

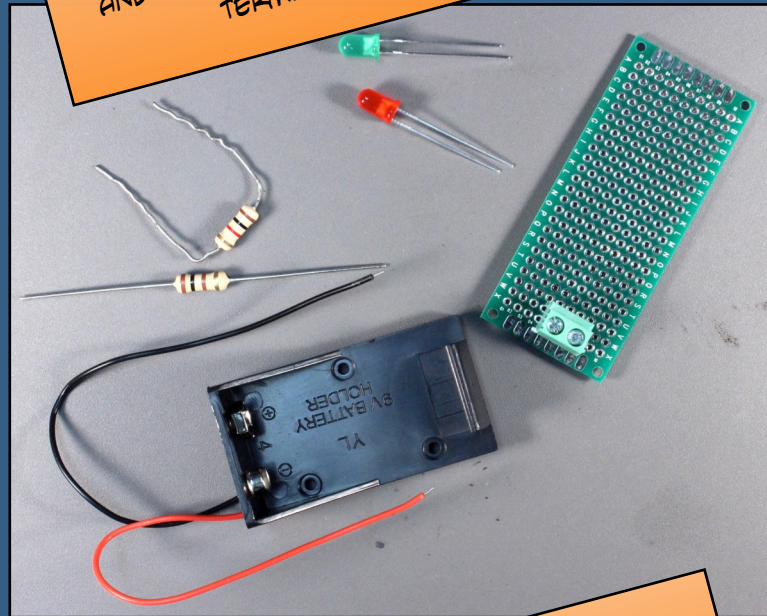
HOW TO GUIDE:

CONDUCTIVITY METER

TOOLS: SOLDERING IRON, WIRE STRIPPER, WIRE CUTTER, SMALL SCREWDRIVER

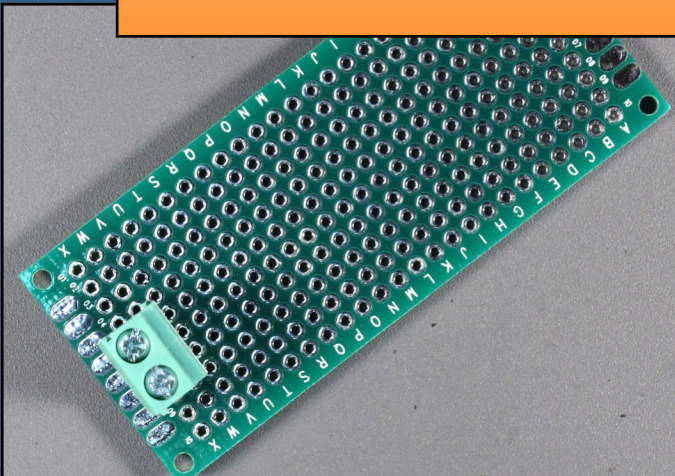


PARTS: 100 & 1000 OHM RESISTORS, GREEN AND RED LEDs, 9V BATTERY HOLDER, SCREW TERMINAL, PROTO-BOARD



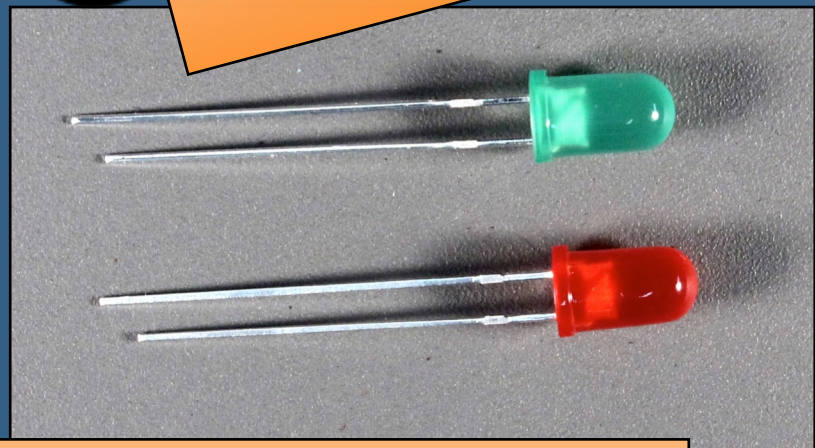
1

INSERT SCREW TERMINAL INTO PROTO-BOARD NEAR ONE END WITH HOLES FACING OUT.



2

LOOKING AT YOUR LEDs, THE SHORTER LEAD IS THE NEGATIVE SIDE

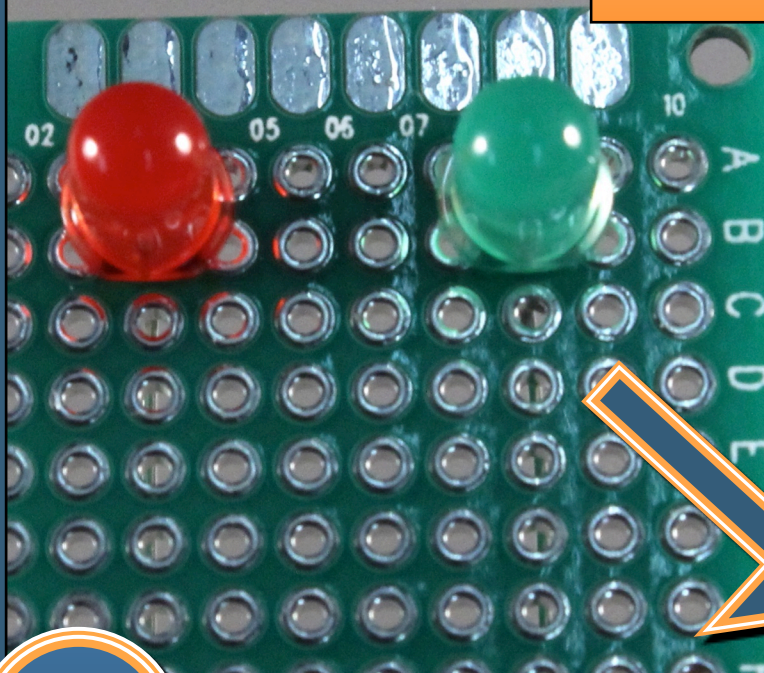


NOTE

THE SCREW TERMINAL IS A VERY TIGHT FIT. CONSTANT PRESSURE WILL FORCE IT IN.

3

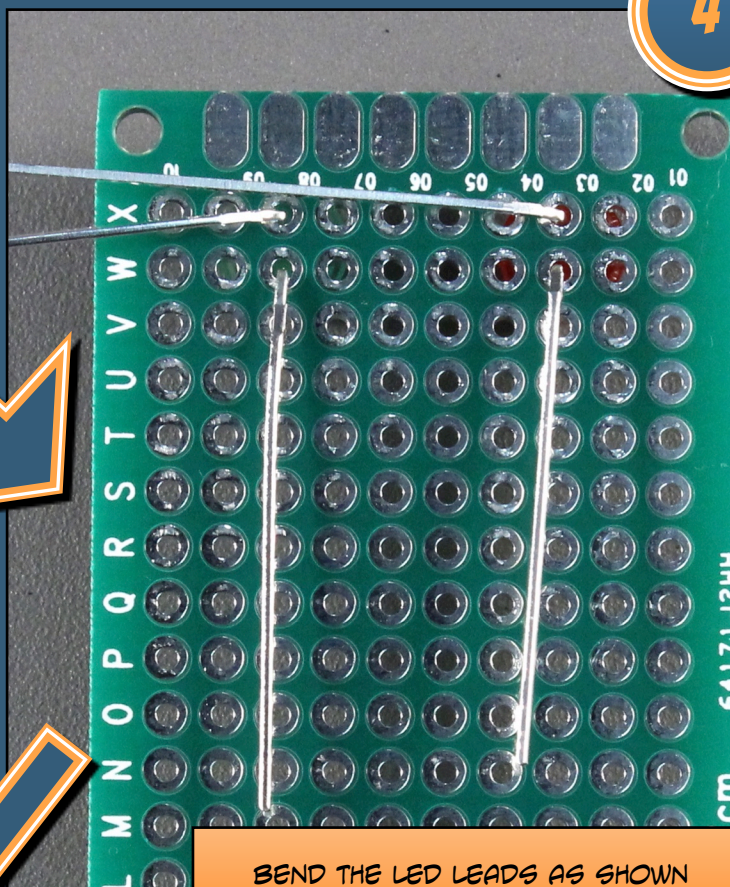
INSERT LEDS INTO BOARD ON THE END OPPOSITE FROM THE SCREW TERMINAL. ORIENT SO THAT THE NEGATIVE IS "DOWN"



NOTE

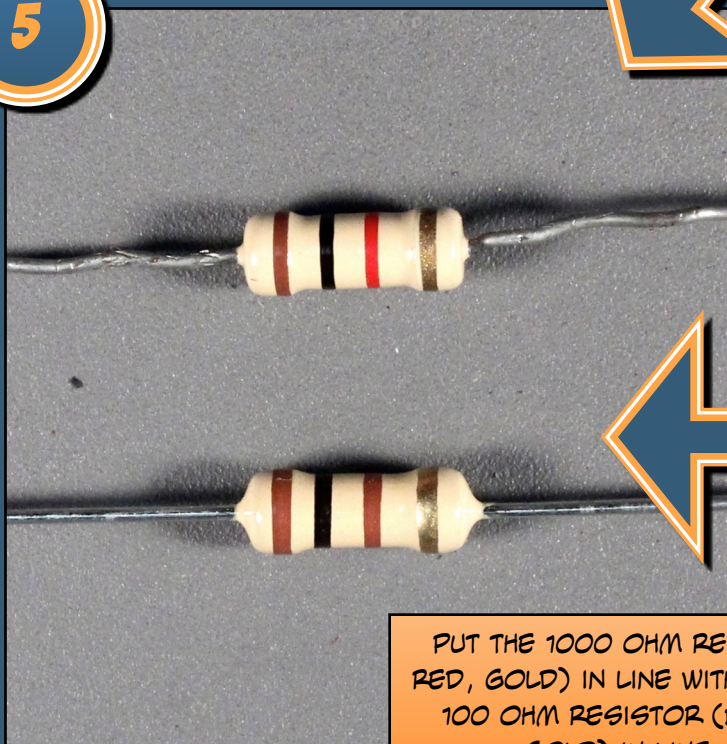
IF YOU LOOK AT THE LEDS THE NEGATIVE SIDE IS ALSO HAS A FLAT EDGE

4

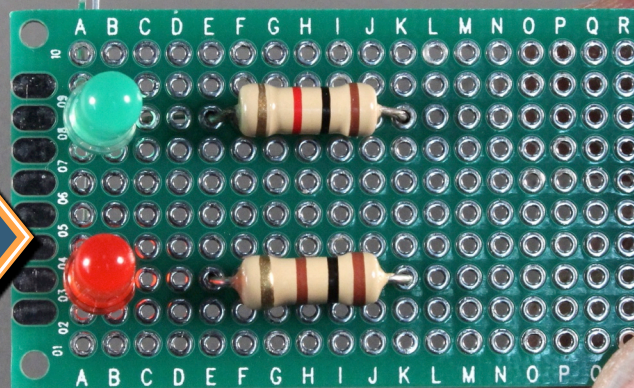


BEND THE LED LEADS AS SHOWN

5

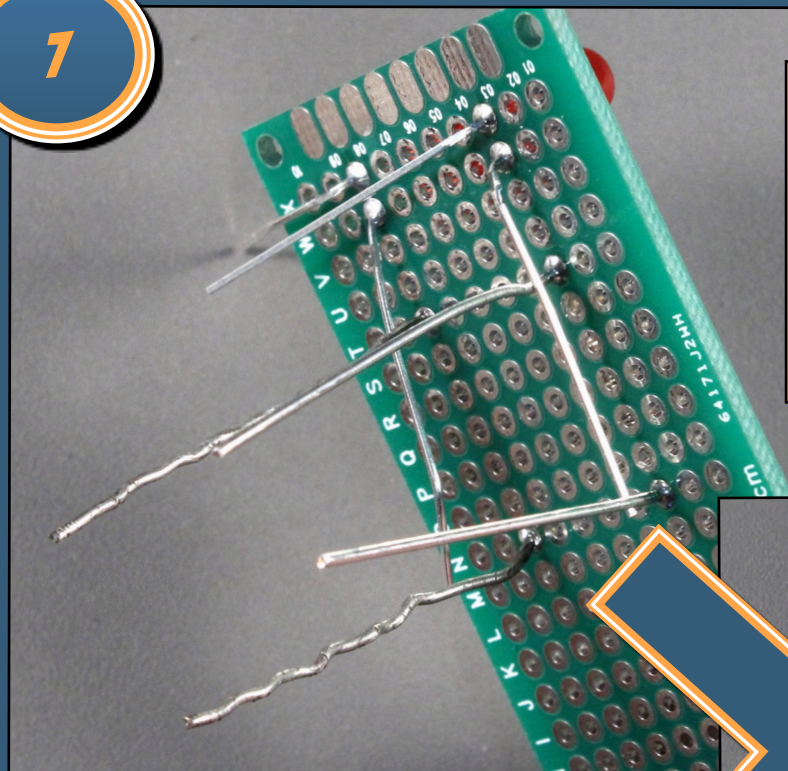


6



PUT THE 1000 OHM RESISTOR (BROWN, BLACK, RED, GOLD) IN LINE WITH THE GREEN LED. PUT THE 100 OHM RESISTOR (BROWN, BLACK, BROWN, GOLD) IN LINE WITH THE RED LED.

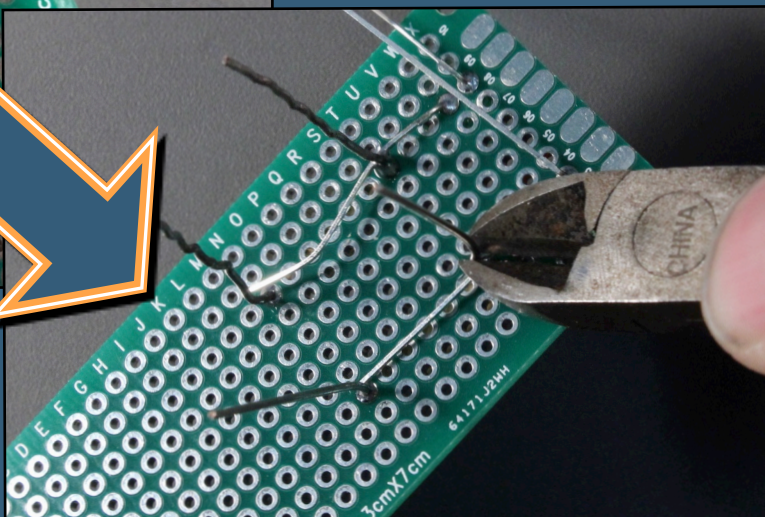
7



- SOLDER ALL THE WIRES TO THE SOLDER PADS ON THE PROTO-BOARD.

- SOLDER THE NEGATIVE LED LEADS TO THE RESISTORS

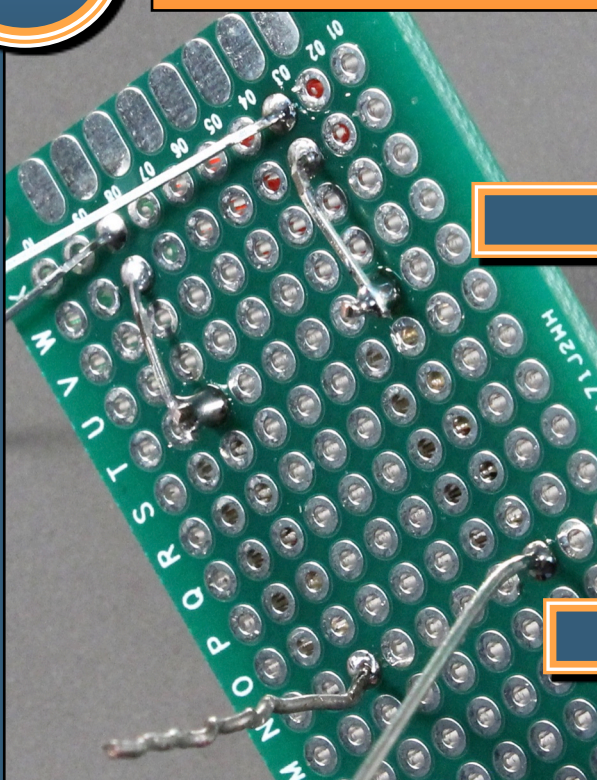
- TRIM OFF THE EXCESS RESISTOR AND LED LEADS.



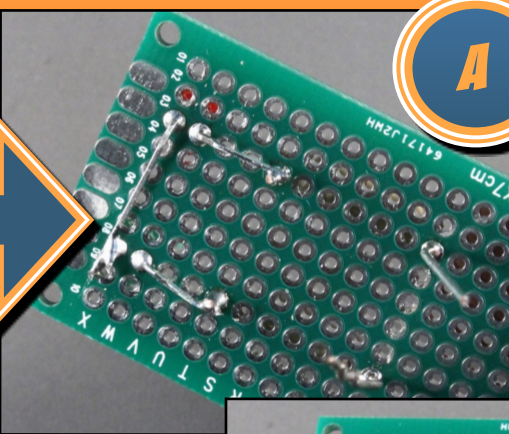
8

A - SOLDER THE POSITIVE LEADS FROM THE LEDS TOGETHER

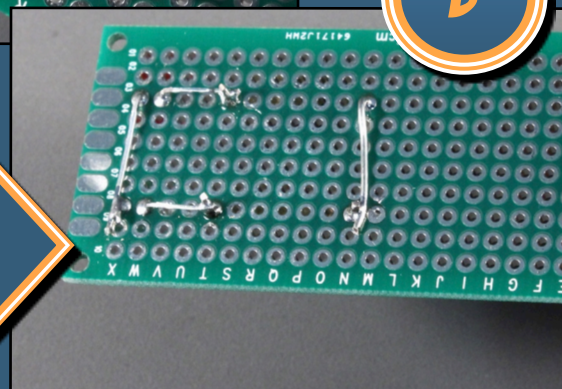
B - BEND ONE OF THE RESISTOR LEADS OVER AND THEN SOLDER TO THE OTHER RESISTOR



A



B



9

- ADD A WIRE FROM THE RESISTORS TO ONE OF THE SCREW TERMINAL LEADS
- SOLDER WIRE INTO PLACE AT BOTH ENDS

10

NOTE

THE BATTERY WIRES ARE MUCH LONGER THAN YOU NEED THEM TO BE. YOU SHOULD TRIM THEM DOWN TO SIZE.

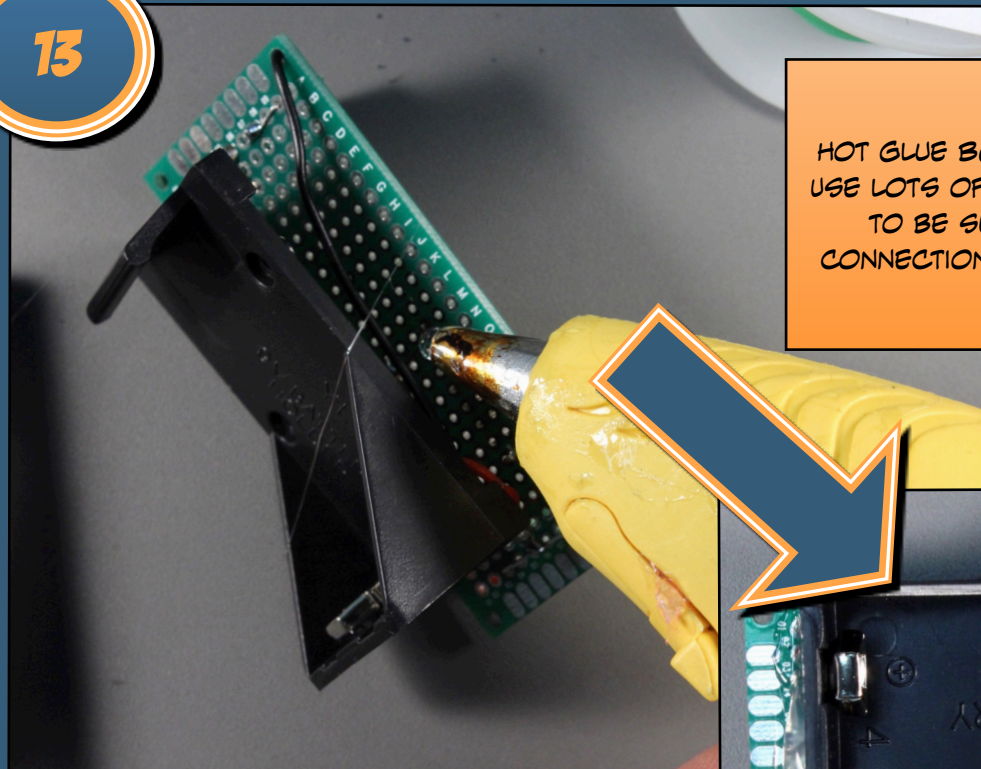
11

SOLDER NEGATIVE BATTERY WIRE TO THE OTHER SCREW TERMINAL

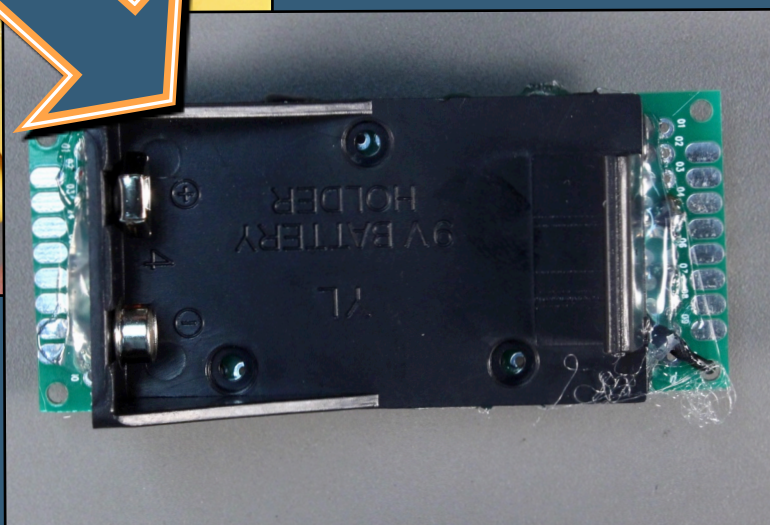
12

SOLDER POSITIVE BATTERY WIRE TO THE POSITIVE LED LEADS

13

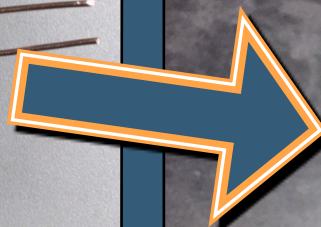
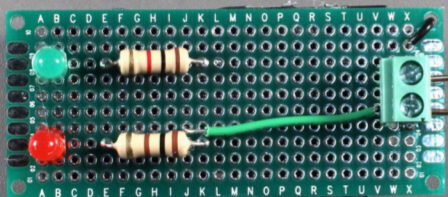


HOT GLUE BATTERY HOLDER INTO PLACE. USE LOTS OF GLUE. YOU ALSO MAY WANT TO BE SURE TO COVER ANY BARE CONNECTIONS YOU CAN SEE WITH GLUE.



14

ADD TWO BARE WIRES IN YOUR SCREW TERMINALS, ADD A BATTERY, AND TEST!



- BATTERY HOLDERS: <http://amzn.to/2inVBZF>
- PROTO-BOARDS: <http://amzn.to/2jIP3RG>
- SCREW TERMINALS: <http://amzn.to/2iriWF4>
- RESISTORS 1000 OHM: <http://amzn.to/2iTqnG0>
- RESISTORS 100 OHM: <http://amzn.to/2iwfooj>

TUTORIAL CREATED BY:
STEVE DICKIE @FALCONPHYSICS

THIS WORK IS LICENSED UNDER A CREATIVE
COMMONS ATTRIBUTION-NONCOMMERCIAL 4.0
INTERNATIONAL LICENSE.

