

# Preface – Getting Started

Welcome to the world of Grove! Grove is a collection of various modular sensors and actuators that help you dive in and enjoy the electronics world with ease. Before we discuss our Grove modules in detail, we want to outline some basic tools and preparatory steps that you will need to complete first.

For more information go to: [www.seeedstudio.com](http://www.seeedstudio.com)

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# 1. What is Arduino?

Arduino is a flexible and easy-to-learn open source, development platform that is very popular among makers, hobbyists, and interactive artists. It ignited the maker movement and enabled people to bring to life tons of creative projects. It also sparked a collaborative community that provides a supportive environment and thrives on further development and innovations, like our Grove system. Moreover, Arduino is the backbone of our Grove system and is the programming environment that will be used to enable your Grove modules.

To get started, you will need to purchase an Arduino, if you haven't already. Arduino and its clones are available on countless websites and can even be found in retail stores. You can buy them at the official [Arduino site](#) or follow the links on that site to purchase them from distributors, like Seeed Studio. Google search will turn up other options, as well.

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## 2. Arduino IDE Installation

Arduino IDE (integrated development environment) is C/C++ based developmental programming software for the Arduino board. After purchasing your Arduino, you will need to install the Arduino IDE on your computer. The IDE can be installed on Mac OS X, Windows XP, Windows Vista, Windows 7, and various Linux operating systems. Installation instructions are broken down by operating system and sometimes more detailed instructions are provided for a specific Arduino model. Thankfully the Arduino team provides us a detailed installation guide for most environments: <http://arduino.cc/en/Guide/HomePage>.

 

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### Getting Started with Arduino

**Introduction:** What Arduino is and why you'd want to use it.

**Installation:** Step-by-step instructions for setting up the Arduino software and connecting it to an Arduino Uno, Mega2560, Duemilanove, Mega, or Diecimila.

- + [Windows](#)
- + [Mac OS X](#)
- + [Linux](#) (on the playground wiki)

**Environment:** Description of the Arduino development environment and how to change the default language.

**Libraries:** Using and installing Arduino libraries.

Instructions for other boards:

- + [Arduino BT](#)
- + [Arduino Due](#)
- + [Arduino Fio](#)
- + [Arduino Leonardo and Micro](#)
- + [LilyPad Arduino](#)
- + [Arduino Mini](#)
- + [Arduino Nano](#)
- + [Arduino Pro](#)
- + [Arduino Pro Mini](#)
- + [Ethernet shield](#)

## 3. Language Reference

What if you are unfamiliar with the programming language? The Arduino team provides a well thought-out, comprehensive web site that breaks down the commands into three different categories: structure, variables and functions. Each command is explained in simple terms and illustrated with sample code. In fact, the easiest way to learn Arduino is to start with the sample code and then modify for your specific needs. For more information please see <http://arduino.cc/en/Reference/HomePage>.

 

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### Language Reference

Arduino programs can be divided in three main parts: *structure*, *values* (variables and constants), and *functions*.

#### Structure

- + [setup\(\)](#)
- + [loop\(\)](#)

#### Control Structures

- + [if](#)
- + [if...else](#)

#### Variables

##### Constants

- + [HIGH](#) | [LOW](#)
- + [INPUT](#) | [OUTPUT](#) | [INPUT\\_PULLUP](#)
- + [true](#) | [false](#)
- + [integer constants](#)

#### Functions

##### Digital I/O

- + [pinMode\(\)](#)
- + [digitalWrite\(\)](#)
- + [digitalRead\(\)](#)

##### Analog I/O

- + [analogReference\(\)](#)

**Now you are ready to explore the world of Grove!**

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