

# Bloominglabs AVR Workshop

## Legend:

VCC = +5V

GND = ground

ISP = In-System-Programmer port

PDIP = chip form factor, Plastic Dual-Inline-Pin

Port B = pins 14-19, 9, 10

Port C = pins 23-28, 1

Port D = pins 2-6, 11, 12

Programmer connections:

(Do NOT connect +5 from programmer to breadboard!)

1 = reset

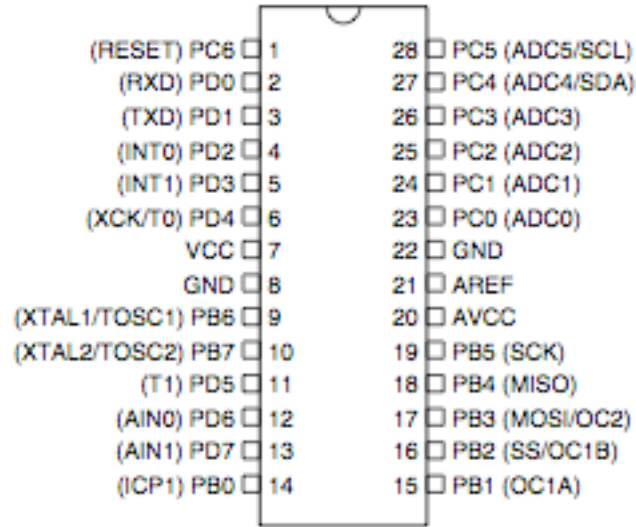
19 = SCK

18 = MISO

17 = MOSI

22 = GND

## ATMega8 Pinout



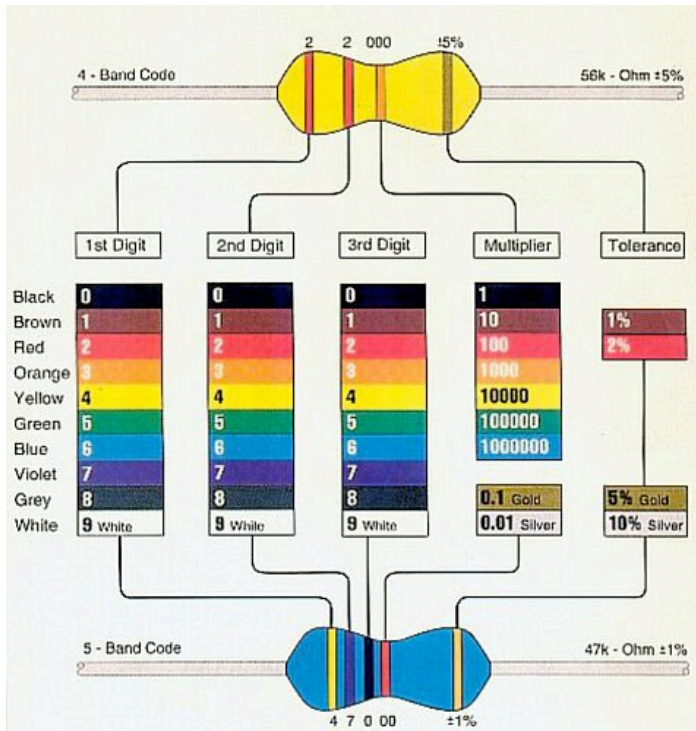
<p><b>Programmer pinouts:</b> (Do NOT connect +5 from programmer to breadboard!)</p> <p>ISP Connectors: 6-pin &amp; 10-pin</p>	<p><b>Voltage Regulator Pinout:</b></p> <p>FRONT VIEW</p> <p>Pin 2 = ground for input and output</p>
<p><b>LED Pinout:</b></p>	<p><b>RGB LED Pinout</b> (blue and green are reversed)</p>

More AVR info: [www.avrfreaks.net](http://www.avrfreaks.net)

AVRDUDE Setup Tutorial: [www.ladyada.net/make/usbtinyisp/avrdude.html](http://www.ladyada.net/make/usbtinyisp/avrdude.html)

# Bloominglabs AVR Workshop

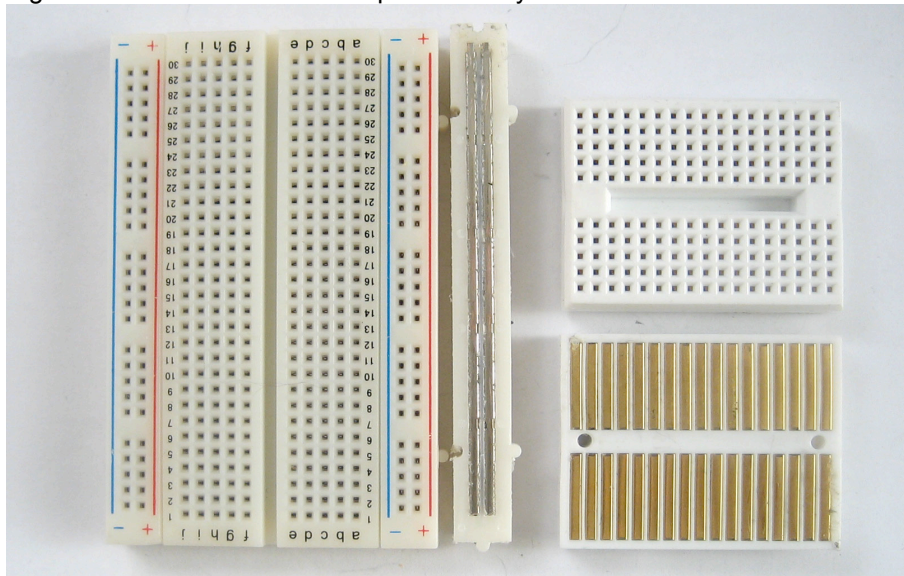
## Resistor Color Codes



Black	0	Bad
Brown	1	Boys
Red	2	Race
Orange	3	Our
Yellow	4	Young
Green	5	Girls
Blue	6	Behind
Violet	7	Victory
Grey	8	Garden
White	9	Walls

### How the Solderless Bread Board works:

(Image and text borrowed from <http://www.ladyada.net/learn/arduino/lesson3.html>)



In the images above you can see how there are two kinds of metal strips. There are short ones that connect 5 row holes at a time, and then there are very long ones that connect 25 (or more!) column holes at a time. The long columns are called **rails** and the short strips are called **rows**. Breadboards are almost always made so that they have two sets of 5-hole rows and on either side there are a pair of rails. For example the breadboard on the left has 30 row pairs and 2 sets of double rails on either side. The one on the right is quite small, it has only 17 row pairs and no rails.

### Warning!

Distressing as it may sound, solderless breadboards can be **very** flakey, especially as they age. If you're having problems with your circuit, it could be that the little metal clips on the inside aren't working well. Try poking it with your finger, or moving it to a different section.