

Why Arduino?

Arduino simplifies the process of working with microcontrollers:

Simple, clear programming environment

The Arduino programming environment, based on the Processing programming environment, is easy-to-use for beginners, yet flexible enough for advanced users.

Cross-platform

The Arduino software runs on Windows, Macintosh OSX, and Linux.

Inexpensive

The most popular Arduino costs about \$30.

Open source and extensible software

The Arduino software (C/C++) is entirely open sourced, allowing for study, modification, and extension.

Open source and extensible hardware

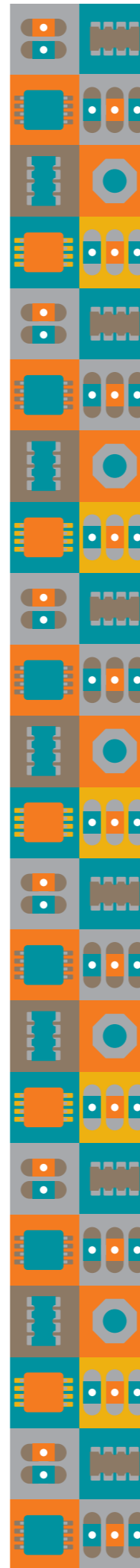
Arduino hardware (based on Atmel's microcontrollers [ATMEGA328, ATMEGA32u4, ATMEGA2560 and ARM SAM3X]) is entirely open sourced, allowing for study, modification, and extension.

Arduino Community

The Arduino community is wide, diverse, and supportive. Experts and novices share their knowledge and skills in numerous online sites anchored by the Arduino Forum and Playground. You will find numerous hardware and software examples, contributed libraries, interesting applications, inspiring projects, and clever tricks.

Who is using Arduino?

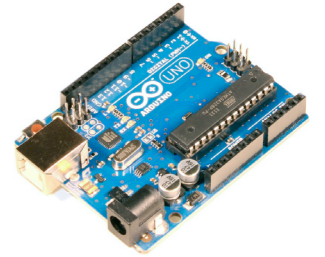
Perfect for rapid prototyping and for realizing interactive projects, Arduino is used by designers, engineers, scientists, artists, hobbyists, students, musicians and even children, in grade schools and universities, design studios and museums. It is estimated that there are over half a million Arduino boards in use in over 34 countries.



Arduino Family

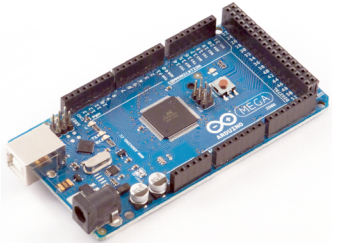
UNO

This is the most popular Arduino board. It connects to a computer with a standard USB cable so that it can be programmed using the free Arduino development environment. Arduino can be extended with a variety of accessory boards called shields, enabling features such as wireless communication, GPS, audio, motor control and data storage.



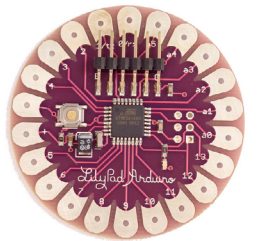
MEGA

Arduino Mega 2560 offers extended connectivity. It has all the same features as the Uno, but 8 times the memory and more than triple the number of input and output.



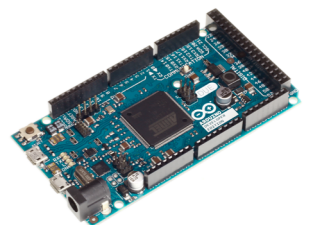
LILYPAD

The LilyPad Arduino is a microcontroller board designed for wearables projects and e-textiles. It can be sewn into fabric and connected to similarly mounted power supplies, sensors and actuators using conductive thread.



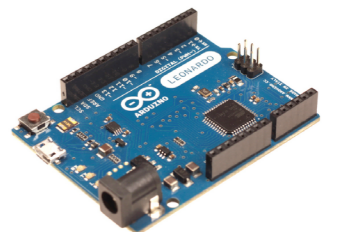
DUE

The Arduino Due is the new member of our family of boards. It's our first product based on a 32 bit ARM microcontroller that upgrades all the standard Arduino functionalities and adds many new features.



LEONARDO

The Arduino Leonardo is an Arduino microcontroller board based on the flexible ATmega32u4 processor. The Leonardo differs from all preceding boards in that the ATmega32u4 has built-in software defined USB communication, eliminating the need for a secondary processor and reducing the price. The Leonardo differs from all preceding boards in that it can be programmed to emulate an USB mouse or keyboard, in addition to the usual virtual serial port. The Leonardo is sold with or without headers.



How do I use Arduino?

Even before you buy your Arduino, you can download, install, and explore the development environment from <http://arduino.cc/en/Main/Software>. Included are numerous examples illustrating the capabilities of the hardware and software.

For more information visit:

Arduino website <http://www.arduino.cc>

Arduino Playground <http://arduino.cc/playground>

Arduino Forum <http://arduino.cc/forum>

Physical Computing at NYU Tisch ITP <http://itp.nyu.edu/physcomp>

Educational References

Getting Started with Arduino by Massimo Banzi [O'Reilly Media / Make, 2011].

Getting Started with Processing by Casey Reas and Ben Fry [O'Reilly Media / Make, 2010].

Making Things Talk, 2nd Edition by Tom Igoe [O'Reilly Media / Make, 2011].

Learning Processing: A Beginner's Guide to Programming Images, Animation, and Interaction by Daniel Shiffman [Morgan Kaufman, 2009].

Getting Started with RFID by Tom Igoe [O'Reilly Media / Make, 2012].

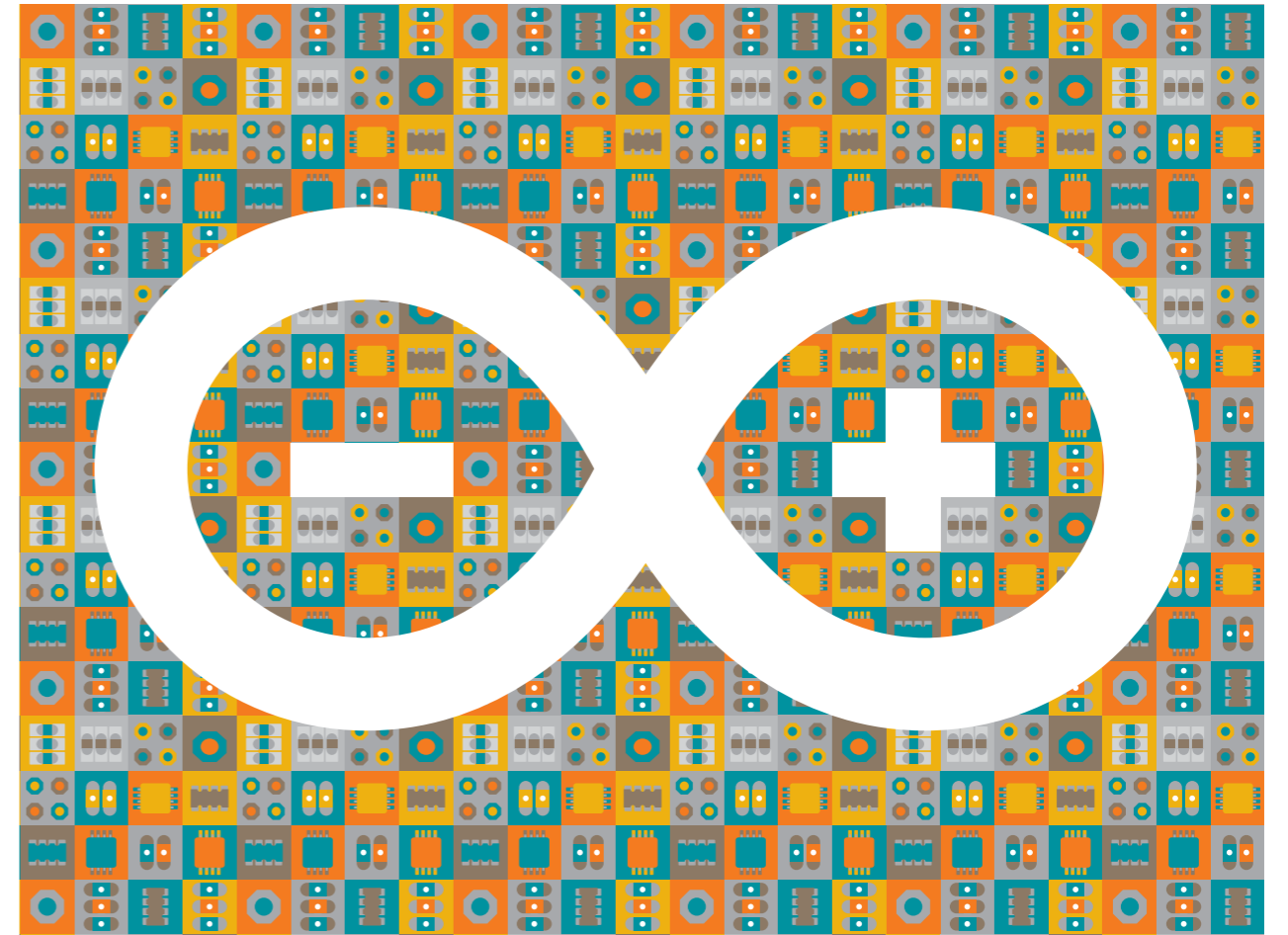
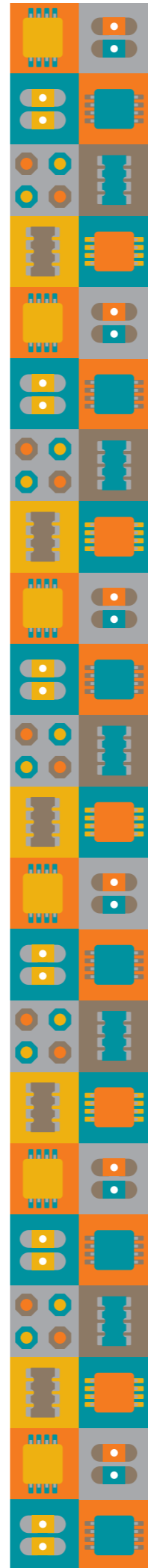
The Arduino Cookbook, 2nd Edition by Michael Margolis [O'Reilly Media / Make, 2011].

Making Things Move: DIY Mechanisms for Inventors, Hobbyists, and Artists by Dustyn Roberts [McGraw-Hill, 2010].

Make: Electronics, by Charles Platt [O'Reilly Media / Make, 2009].

iOS Sensor Apps with Arduino, by Alasdair Allan [O'Reilly Media / Make, 2011].

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What is Arduino?

Arduino is a tool for making interactive objects that can sense and control the physical world. It's an open-source physical computing platform based on a simple microcontroller board and a simple development environment for writing the software to control the board. Arduino can take inputs from a variety of switches or sensors and controlling a variety of lights, motors, and other physical outputs. Arduino can be used for stand-alone projects, and can also be used to communicate with software running on your computer.

Over the years Arduino has been used as the "brain" in thousands of projects, one more creative than the next. A world-wide community of makers has gathered around this open-source platform, moving from personal computing to personal fabrication, and contributing to a new world of participation, cooperation and sharing.