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## FTDI Friend

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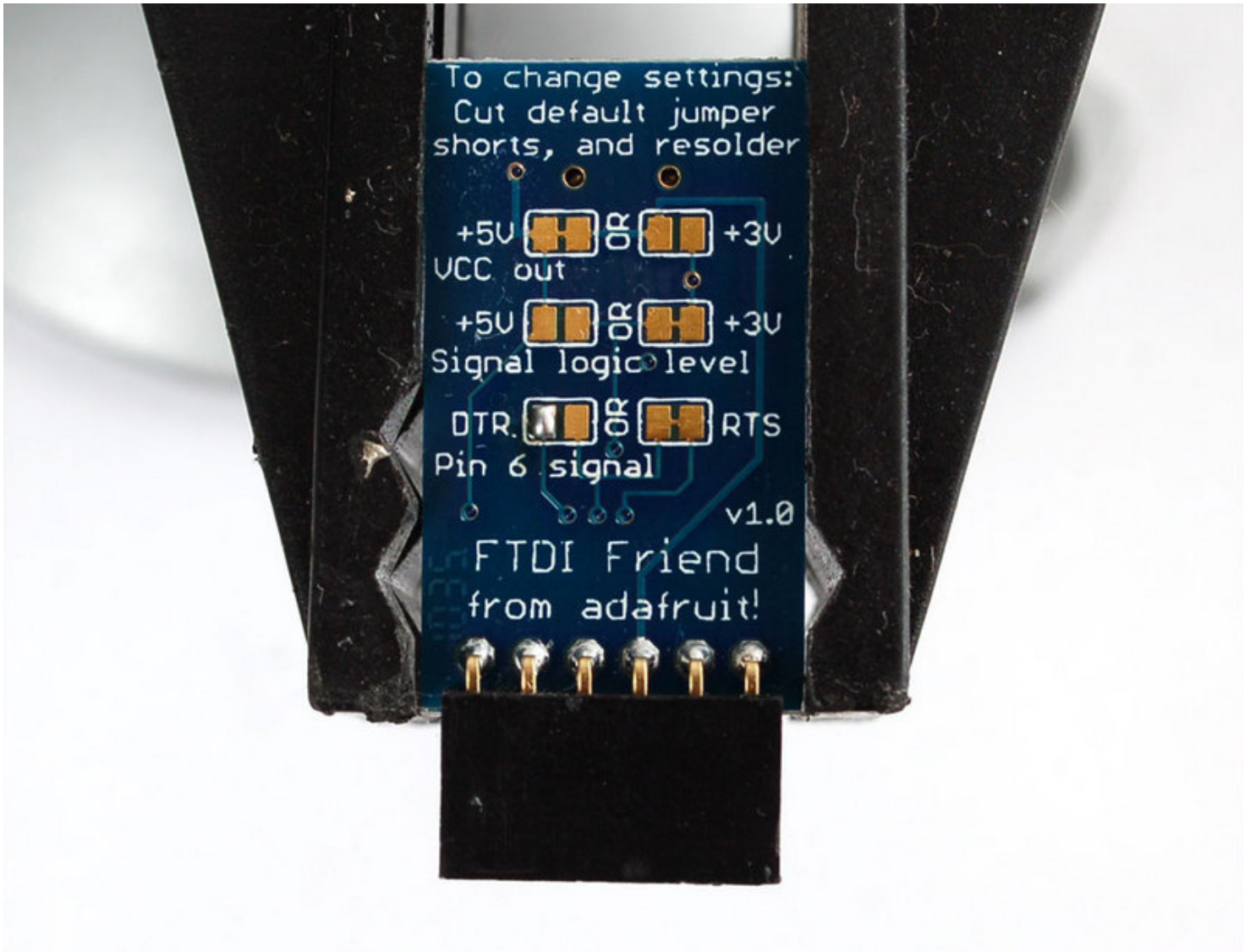
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## Programming Blank AVR's Created by [Ladyada](#)

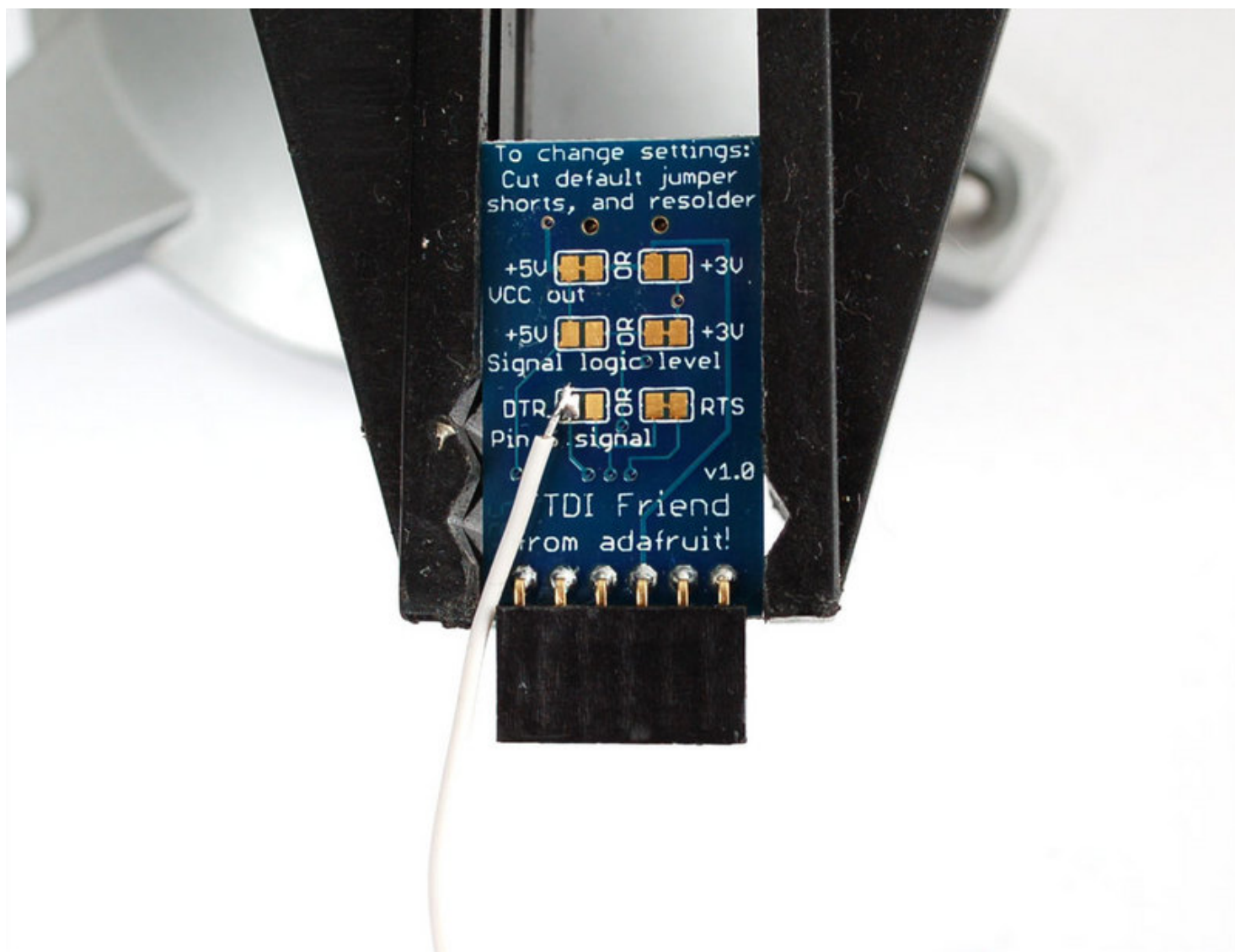
So even though I said FTDI adapters are not for programming 'raw' AVR's, it turns out you can 'convince' the chip to do it with a bit of manipulation. One [way that is documented so far doesnt require soldering but it does require updating the AVRDUDE software and installing a different driver](#) . (see also [this post](#) and [this link for using an FTDI adapter instead of an Arduino](#) )

If you have an FTDI friend or other breakout where you can get to the DTR line, I found a way to do it that requires soldering a wire but no AVRDUDE/driver messing. The trade off is that it is **really** slow - good for maybe burning a bootloader on, not good for day-to-day AVR development

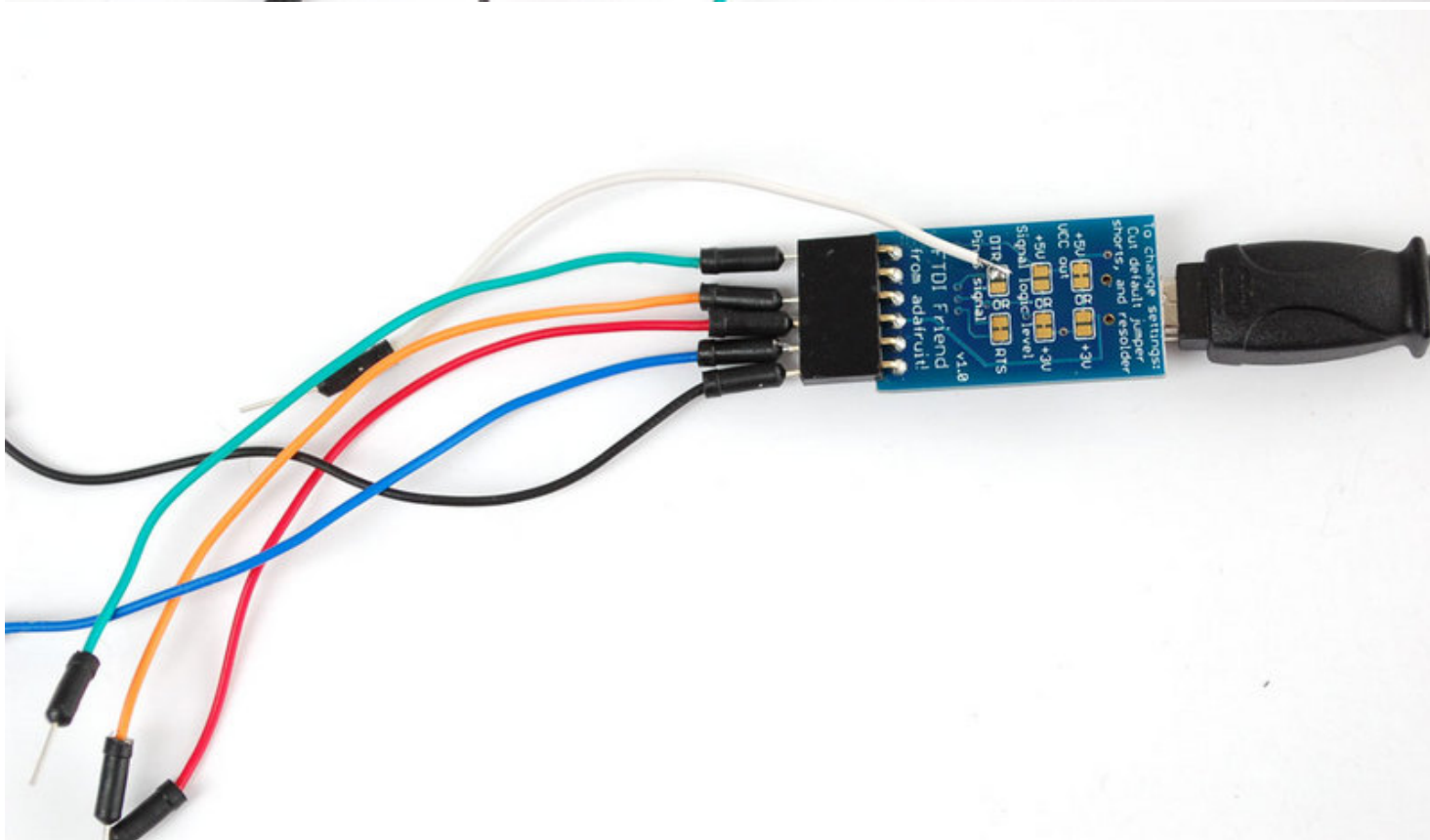
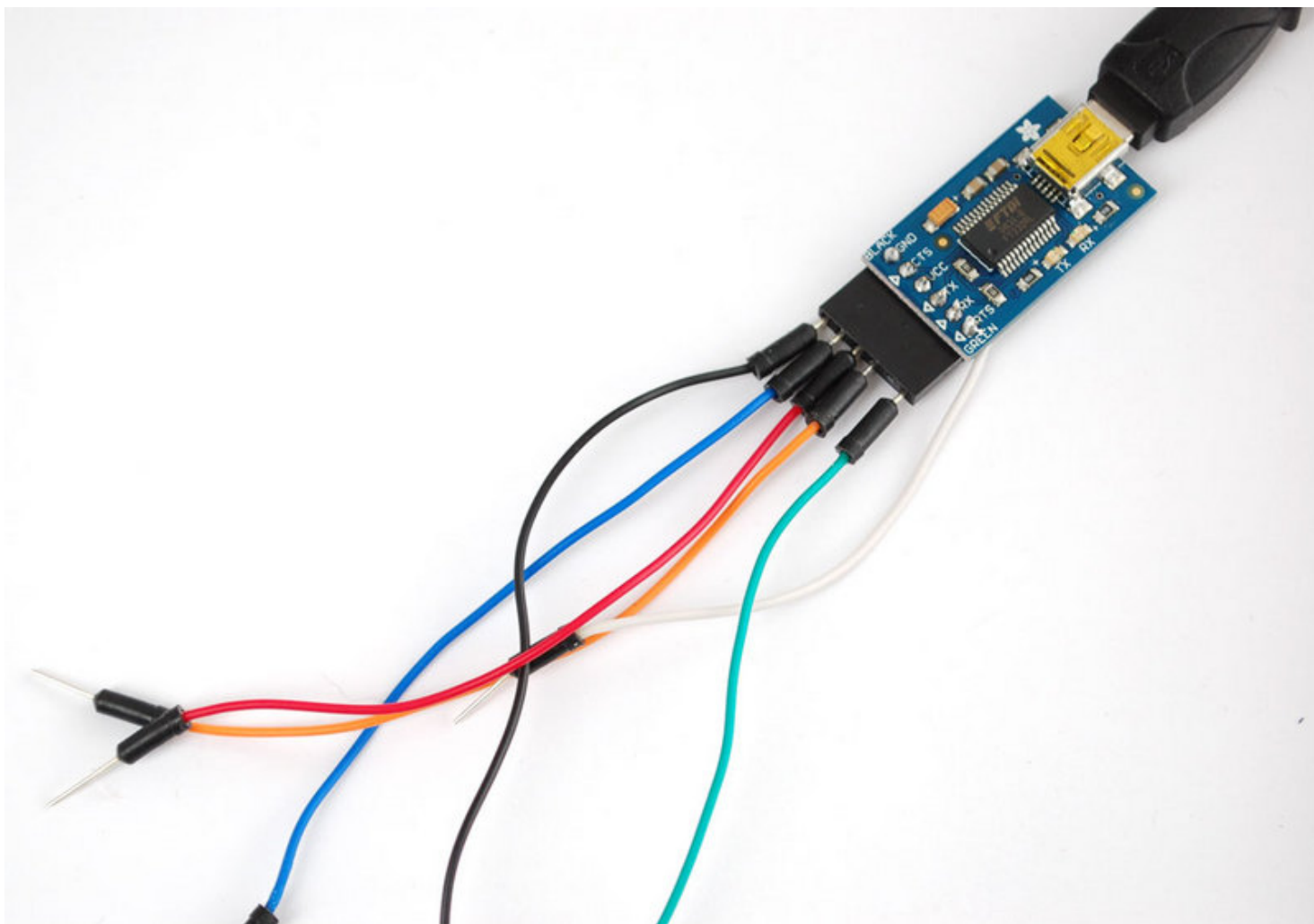
Turn over the FTDI friend, and solder a dot of solder onto the DTR pin on the bottom left.



Solder a wire onto it, making sure you dont short it to the gold square just to the right. We'll use a **white** wire.



Plug in wires into the FTDI breakout, **black** is ground, **blue** is CTS, **red** is VCC, **orange** is TX and **green** is RTS.



Now you have to make a text edit to your **avrdude.conf**.  
[learn.adafruit.com/ftdi-friend/programming-blank-avrs](http://learn.adafruit.com/ftdi-friend/programming-blank-avrs)



If you've installed [WinAVR](#) or similar (say [for Mac](#) or [Linux](#)), it'll be in something like `C:\WinAVR\bin\avrdude.conf` or `C:\WinAVR\etc\avrdude.conf` if you aren't sure where it is, but you have `avrdude` installed, you can run `avrdude -c xyz` which will dump the programmer list, if you look to the right, the name of the conf file will be printed

```

C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\ladyada>avrdude -c xyz
avrdude: Can't find programmer id "xyz"

Valid programmers are:
c2n232i = serial port banging, reset=dtr sck=!rts mosi=!txd miso=!cts [C:\Win
AVR-20100110\bin\avrdude.conf:876]
dasa3 = serial port banging, reset=!dtr sck=rts mosi=txd miso=cts [C:\WinAV
R-20100110\bin\avrdude.conf:863]
dasa = serial port banging, reset=rts sck=dtr mosi=txd miso=cts [C:\WinAVR
-20100110\bin\avrdude.conf:850]
siprog = Lancos SI-Prog <http://www.lancos.com/siprogsch.html> [C:\WinAVR-20
100110\bin\avrdude.conf:837]
ponyser = design ponyprog serial, reset=!txd sck=rts mosi=dtr miso=cts [C:\Wi
nAVR-20100110\bin\avrdude.conf:824]
89isp = Atmel at89isp cable [C:\WinAVR-20100110\bin\avrdude.conf:791]
frank-stk200 = Frank STK200 [C:\WinAVR-20100110\bin\avrdude.
conf:777]
blaster = Altera ByteBlaster [C:\WinAVR-20100110\bin\avrdude.conf
:764]
ere-isp-avr = ERE ISP-AVR <http://www.ere.co.th/download/sch050713.pdf> [C:\Wi
nAVR-20100110\bin\avrdude.conf:754]
atisp = AT-ISP U1.1 programming cable for AVR-SDK1 from <http://micro-resea
rch.co.th/> [C:\WinAVR-20100110\bin\avrdude.conf:744]
dapa = Direct AVR Parallel Access cable [C:\WinAVR-20100110\bin\avrdude.co

```

A common reason for wanting to program an AVR is to put the Arduino bootloader on there, in which case, you may not have WinAVR installed. Luckily, `avrdude` is there, it's just 'hidden' in the IDE package (for Mac users, you need to actually "explore" the App) if you're running windows, go to the folder where you have the IDE installed and go into the **hardware\tools\avr\etc** folder to open up `avrdude.conf`

OK! Now that you have `avrdude.conf` open, find the string **ponyser**, then add the following bold text right before hand so the `avrdude.conf` looks like this:

```

Copy Code
1. # Some ultra cheap programmers use bitbanging on the
2. # serialport.
3. #
4. # PC - DB9 - Pins for RS232:
5. #
6. # GND      5      -- | 0
7. #          |      O | <- 9  RI
8. # DTR      4      <- | 0
9. #          |      O | <- 8  CTS
10. # TXD      3      <- | 0
11. #          |      O | -> 7  RTS
12. # RXD      2      -> | 0
13. #          |      O | <- 6  DSR
14. # DCD      1      -> | 0
15. #
16. # Using RXD is currently not supported.
17. # Using RI is not supported under Win32 but is supported under Posix.
18.
19. # serial ponyprog design (dasa2 in uisp)
20. # reset=!txd sck=rts mosi=dtr miso=cts
21. programmer
22.   id      = "ftdifriend";
23.   desc    = "design ftdi adatper, reset=dtr sck=tx mosi=rts miso=cts";
24.   type    = serbb;
25.   reset   = ~4;
26.   sck     = ~3;
27.   mosi    = ~7;

```

```
28.  miso  = ~8;
29.  ;
30.  # serial ponyprog design (dasa2 in uisp)
31.  # reset=!txd sck=rts mosi=dtr miso=cts
32.
33.  programmer
34.    id    = "ponyser";
35.    desc   = "design ponyprog serial, reset=!txd sck=rts mosi=dtr miso=cts";
36.    type   = serbb;
37.    reset  = ~3;
38.    sck    = 7;
39.    mosi   = 4;
40.    miso   = 8;
41.  ;
```

Save the file.

[< FTDI vs. AVR Programmer Programming the Arduino Bootloader >](#)

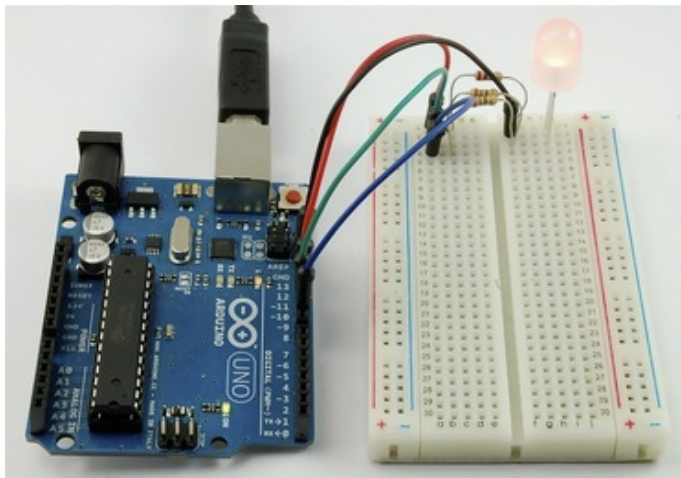
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Adafruit was founded in 2005 by MIT engineer, Limor "Ladyada" Fried. Her goal was to create the best place online for learning electronics and making the best designed products for makers of all ages and skill levels.

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