_Starter_Kit`" directory into the "libraries" directory of the Arduino Idea in "Documents" as shown in the screenshot below.



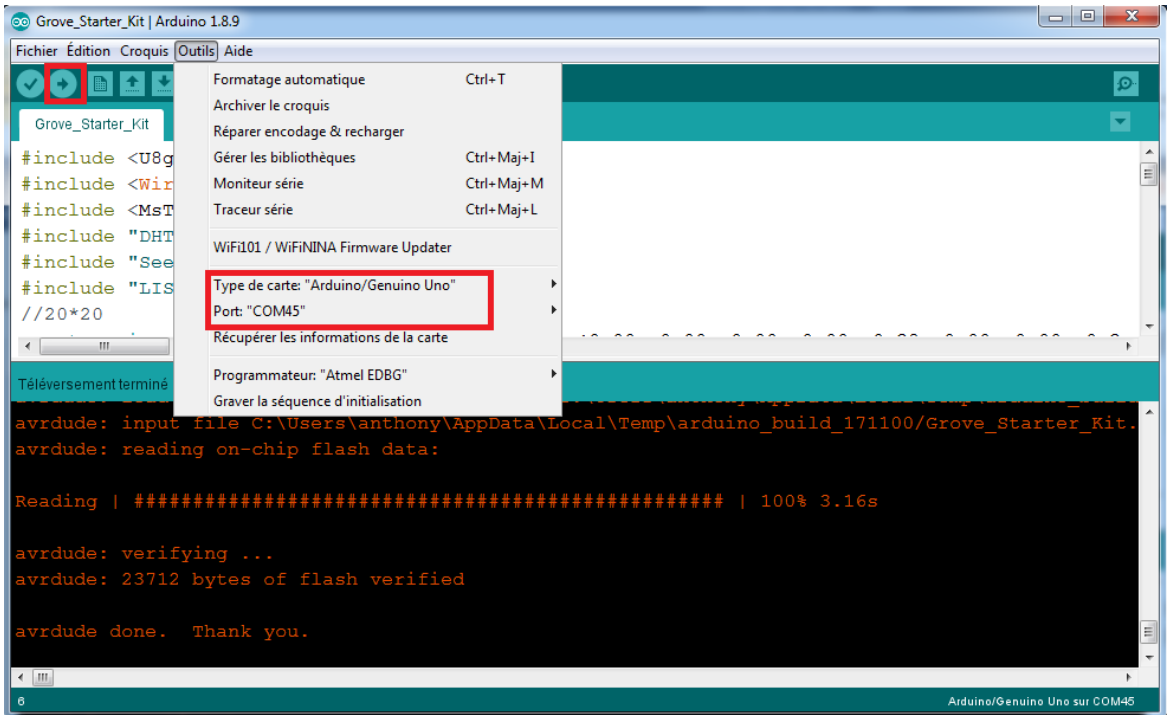
5 The 10 Grove Modules

Module		Entrée /Sortie	Broche	Documentation
	Red LED Active high level	Logic output	D4	Grove Beginner Kit for Arduino SCH.pdf
	Buzzer	PWM putput	D5	Grove Beginner Kit for Arduino SCH.pdf
	OLED Display 0.96"	I²C bus	A4/A5	Grove Beginner Kit for Arduino SCH.pdf
	Button Active high level	Logic input	D6	Grove Beginner Kit for Arduino SCH.pdf
	Analog Potentiometer	Analog Input	A0	Grove Beginner Kit for Arduino SCH.pdf
	Light sensor	Analog Input	A6	Grove Beginner Kit for Arduino SCH.pdf
	Sound sensor	Analog Input	A2	Grove Beginner Kit for Arduino SCH.pdf
	Temperature & Humidity	Logic input	D3	DHT11-Technical-Data-Sheet.pdf
	Air Pressure sensor BMP280	I²C bus	A4/A5	Grove-Barometer_Sensor-BMP280.pdf
	3-Axis Accelerator sensor	I²C bus	A4/A5	LIS3DHTR datasheet.pdf

6 First test

Before trying the different programs in the "lesson" folder, first recompile the demo program provided. This allows you to validate the installation of the libraries.

The Grove_Starter_Kit.ino demo program is located in the `\Resources\GroveBeginnerKitFirmwareFINAL\Grove_Starter_Kit`



7 Additional programs

For now, I have added 4 additional programs in my Github using the "Grove Beginner Kit" card.

Program name	Task
`test_1_bp_led_rotary_buzzer.ino`	Triggers a noise when the push button is pressed and briefly flashes the led.
`test_2_alarm_light.ino`	Triggers an alarm if the light falls below a certain threshold
`test_3_clap.ino`	Lights a led when you clap your hands.
`test_4_oled.ino`	Display " hello " with 3 fonts

8 Conclusion

The "Grove Beginner Kit" card is very easy to handle. The documentation of the guide "Grove Beginner Kit for Arduino.pdf" is self-explanatory. It is possible to carry out a multitude of projects and tests with this map. A beginner who wants to learn how to program Arduino will find a solution that is easy to implement. The length of the microUSB cable supplied with the kit is far too short.