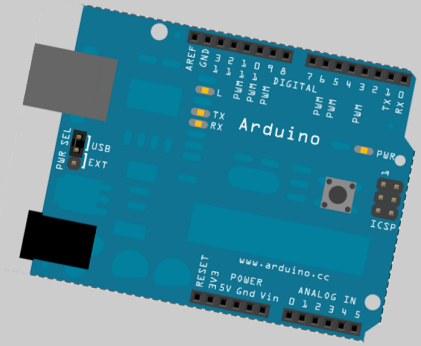
# Class 2. Arduino and LED's






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

BREAK

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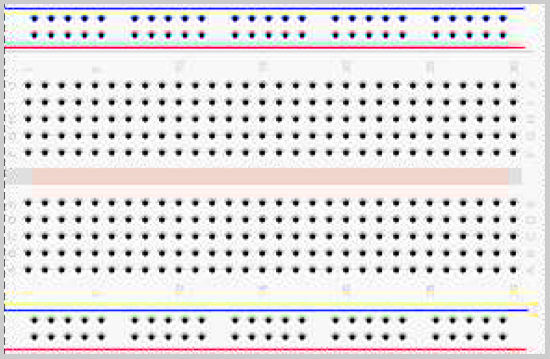
4. Setting up a Breadboard

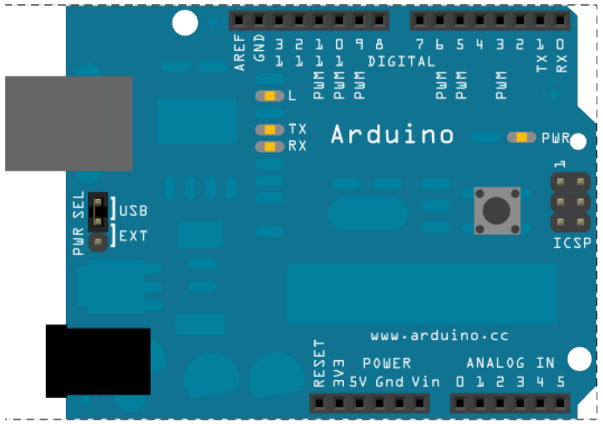


# INTRO to Arduino:

Turn on the LED and make it blink!

## WHAT YOU NEED

ARDUINO

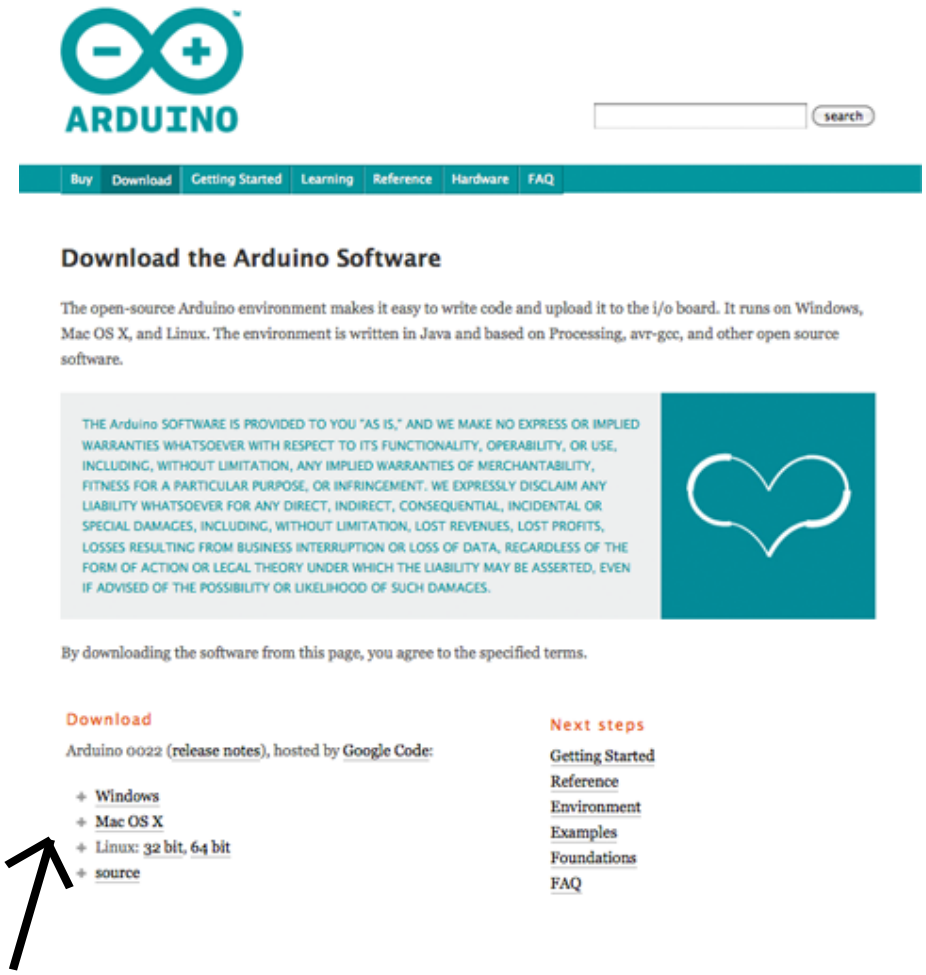



LED

USB

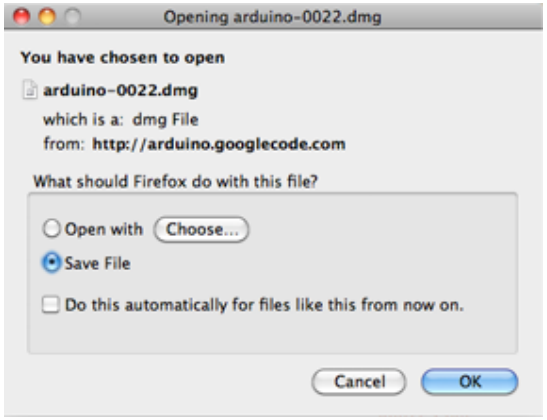
A. Go to the Arduino Software Download page:

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




CLICK HERE on Mac OS X

B. Click OK!



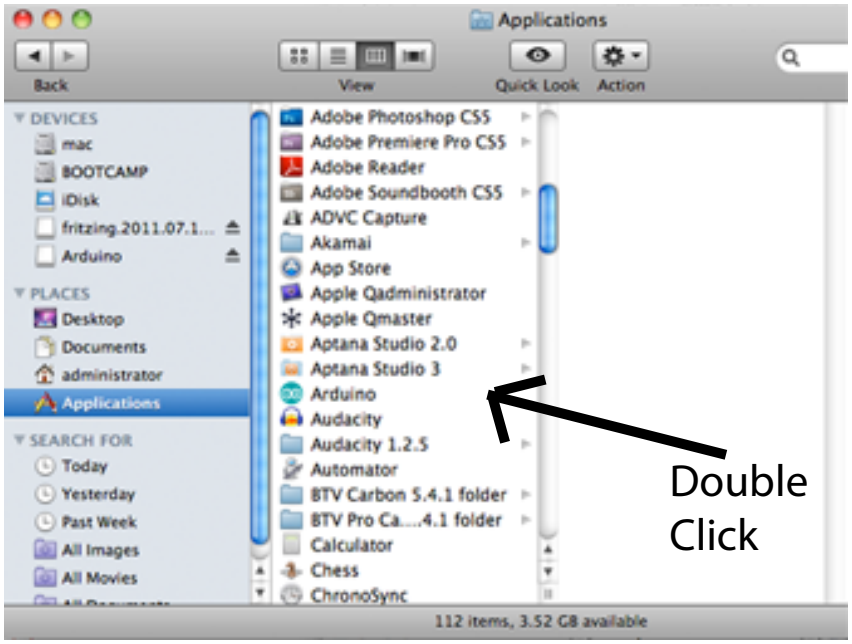
C. Follow the prompts

to put Arduino in the Applications folder....

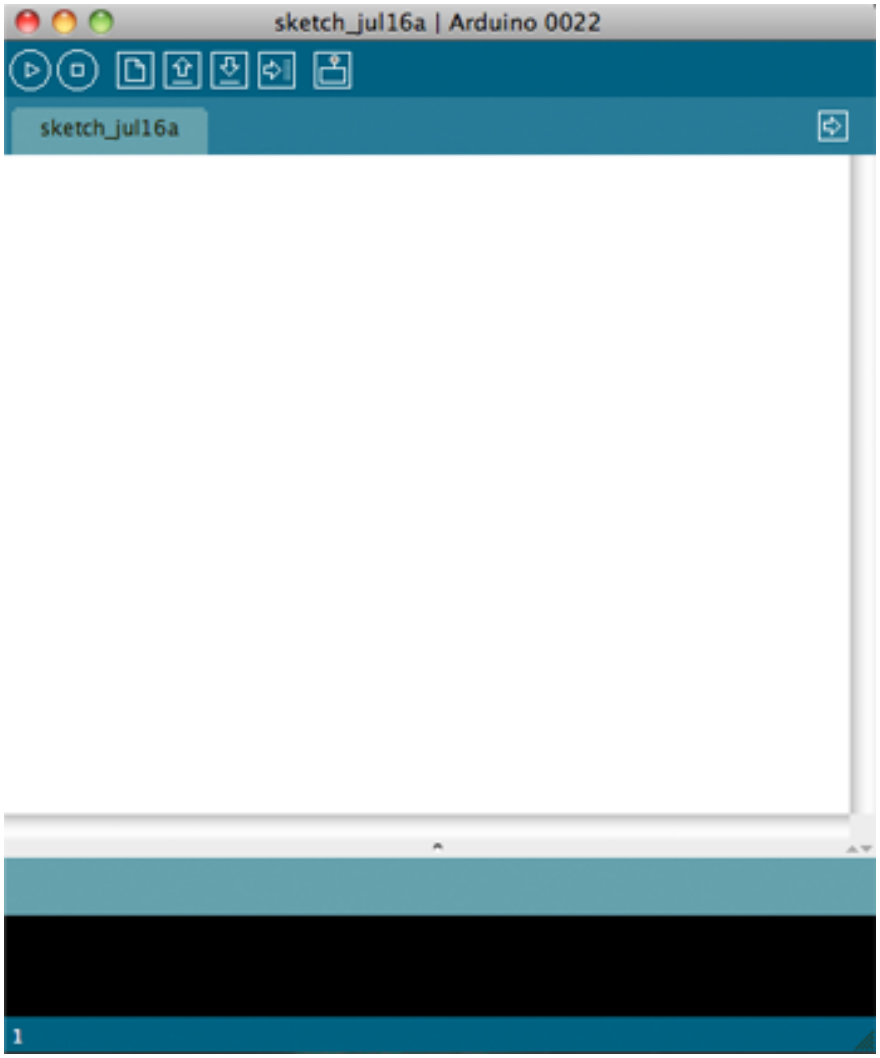

Congratulations!

You've installed Arduino!

D. Open up the Arduino program



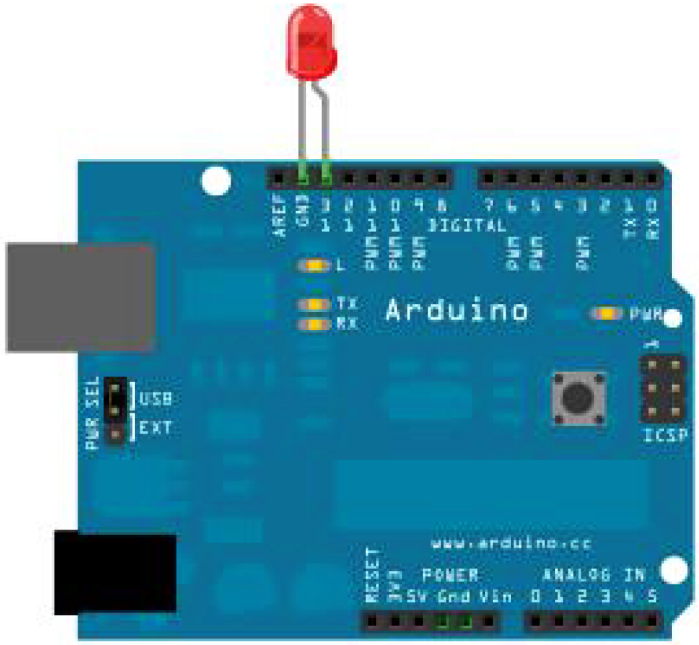

E. You should see something like this:



Step 2. Setup the Arduino board

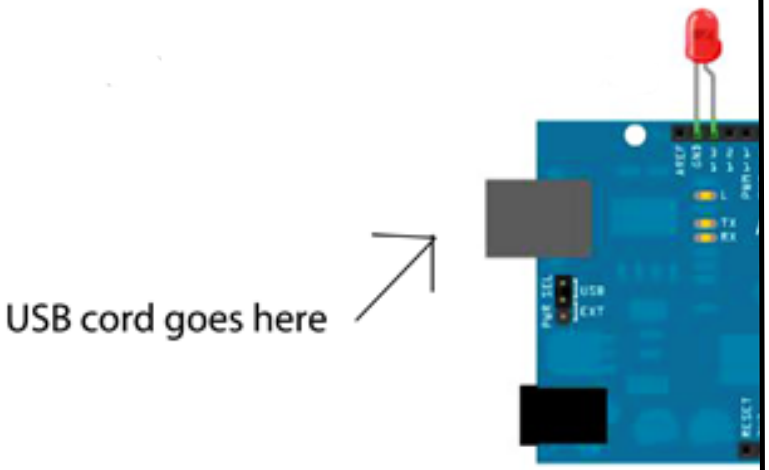
Insert the longer leg of the LED into pin 13 on the Arduino.

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



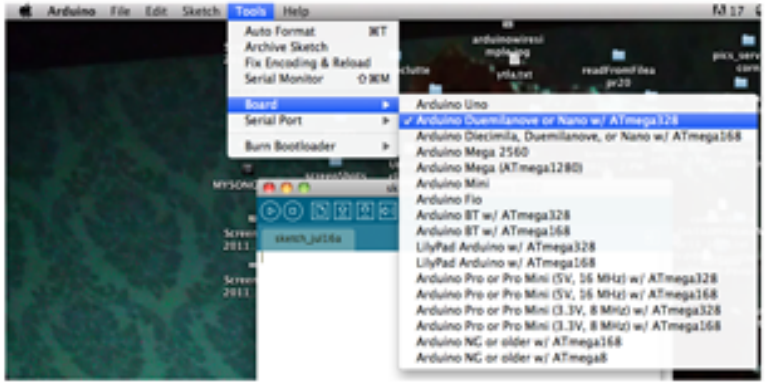
# Step 3. Program the board

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



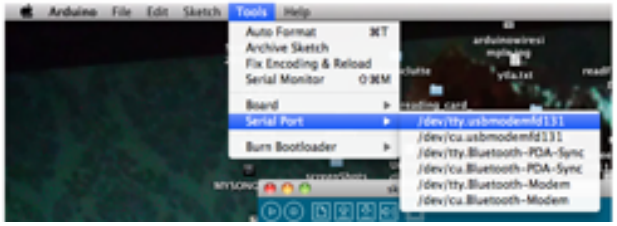

## B. SELECT CHIP

In Arduino, select: Tools ----> Board ----> Arduino Duemilanove




## C. SELECT PORT

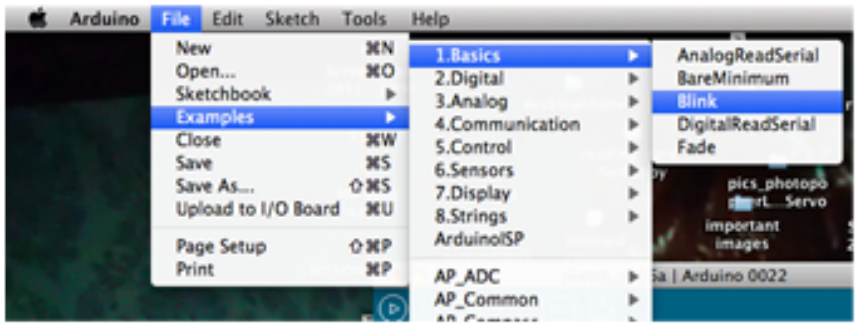
Select Tools ----> Serial Port ----> and click the TOP OPTION
(it should be something "dev.tty.usbmodemfd131")



Now you are ready to program!

D. OPEN BLINK SKETCH

Click on File ----> Examples ----> Basics ----> Blink




this window will open

E. VERIFY (check for mistakes)

Click the PLAY button

It says "Done compiling".

F. UPLOAD

Click the Arrow pointing right

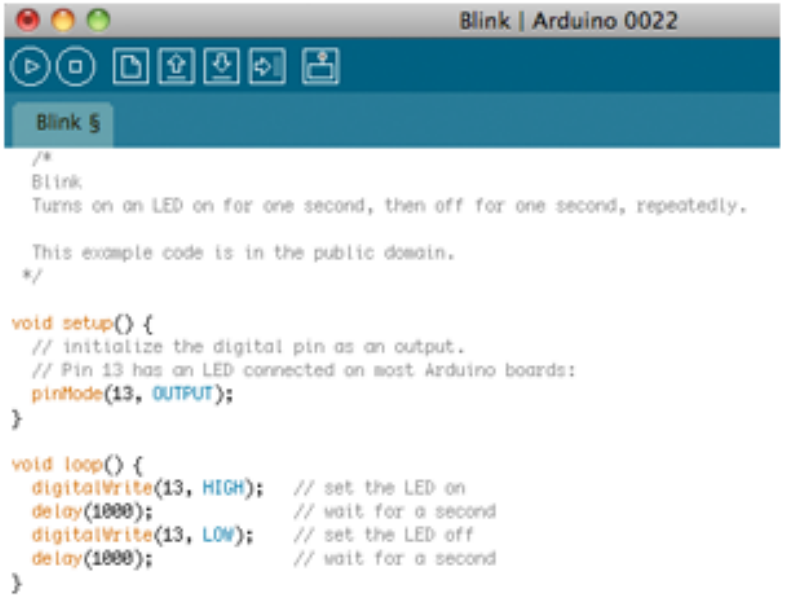
It says "Done uploading"...

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)

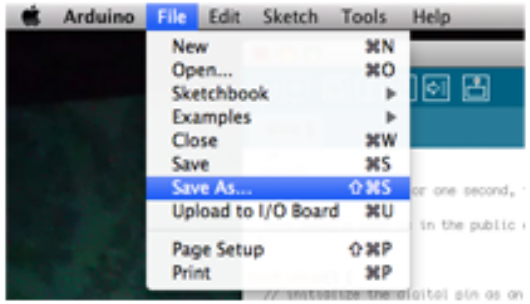
now it says delay(500)

```
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.

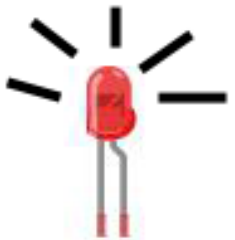



THEN:

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