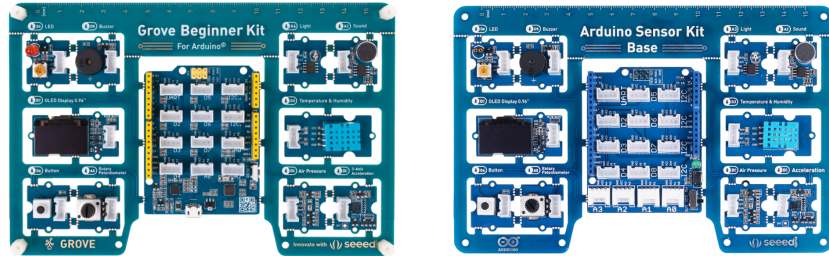# Introduction to the Arduino Sensor Kit & the difference with Grove Beginner Kit

Half a year ago, we released the Grove Beginner Kit for Arduino. It has been sold to more than 70 countries and regions around the world, has been adopted by hundreds of schools and educational institutions, and has served tens of thousands of students and teachers.

We are now proud to announce the upcoming release of the **Arduino Sensor Kit - Base**, a joint production between Seeed and Arduino. This is an official Arduino kit and will be sold on the Arduino.cc website.

The Arduino Sensor Kit is an Arduino UNO shield kit based on the Grove Beginner Kit. It has the exact same module and almost the same usage as the Grove Beginner Kit. It retains the advantages of the Grove Beginner Kit, without soldering, breadboards, or even wiring!

10 Sensors/Modules Included

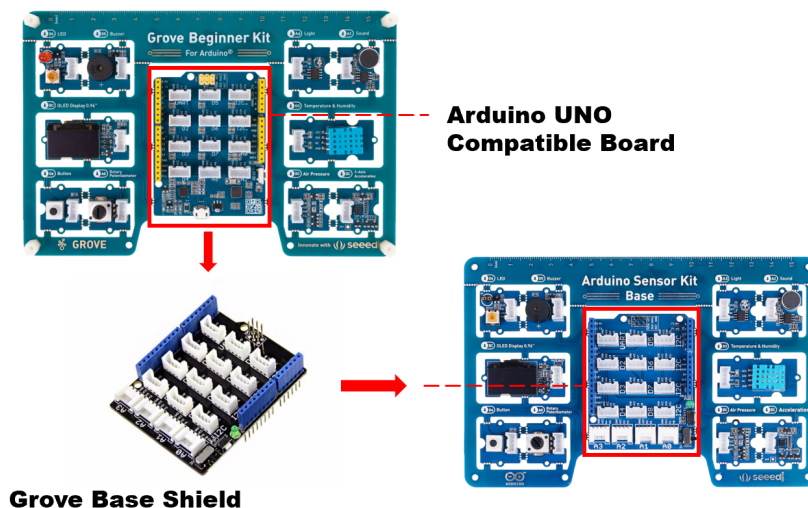Both Arduino Sensor Kit and Grove Beginner Kit have the same 10 pre-wired modules.

1. **Grove - LED:** Simple LED module
2. **Grove - Buzzer:** Piezo Buzzer
3. **Grove - OLED Display 0.96":** 128×64 dot resolution High brightness,self-emission and high contrast ratio Big screen on a compact design Low power consumption.
4. **Grove - Button:** Momentary Push Button
5. **Grove - Rotary Potentiometer:** Adjustable Potentiometer
6. **Grove - Light:** Detects surrounding light intensity
7. **Grove - Sound:** Detects surrounding sound intensity
8. **Grove - Temperature & Humidity Sensor:** Detects surrounding temperature and humidity values
9. **Grove - Air Pressure Sensor:** Detects surrounding atmospheric pressure
10. **Grove - 3-Axis Accelerator:** Detects object acceleration

So what are the differences between the Arduino Sensor Kit and the Grove Beginner Kit?

The Major Difference

Well, they look alike, but they are very different: the new Arduino Sensor Kit need to work with Arduino UNO while the Grove Beginner Kit can work alone.

- The Grove Beginner Kit is a kit with Arduino Compatible Control Board(Seeeduino Lotus-compatible with Arduino UNO). So customers do not need to buy an Arduino Board separately.
- The Arduino Sensor Kit replace the Lotus board with Grove Base shield.

Grove Base Shield

So the new Arduino Sensor Kit need to work with an Arduino UNO board or an Arduino compatible board. All you have to do is plug the kit into the Arduino board header, then just coding!
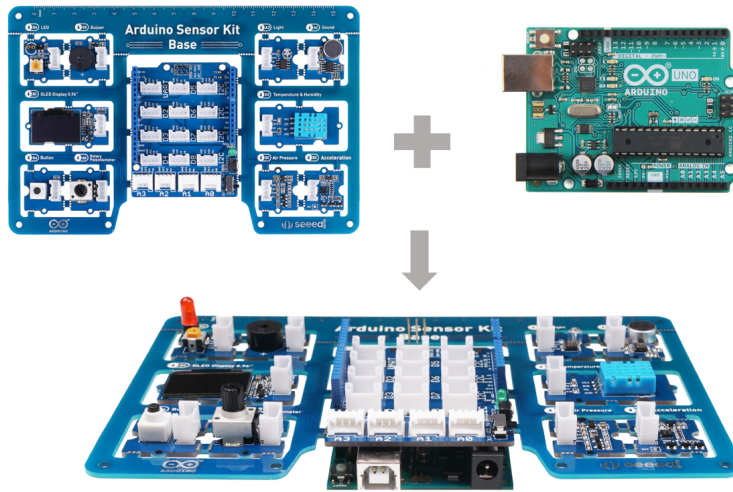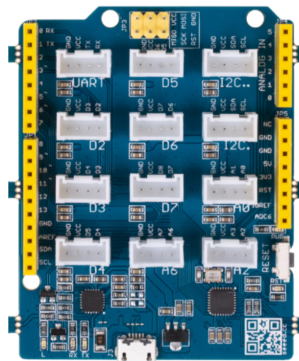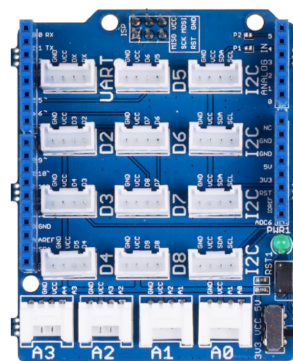
Other Difference

Grove Connector

The Grove Beginner Kit has 12 Grove connectors on the Lotus board while the Arduino Sensor Kit has 16 Grove connectors on the base shield.

Grove Beginner Kit   **Arduino Sensor Kit**

The Grove connector in the center of the board has a different pin number and layout.

PORT	GROVE BEGINNER KIT	ARDUINO SENSOR KIT
Digital	D2,D3,D4,D5,D6,D7	D2,D3,D4,D5,D6,D7,D8
Analog	A0,A2,A6	A0,A1,A2,A3
I2C	2	4
UART	1	1

LED with PWM

The LED modules in the Grove Beginner Kit connected to the D4 pin of Arduino, which doesn't support PWM function, so users can't use PWM to control the brightness of LED. In the Arduino Sensor Kit, we exchanged the pins of the LED module and the button module. The LED is connected to the

D6 pin, which supports PWM.

KITS/MODULES	GROVE LED PIN	GROVE BUTTON PIN	LED PWM
Arduino Sensor Kit	D6	D4	Support
Grove Beginner Kit	D4	D6	Don't support

Pin Map

In the Grove Beginner Kit, the Light Sensor is connected to the A6 pin. However, since there is no pin A6 on the Arduino UNO, we connect the Light Sensor to pin A3 in the Arduino Sensor Kit.

The pin map for the two Kit's are as follows:

MODULES	PORT TYPE	GROVE BEGINNER KIT PINS	ARDUINO SENSOR KIT PINS
LED	Digital	D4	D6
Buzzer	Digital	D5	D5
OLED Display 0.96"	I2C	I2C	I2C
Button	Digital	D6	D4
Rotary Potentiometer	Analog	A0	A0
Light Sensor	Analog	A6	A3
Sound Sensor	Analog	A2	A2
Temperature & Humidity Sensor	Digital	D3	D3
Air Pressure Sensor	I2C	I2C	I2C
3-Axis Accelerator Sensor	I2C	I2C	I2C

Reset Button

We have used a new encapsulated reset button in the Arduino Sensor Kit to make it easier for the user to press.