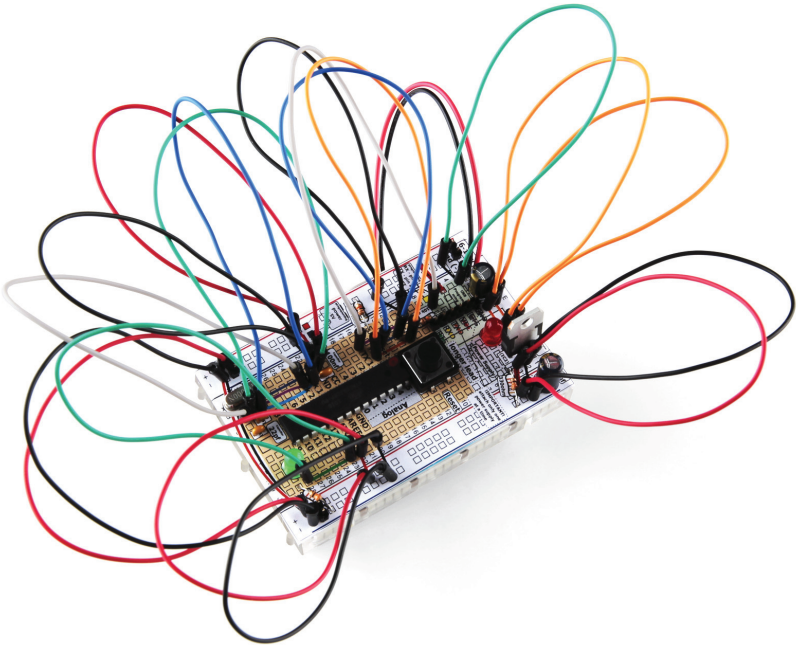
(BBAC)
breadboard arduino compatible

Breadboard Arduino Compatible Assembly Guide



(BBAC)

sparkfun.com

oomlout.com

A Few Words

About this Kit

The overall goal of this kit is fun. Beyond this, the aim is to get you comfortable using a wide range of electronic components through small, easy circuits. The focus is to get each circuit working then give you the tools to figure out why. If you encounter any problems, want to ask a question, or would like to know more about any part, extra help is only an e-mail away **help@oomlout.com**.

About Open Source Hardware

All of the projects at SparkFun and .:oomlout:. are open source. What does this mean? It means everything involved in making this kit, be it this guide, 3D models, or code, is available for free download. But it goes further, you're also free to reproduce and modify any of this material, then distribute it for yourself. The catch? Quite simple; it is released under a Creative Commons (By - Share Alike) license. This means you must credit .:oomlout:. in your design and share your developments in a similar manner. Why? We grew up learning and playing with open source software and the experience was good fun, we think it would be lovely if a similar experience was possible with physical things.

More details on the Creative Commons CC (By - Share Alike) License can be found at
http://ardx.org/CCLI

About .: oomlout :.

We're a plucky little design company focusing on producing
"delightfully fun open source products"
To check out what we are up to
http://www.oomlout.com

About SparkFun

SparkFun is an energetic young company seeking to make electronics fun, accessible, and approachable to everyone - from kids in elementary school to PhD-toting engineers.
http://www.sparkfun.com/

About Problems

We strive to deliver the highest level of quality in each and every thing we produce. If you ever find an ambiguous instruction, a missing piece, or would just like to ask a question, we'll try our best to help out.

help@oomlout.com
(we like hearing about problems it helps us improve future versions)

Thanks For Choosing .:oomlout:. and SparkFun

.: Where to Find Everything :.

TBCN
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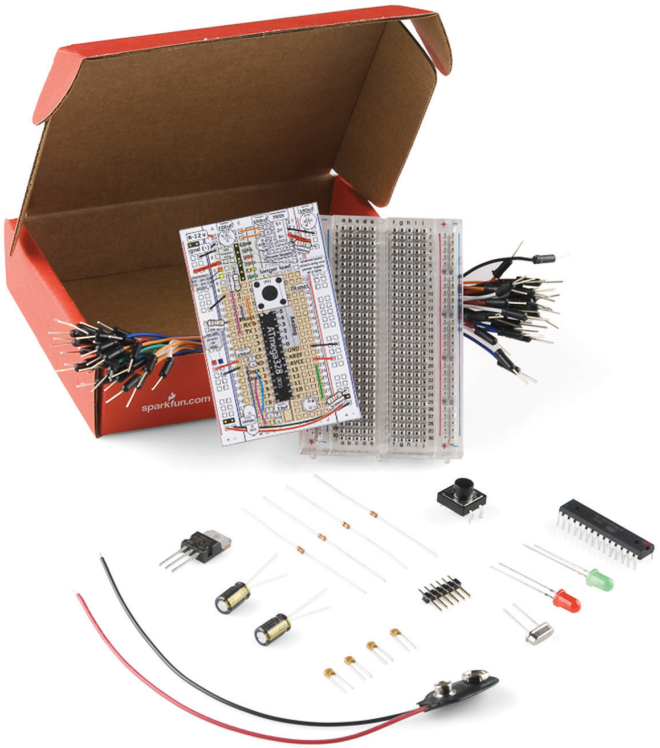
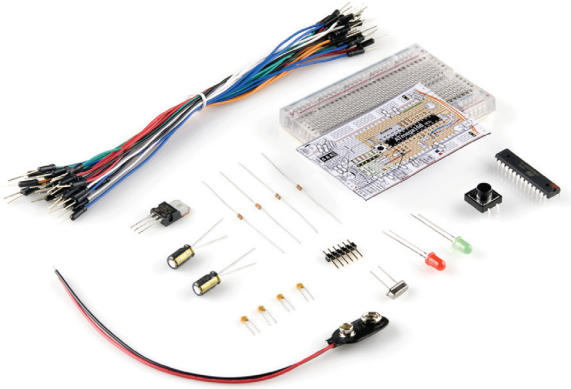


01 PART
the parts

.: The Parts Needed for a :.
.: Breadboad Arduino Compatible:.



Capacitors

100 uf - filters the power supply

100 nf - bypass capacitor (104)

22 pf - filters the crystal (220)

Resistors

330 ohm (orange-orange-brown)
LED current limiting

10k ohm (brown-black-orange)
Pull-ups

Headers

6 Pin - used for programming with an FTDI cable

2 Pin - used to pin down the breadboard layout sheet.

Battery Clip - (9v)

For powering the board with a 9v battery

Crystal - (16 MHz)

Provides a clock signal for the ATMega chip

Breadboard

Allows for easy assembly of circuits without soldering

Microcontroller - (ATMega328)

A single chip computer that runs your code

Breadboard Layout Sheet

Place on top of a breadboard to show where components go

Voltage Regulator - (7805)

Takes in 7-12 volts and outputs 5 volts

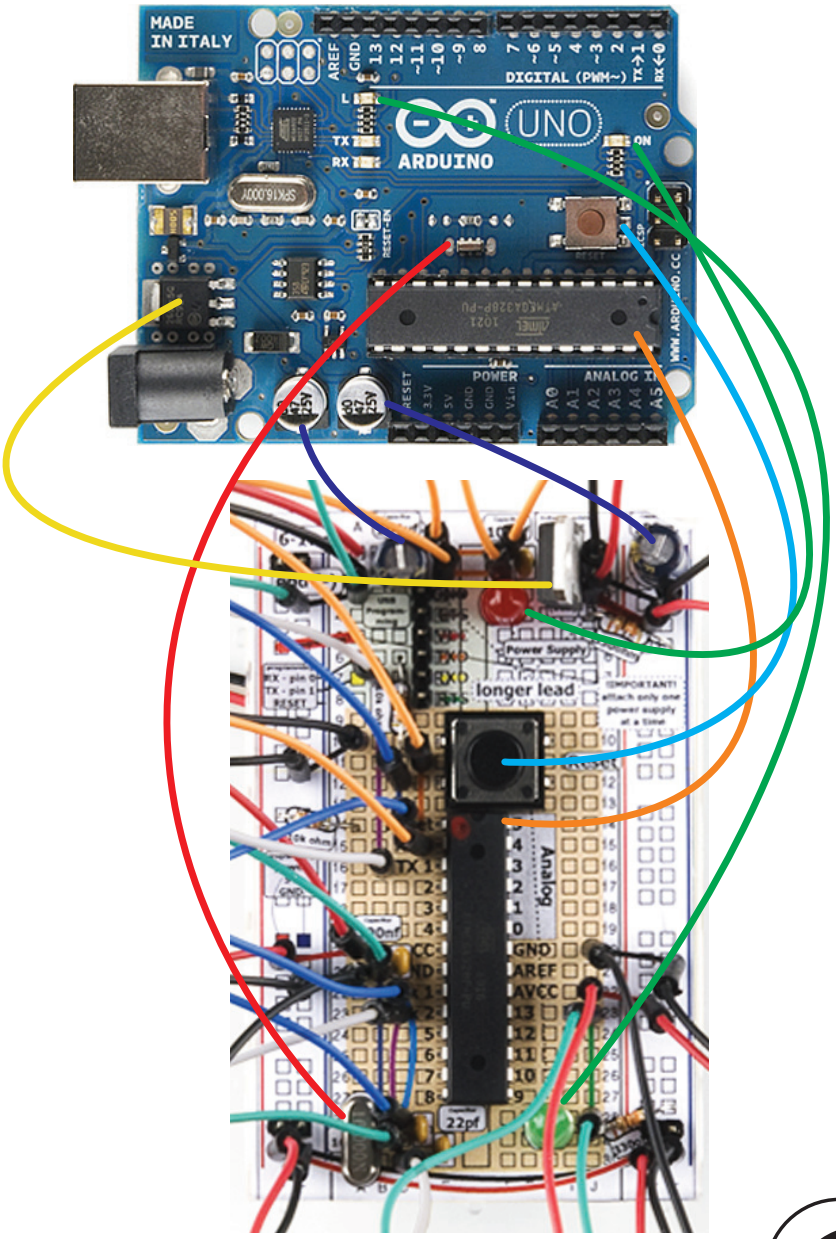
Pushbutton - (Reset)

Resets the micro-controller when pressed

LEDs- (Light Emitting Diodes)

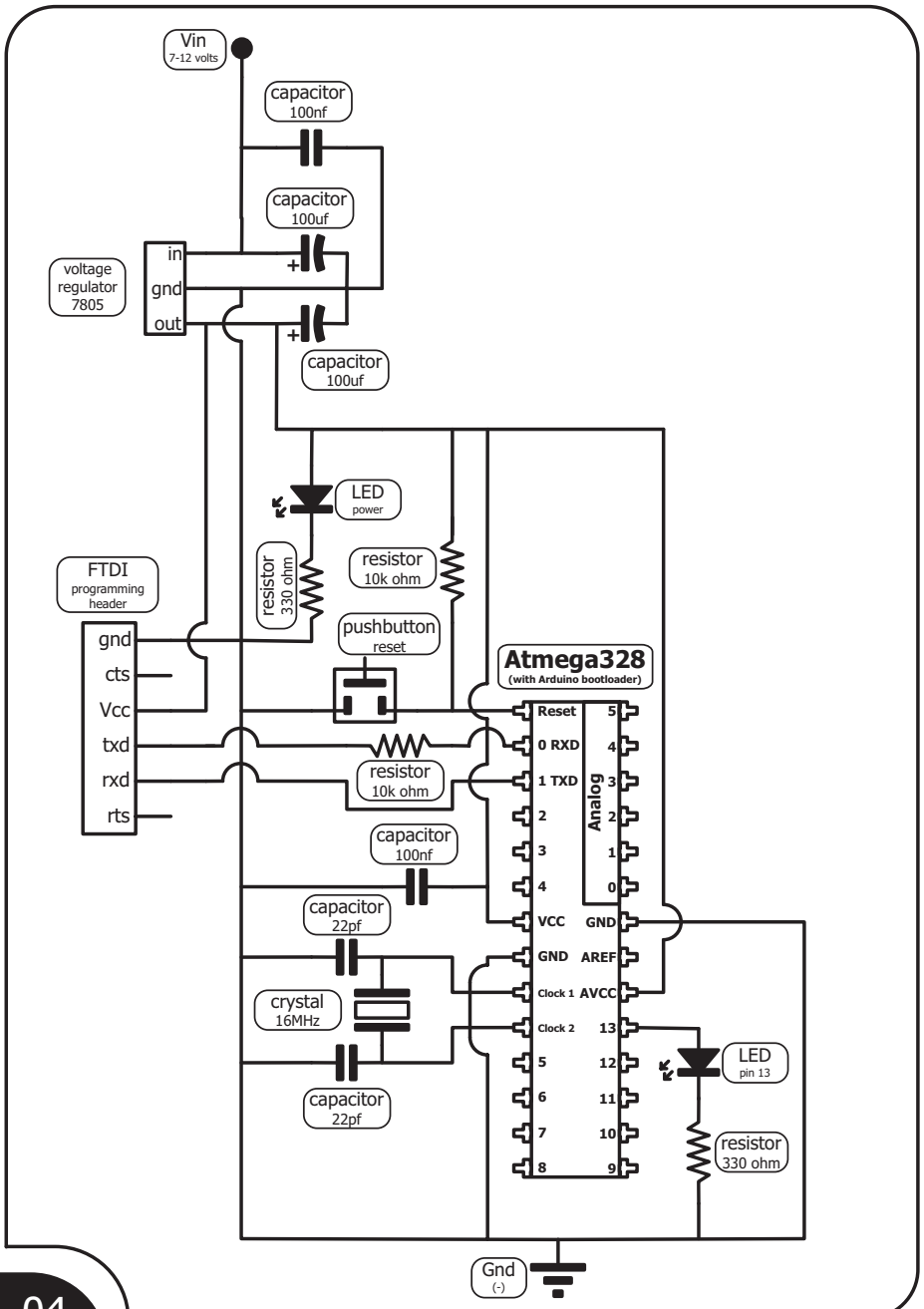
Used as indicators
Red - power
Green - connected to pin 13

.: An Arduino Uno:.
&
.: Breadboard Arduino Compared:.



.: Breadboard Arduino Compatible:.

.:Schematic:.



.: Breadboard Arduino Compatible:.

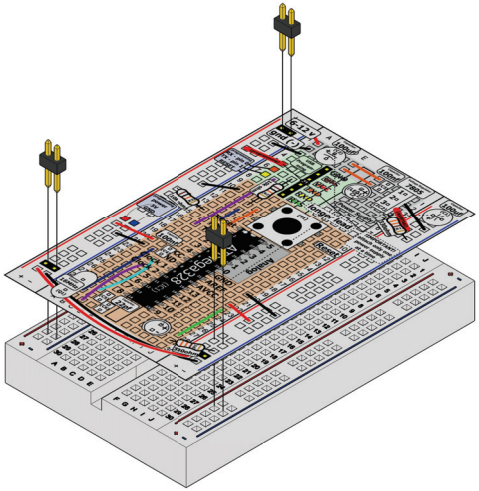
.:Assembly Steps:.

Parts:

Breadboard
x1

Breadboard Layout sheet
x1

2 Pin Header
x3



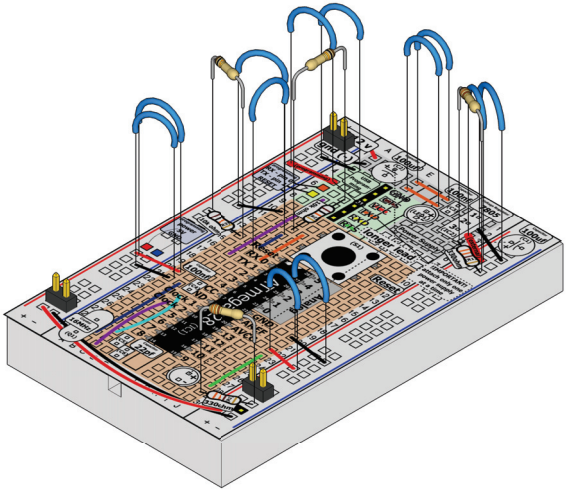
1

Parts:

wire

330 ohm resistor
(orange-orange-brown)
x2

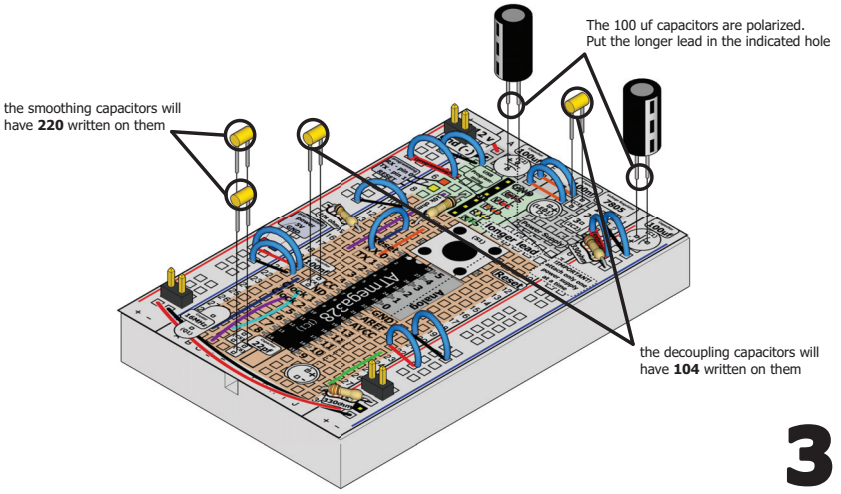
10k ohm resistor
(brown-black-orange)
x2



2

Parts:

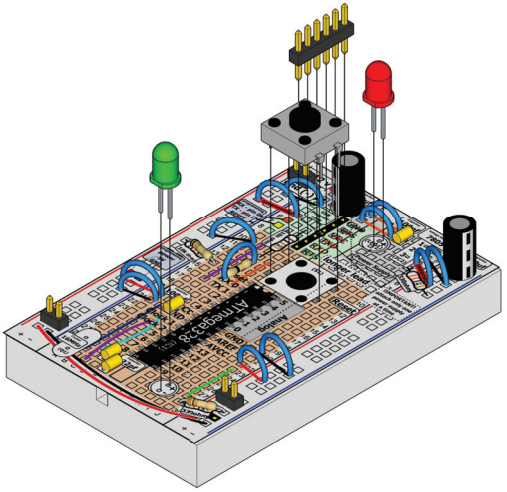
- **Capacitor 100 uf x2**
- **Capacitor 100 nf (104) x2**
- **Capacitor 22 pf (220) x2**



3

Parts:

- **Pushbutton x1**
- **Header (6 pin) x1**
- **Red LED x1**
- **Green LED x1**



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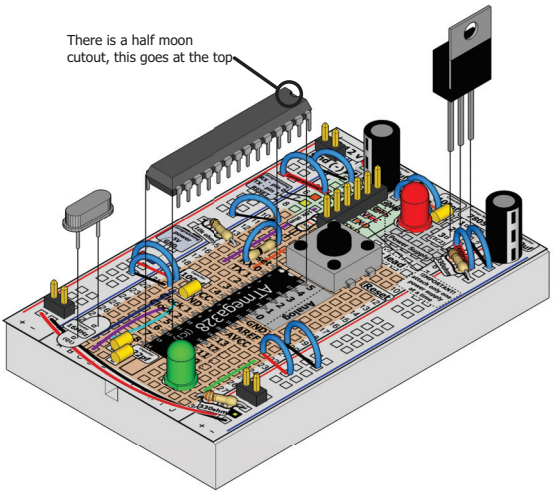
Parts:

Microcontroller
ATMega328
x1

Crystal
(16 MHz)
x1

Voltage Regulator
(7805)
x1

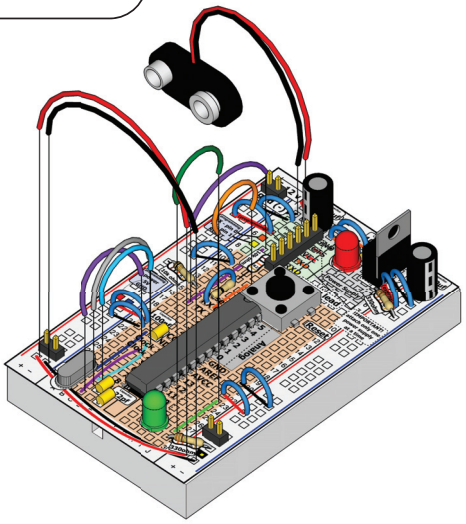


5

Parts:

Wire

Battery Clip
x1



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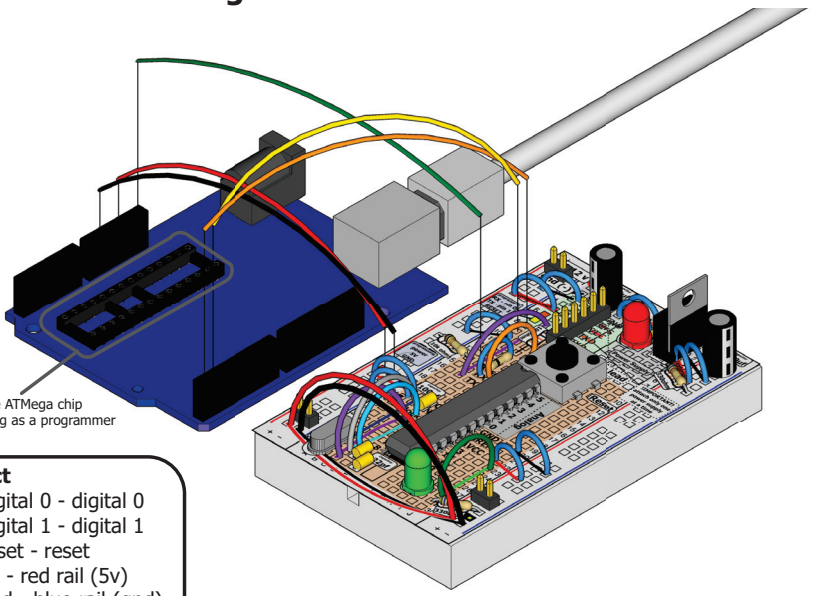
.: Programming Your Arduino Compatible:.

(you can either use an Arduino Duemilanove board or an FTDI USB-Serial cable to program your BBAC)

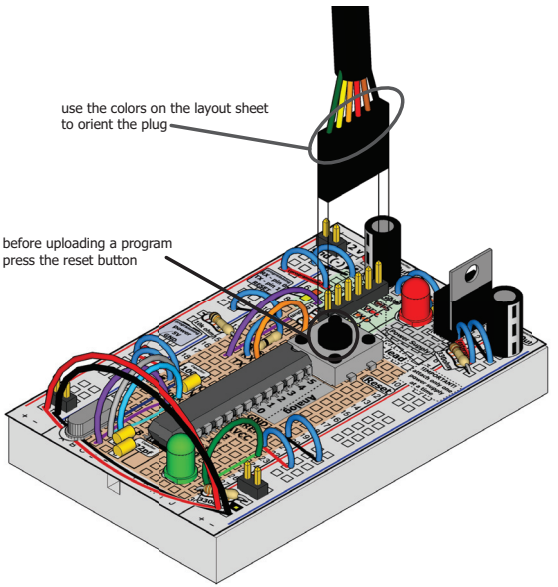
Using an Arduino USB Board



connect

1. digital 0 - digital 0
2. digital 1 - digital 1
3. reset - reset
4. 5v - red rail (5v)
5. gnd - blue rail (gnd)

Using an FTDI USB - Serial Cable



.: Notes:.

.:Room for a Few Notes:.

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