Class 2. Arduino and LED's

- 1. What is an Arduino?
- 2. Some examples
- 3. Intro to Arduino and our first program

BREAK

4. Setting up a Breadboard





1

INTRO to Arduino:

Turn on the LED and make it blink!



Step 1. Download Arduino software

A. Go to the Arduino Software Download page:

http://www.arduino.cc/en/Main/Software



Download the Arduino Software

The open-source Arduino environment makes it easy to write code and upload it to the i/o board. It runs on Windows, Mac OS X, and Linux. The environment is written in Java and based on Processing, avr-gcc, and other open source software.

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Download

Arduino 0022 (release notes), hosted by Google Code:



Next steps

Getting Started Reference Environment Examples Foundations FAQ

B. Click OK!

0 0	Opening arduino-0022.dmg
You have cho	sen to open
📄 arduino-0	022.dmg
which is a:	dmg File
from: http:	://arduino.googlecode.com
What should	Firefox do with this file?
Onenwi	th Change
Openwi	(in Choose)
• Save File	2
🗌 Do this a	automatically for files like this from now on.
	Cancel OK

CLICK HERE on Mac OS X

C. Follow the prompts

to put Arduino in the Applications folder....



D. Open up the Arduino program



E. You should see something like this:



Insert the longer leg of the LED into pin 13 on the Arduino.

Insert the shorter leg of the LED into the pin labelled "GND" on the Arduino.



Step 3. Program the board

A. Plug in Arduino to the computer using the USB cord



B. SELECT CHIP In Arduino, select: Tools ----> Board ----> Arduino Duemilanove



C. SELECT PORT Select Tools ----> Serial Port ----> and click the TOP OPTION (it should be something "dev.tty.usbmodemfd131")







E. VERIFY (check for mistakes)

Click the PLAY button

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F. UPLOAD Click the Arrow pointing right



And your LED should be blinking!!



Now, let's make it blink faster!

Step 4. Change the blink speed



See that I changed the number after "delay(...)"

```
Before it said delay(1000)
```

```
now it says delay(500)
```

```
void loop() {
    digitalWrite(13, HIGH); // set the LED on
    delay(500); // wait for a second
    digitalWrite(13, LOW); // set the LED off
    delay(500); // wait for a second
}
```

This means that instead of delaying 1 second it will delay for half a second (it blinks twice as fast!)

(NOTE: 1000 in Arduino language means 1000 milliseconds. 1 second = 1000 milliseconds!) Now that you have MODIFIED the BLINK sketch, go ahead and save it.



THEN:

VERIFY and UPLOAD it again (first press PLAY, then press the Right Arrow)

CHALLENGE:

NOW ... Try to SLOW DOWN the blink!



We've just finished our first lesson in Arduino!

In this lesson, we learned:

- about the Arduino language
- how to modify a sketch
- how to upload a sketch to Arduino
- how to blink an LED at different speeds

NEXT LESSON: Using the breadboard, and an on / off switch