



Arduino Maker Kit

Guide

Arduino is an open-source electronics platform based on easy-to-use hardware and software. Arduino boards are able to read inputs — light on a sensor, a finger on a button, or a Twitter message — and turn it into an output — activating a motor, turning on an LED, publishing something online. You can tell your board what to do by sending a set of instructions to the microcontroller on the board.

The DuinoKit was designed to make building Arduino projects fun and easy with no soldering. Components are built into the printed circuit board for easy identification and use "plug and play" connectors. This kit includes documentation and instructions complete with components and wires to build unlimited projects for hours of fun and learning. Build a "Simon" game, lie detector, alarm clock, or your own creation.

Starting Out

You will need your own computer, and if this is your first time working with Arduino, you will need to install the programming environment from one of these two sources:

Arduino.cc is the standard programming environment. Under the Software —> Downloads link, look for the program installer and instructions for your operating system.

Create.arduino.cc offers a simple browser-based platform with pre-installed drivers and online program uploading and storage for your projects.

After installing the Arduino software (IDE), be certain to select "Arduino Nano" for the board type and the "ATmega328" for the processor. You will also need to select the port number that is created when you plug in your Arduino chip using the provided USB cable.

Using the DuinoKit

The *DuinoKit Essentials Mission Discovery Learning Manual* includes 20 different Arduino projects you can build. These start from the very basic — like turning an LED

on and off — and progressively get more complex. All of these project codes (or “sketches”) are available to copy/paste from the “Show and Tell” portion of the DuinoKit website here:

duinokit.com/store/showandtell

We’ve included 40 jumper wires of various lengths for you to use in building your projects. Follow the wiring diagram for each mission, connecting the wires as shown. (Note: the colors of the wires do not matter. Use whatever lengths are required to reach between your connection points.) Once your jumper wires are connected, connect the Arduino Nano board to your computer with the provided USB cable. Open the Arduino IDE program on your computer, then copy and paste the code or “sketch” for the mission from the DuinoKit “Show and Tell” forum linked above. Verify your sketch and then upload to the Arduino by pressing the arrow key on the tool bar or going to the File Menu and clicking Upload. Each mission includes additional challenges to test you.

Troubleshooting

If your sketch is producing errors when trying to compile and/or upload, you may need to install a module library that will instruct the Arduino how to handle certain data inputs or outputs. These library files can be found online at either the DuinoKit “Show and Tell” forum or at: arduino.cc/en/reference/libraries

You may also contact the Reference Desk at cvref@wcpl.lib.oh.us.

Feedback

We would love to hear how your experience was! Please complete this survey:

<http://goo.gl/forms/CuU9efutyX>

Also, feel free to share your experience with us on social media:

<https://www.facebook.com/wclibrary.info>

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