Class 2. Arduino and LED's

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



1

BREAK

4. Setting up a Breadboard



Microcontrollers in Everyday Life



SLIDING DOORS



METROCARD KIOSKS





INTRO to Arduino:

Turn on the LED and make it blink!

WHAT YOU NEED

LED

ARDUINO

USB





Step 1. Download Arduino software

A. Go to the Arduino Software Download page:

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



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By downloading the software from this page, you agree to the specified terms.

Download

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

CLICK HERE on Mac OS X

- + Windows
- + Mac OS X
- + Linux: 32 bit, 64 bit
- source



Next steps

Getting Started Foundations FAQ

B. Click OK!

0 0	Opening arduino-0022.dmg
You have che	osen to open
🗟 arduino-0	022.dmg
which is a:	dmg File
from: http	://arduino.googlecode.com
What should	Firefox do with this file?
Open w	ith Choose
• Save File	e
Do this	automatically for files like this from now on.
	Cancel

C. Follow the prompts

to put Arduino in the Applications folder....



Congratulations!

You've installed Arduino!

D. Open up the Arduino program



E. You should see something like this:



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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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	Note: The set of the two seconds, then off for one second, reperiently.	
	Two example code to its line pathin density.	
	2 Control to a digital per un un calque. 27 est p Tour a (2) consolitat in anti exclusive baselies processing an antibio series in active baselies.	
	 March 1991 (2014)	
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	tore catalog	
	inny simily size: Willipps (of a 1076 lpin method)	
Λ		
It says "Do	one compiling".	

F. UPLOAD Click the Arrow pointing right



And your LED should be blinking!!



Now, let's make it blink faster!



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