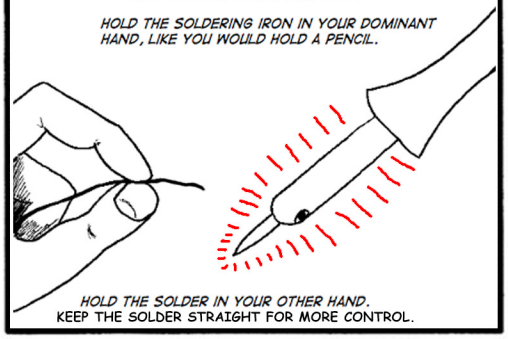
SΦLDЄЯ ЇИSTЯЦCTЮИ

THE IRON IS HOT!! BE CAREFUL!

350-400°C or about 660-750°F

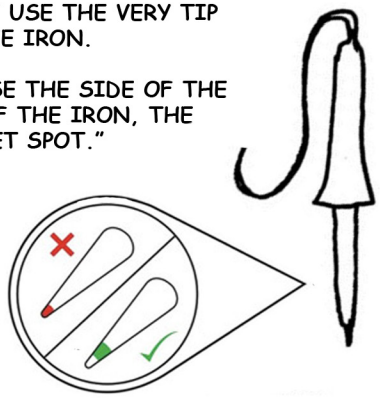
HOLD THE SOLDERING IRON IN YOUR DOMINANT HAND, LIKE YOU WOULD HOLD A PENCIL.



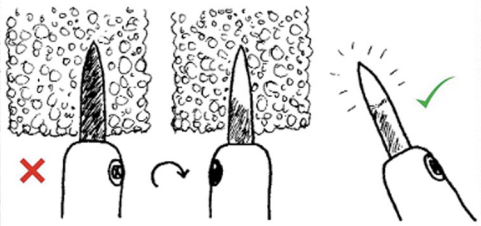
HOLD THE SOLDER IN YOUR OTHER HAND.
KEEP THE SOLDER STRAIGHT FOR MORE CONTROL.

DON'T USE THE VERY TIP OF THE IRON.

DO USE THE SIDE OF THE TIP OF THE IRON, THE "SWEET SPOT."

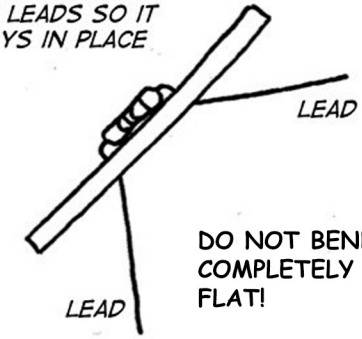


CLEAN THE TIP OF YOUR IRON BEFORE EACH SOLDER CONNECTION!!
WIPE GENTLY ON THE BRASS SPONGE.
ADD SOLDER TO TIP WHEN NOT IN USE.



IF THE TIP IS NICE AND SILVERY AND SHINY, YOU CAN MAKE GOOD CONNECTIONS.

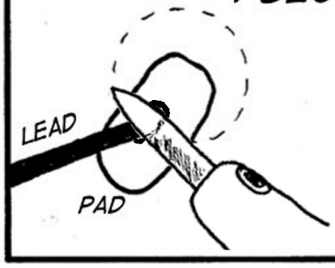
PUT YOUR PART IN PLACE. BEND OUT THE LEADS SO IT STAYS IN PLACE



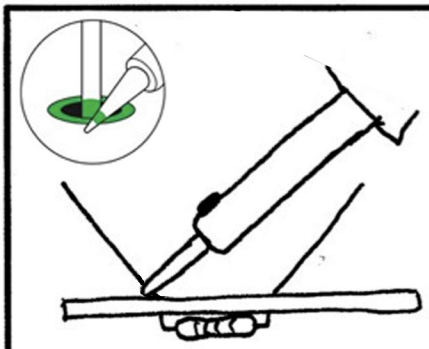
DO NOT BEND COMPLETELY FLAT!

OK, LETS SOLDER!

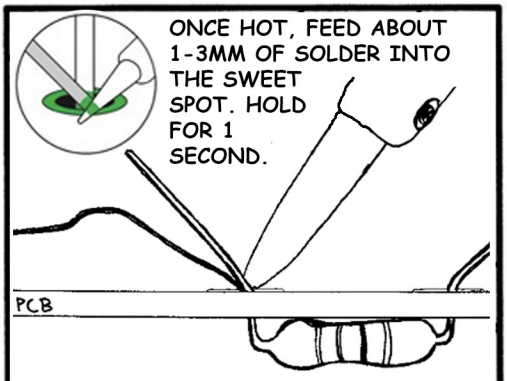
FIRST, YOU WANT TO **HEAT** BOTH THE PAD AND THE LEAD FOR ABOUT **1 SECOND**



PSST! CLEAN THE TIP FIRST!

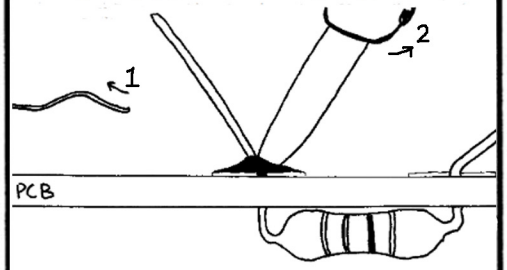


TOUCH THE SOLDERING IRON TO BOTH THE PAD AND THE LEAD!



ONCE HOT, FEED ABOUT 1-3MM OF SOLDER INTO THE SWEET SPOT. HOLD FOR 1 SECOND.

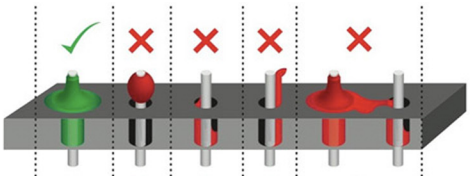
PCB



WHILE EVERYTHING IS STILL HOT, PULL THE SOLDER AWAY. THEN PULL THE IRON AWAY. LET COOL FOR 2-3 SECOND.

A GOOD CONNECTION
COVERS THE PAD
WITHOUT TOUCHING OTHER PADS
AND **SURROUNDS THE LEAD**

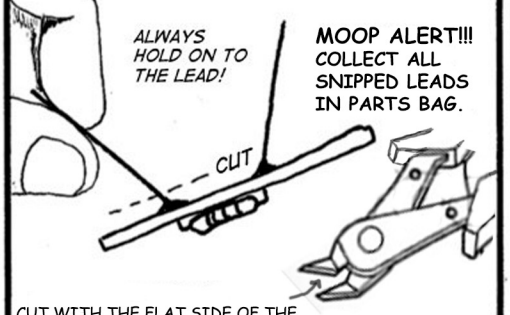
THINK HERSHEY KISS



CUT THE LEADS OFF WITH THE WIRE CUTTER

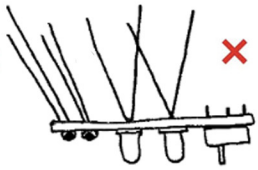
ALWAYS HOLD ON TO THE LEAD!

MOOP ALERT!!! COLLECT ALL SNIPPED LEADS IN PARTS BAG.



CUT WITH THE FLAT SIDE OF THE WIRE CUTTERS FACING DOWN.

SOME PEOPLE PREFER TO ADD MANY PARTS AND SOLDER THEM ALL AT ONCE. HOWEVER, WE RECOMEND SOLDERING ONLY ONE PART TO THE BOARD AT A TIME.



FOR PARTS WITH MANY LEADS, SOLDER ONE LEAD, THEN CHECK THE PART'S ORIENTATION. HEAT THE SOLDERED LEAD TO ADJUST, IF NEEDED, THEN SOLDER THE REST.

SOLDERING COURSE BY MITCH ALTMAN
HTTP://CORNFIELDELECTRONICS.COM

COMIC ADAPTATION BY ANDIE NORDGREN
HTTP://LOG.ANDIE.SE

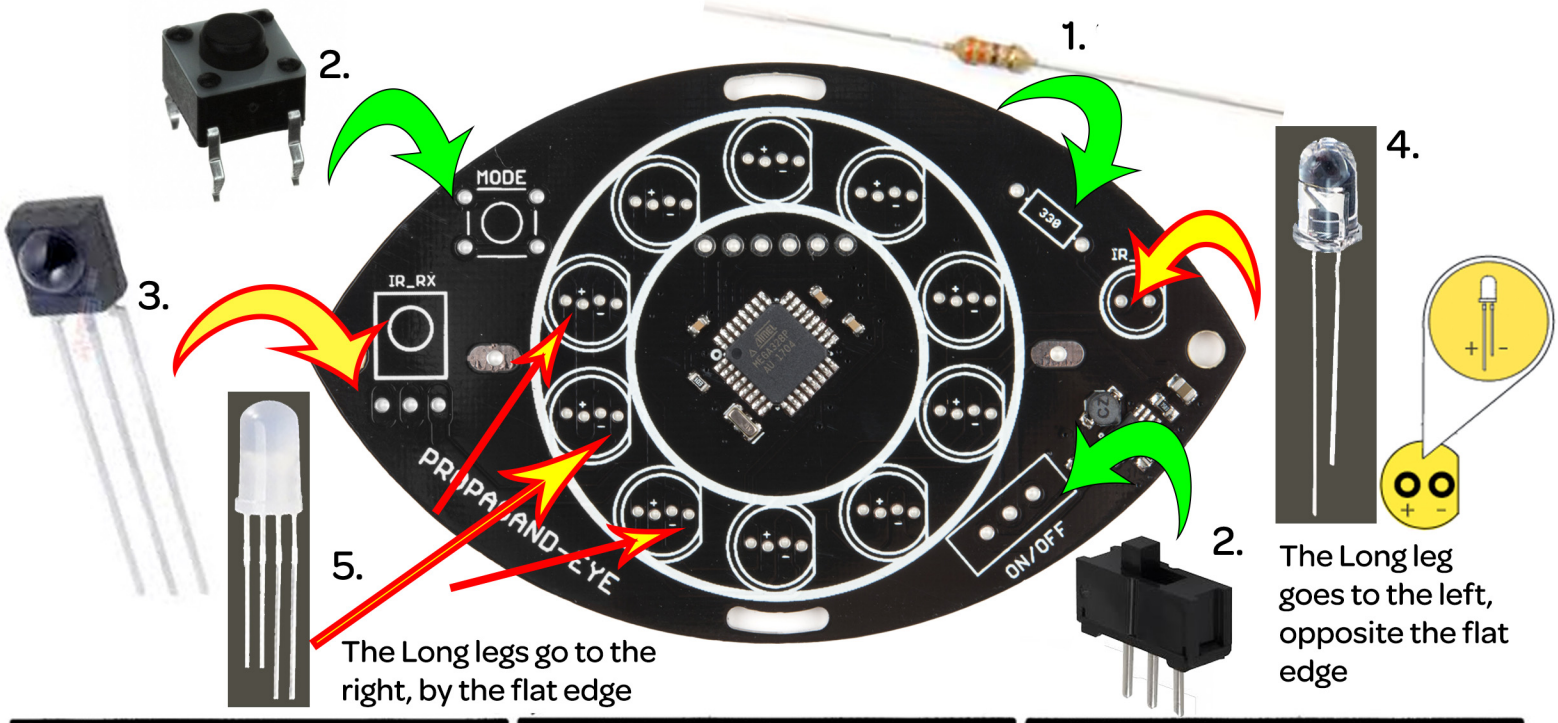
Altered by Joel Bartlett
for Apogaea 2017 workshop

PUBLIC DOMAIN, USE, COPY, SPREAD!

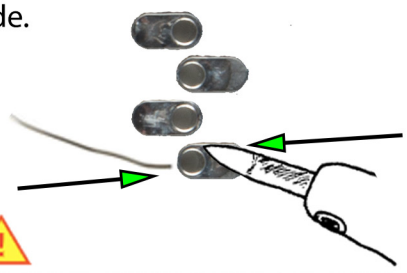
Orders of the Operations

1. Start with 330Ω Resistor.
2. Solder Button, followed by Switch.
3. Bend IR Receiver 90°, then solder. This part is POLARIZED.
4. Solder IR LED (with only two legs). This part is POLARIZED.
5. Solder the 10 addressable LEDS. These parts are POLARIZED.
6. HAVE TEACHING AID VISUALLY INSPECT YOUR BOARD BEFORE THE LAST STEP.
7. Solder Battery Clip on last. This part is POLARIZED.

REMEMBER, HIGHLIGHTED COMPONENTS ARE POLARIZED!

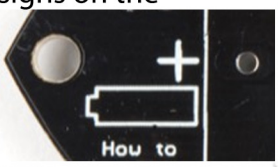


The addressable LEDs are by far the hardest part to solder. Pro tip: heat the pad and lead with the iron, then feed the solder on the opposite side.



You may find it easier to populate and solder LEDs that are not right next to one another. We recommend starting with these four:

Be careful not to melt the BUTTON or SWITCH with your soldering iron as you solder the Battery Clip on the opposite side.
There is a battery polarity indicator on the board. Or, match the + and - signs with the signs on the Battery Clip.

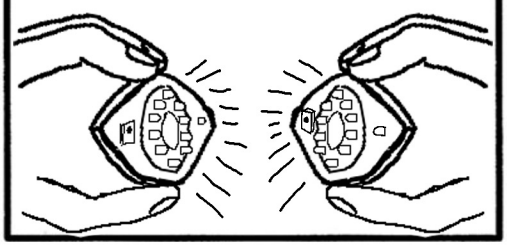


HOW TO PLAY!

When first powered, your eyeball will have ONLY ONE animation, or "gene." You can only share this gene, NOT genes that have been collected.

To share, point eyeballs at each other. They talk using infrared (IR).

LEDs will flash WHITE, indicating they want to exchange genes. Each user has 5 seconds after the flash to press the Button and collect the gene. Both must press to collect.



If LEDs flash RED, you have already collected that gene.

Press Mode Button to cycle through collected genes.

Genes will be stored even when power is lost.

Your original gene will be shown when powered off and on again.