#78

Please return instructions when finished

Brickworld

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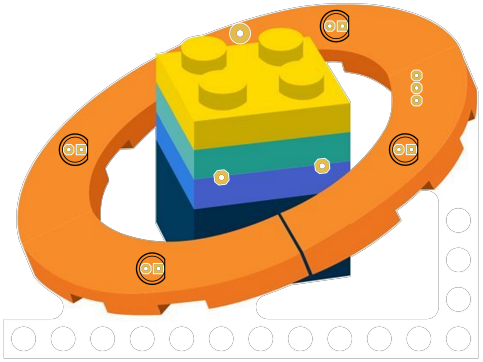
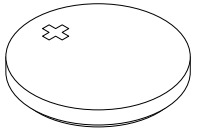
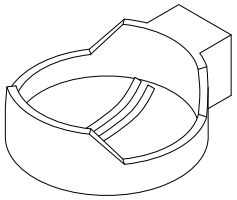
Parts List

Printed circuit board (PCB)





2032 battery

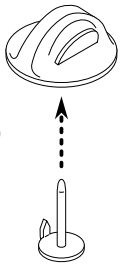


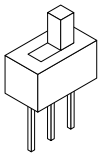
Battery holder

Tie tack clasp

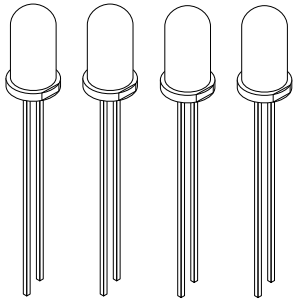
(packaged together)

Tie tack





Switch



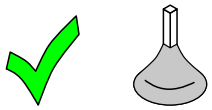
LED (4x)

Need help? Please raise your hand.

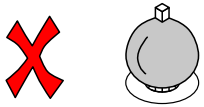
How To Solder

Solder flows and bonds to *hot* metal. The iron is used to melt the solder *and* heat the parts so the solder sticks.

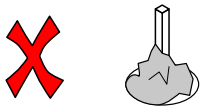
With a little practice, a good a solder joint should take about 8 to 10 seconds. The iron does not move during this time.



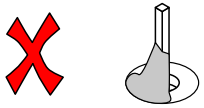
Good joint.
Nice job!



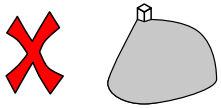
"Cold" solder joint.
Not enough heat.
Reheat and re-flow.



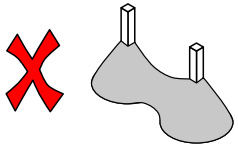
Rough solder joint.
Not enough heat.
Reheat and re-flow.



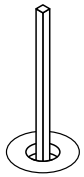
Not enough solder.
Reheat, add more, re-flow.



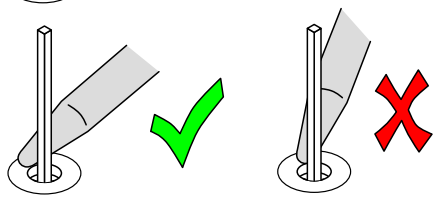
Too much solder.
Next time, use less.



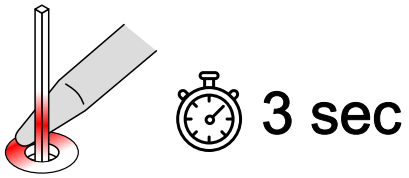
Bridge joint / short circuit.
Reheat and try to remove.



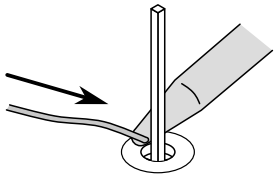
Insert and align part.



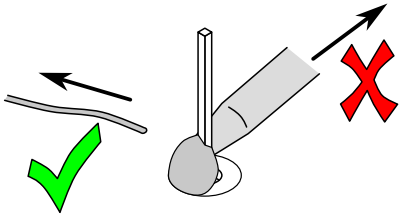
Touch iron to part wire *and* PCB pad.



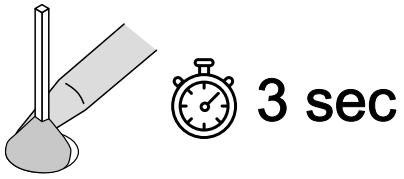
Heat wire and pad.



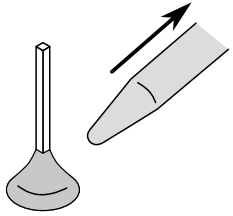
Melt about 1/2 inch of solder into joint.



Remove solder.
DO NOT remove iron.

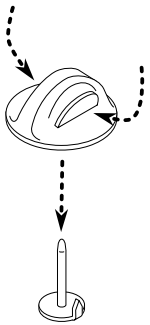


Continue to heat solder and parts. When everything gets hot enough, the solder often "pops" and flows into place.

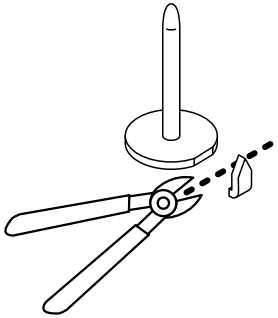


When solder flows across parts, remove iron. The solder will cool and harden in seconds.

Step 1: Tie Tack



Remove tack from clasp by squeezing sides.

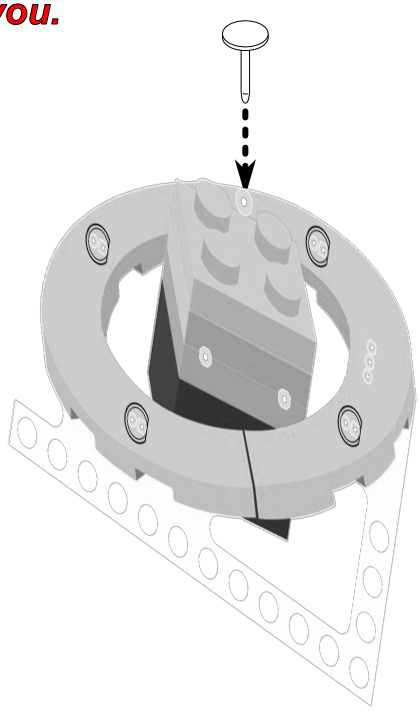


Use cutters to remove the “spike” from the tack.

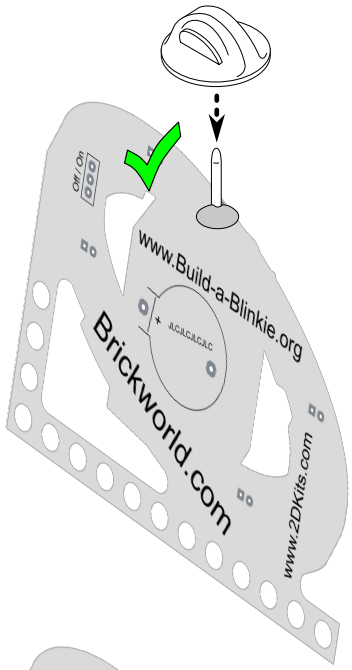
Make sure spike doesn't fly off and hurt you or anyone around you.

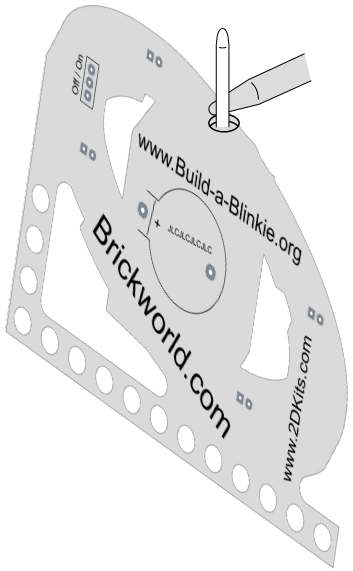
Insert tack from front of board.

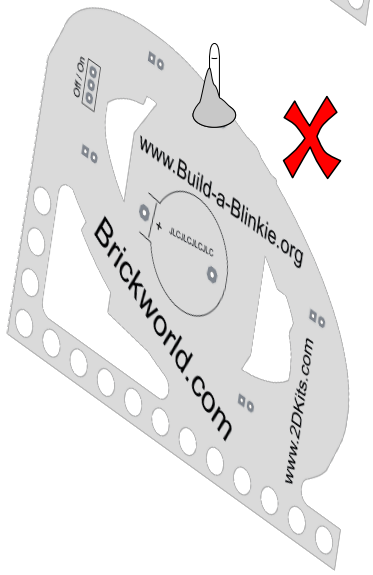
Make sure it lies flat.

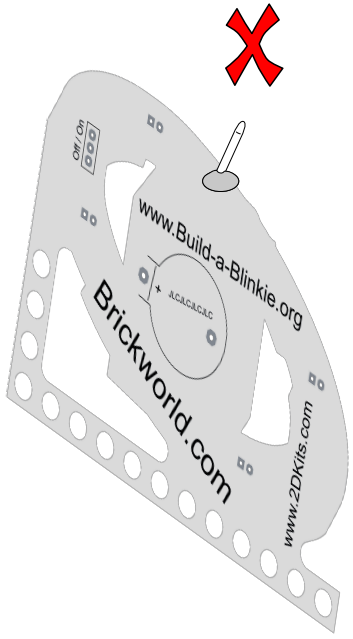


Solder pin to board. The pin is large and may require more time to heat than other parts.

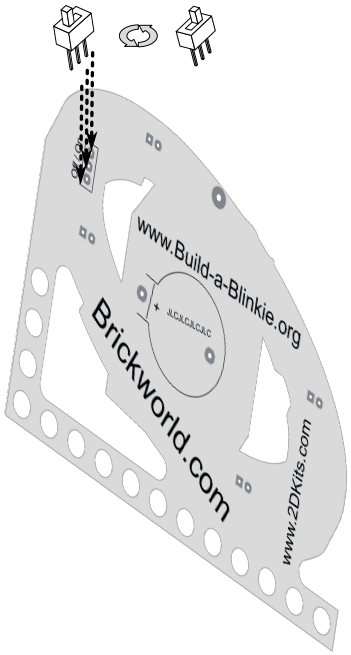


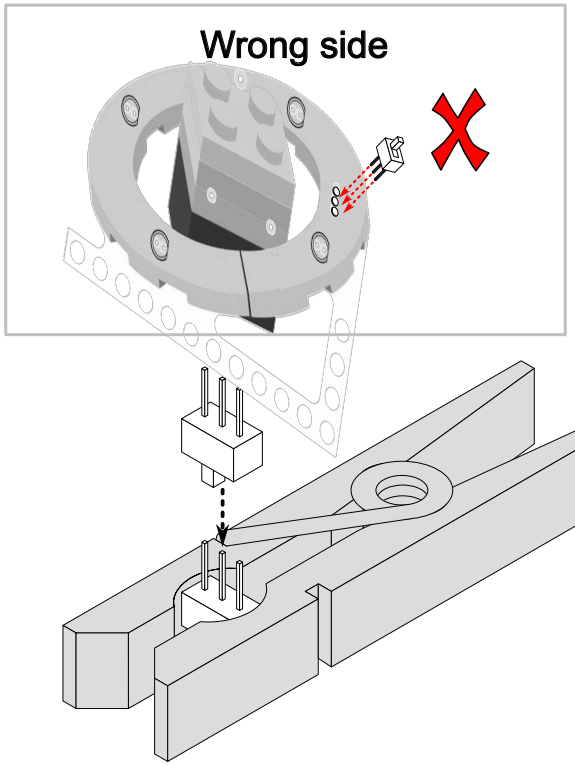


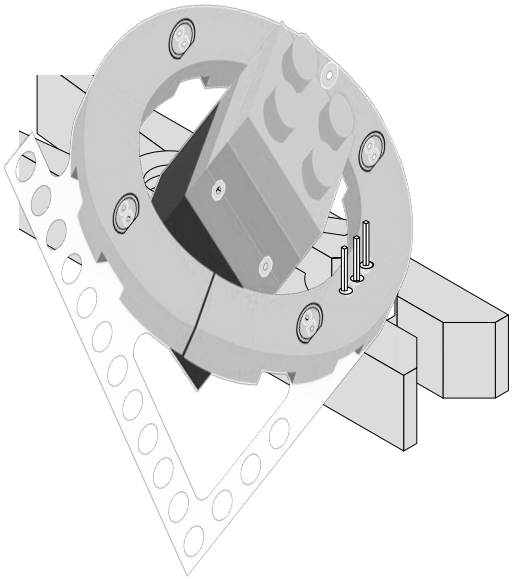


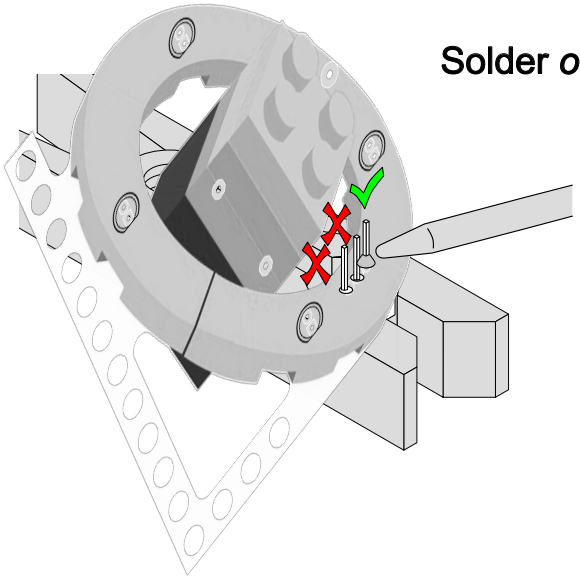


Step 2: Switch



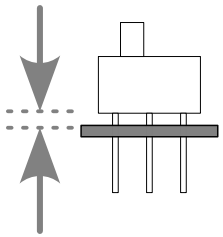


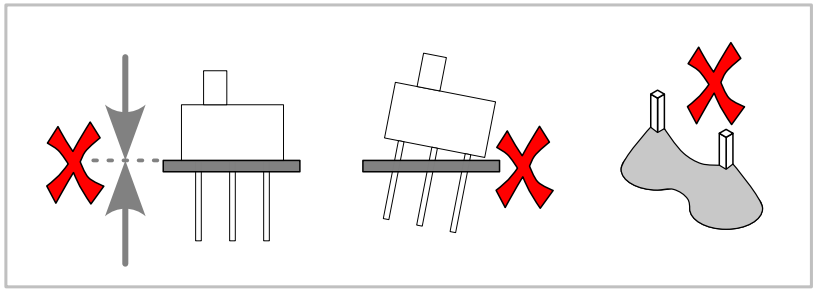


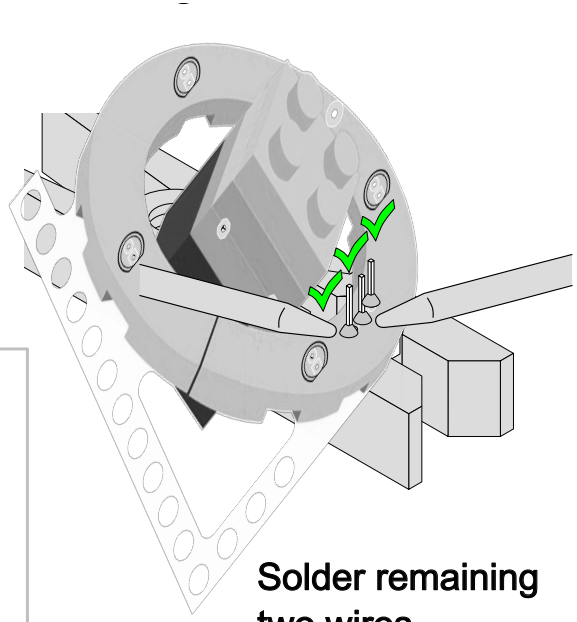


Solder *one* wire.

Double check

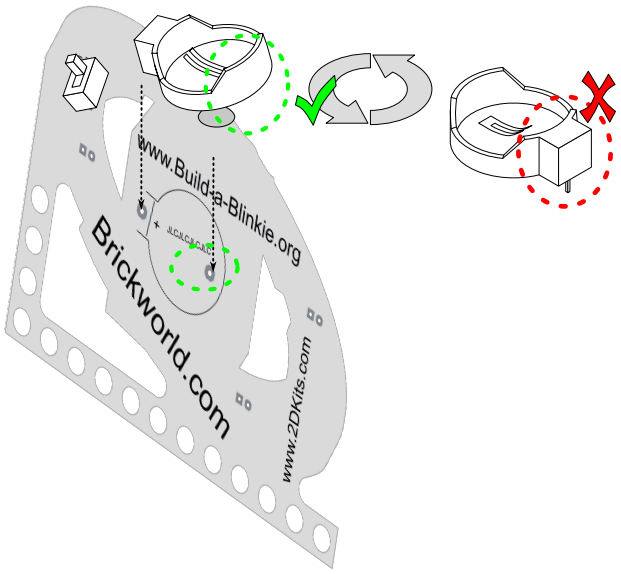




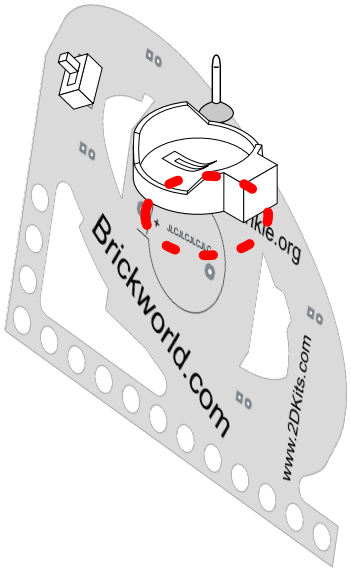


Solder remaining two wires.

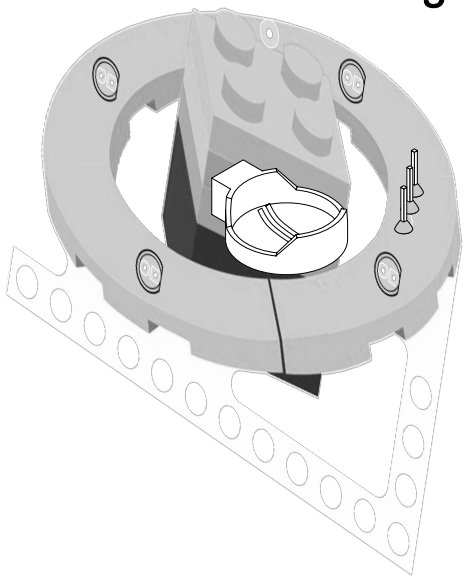
Step 3: Battery Holder



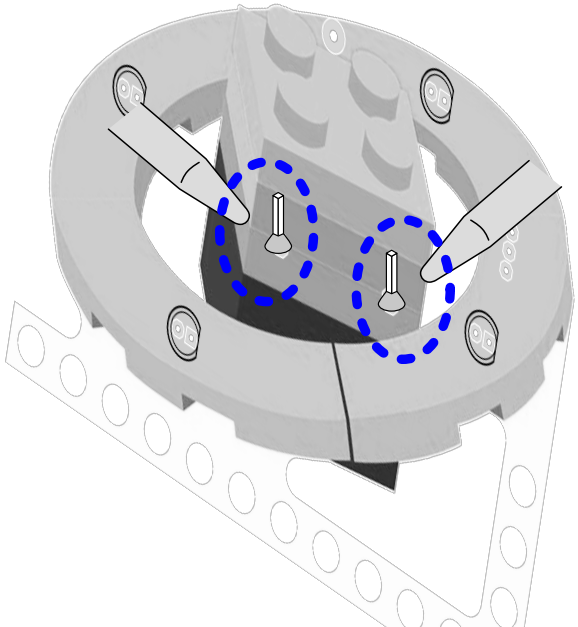
Wrong direction.
Match part outline on board.



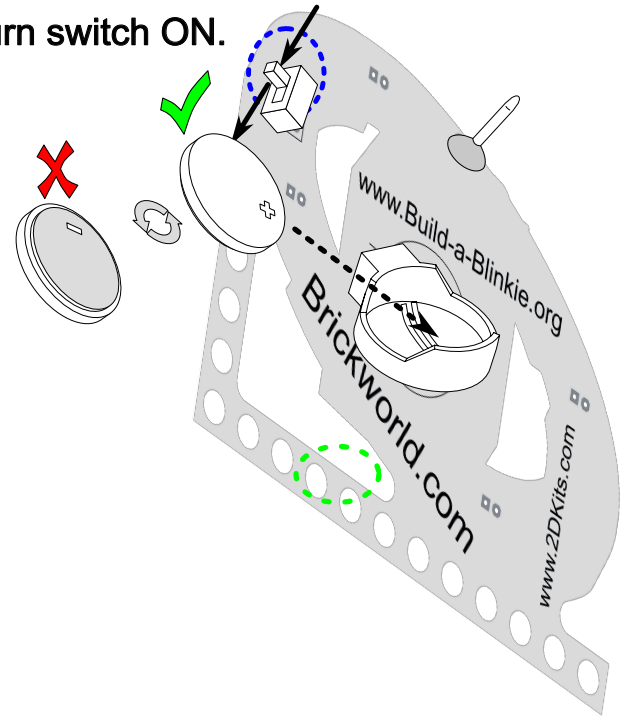
Wrong side



Solder battery holder.

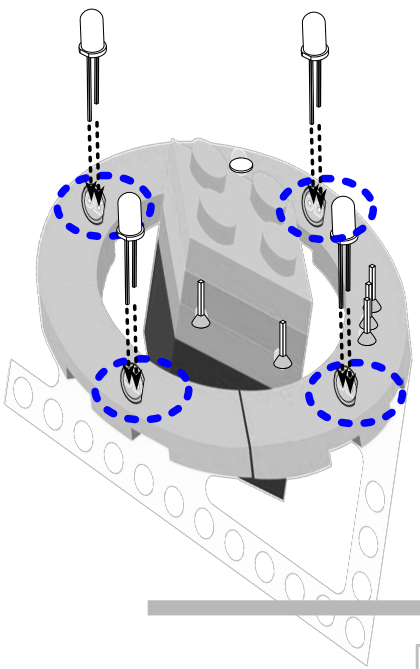


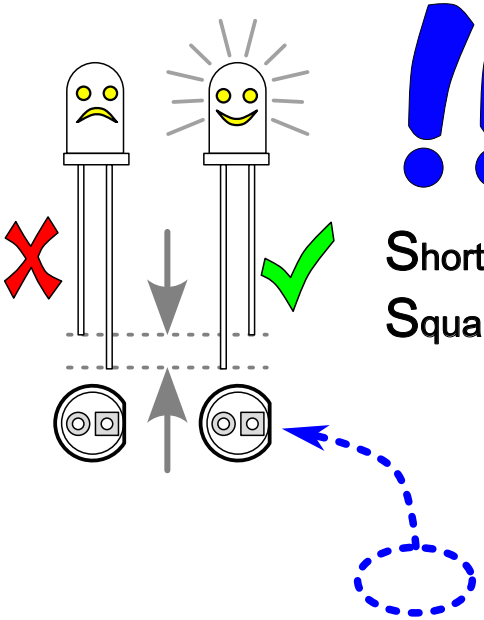
Turn switch ON.



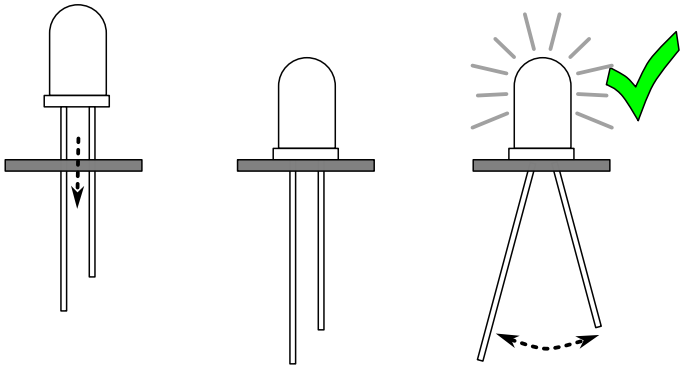
Insert battery, flat side up. Slide edge in, then push down to snap into place.

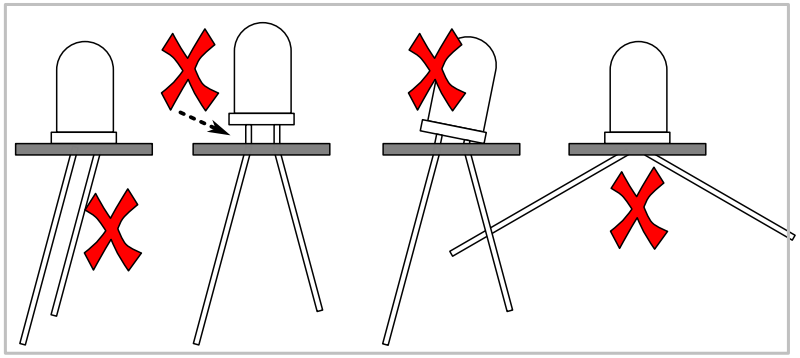
Step 4: LEDs

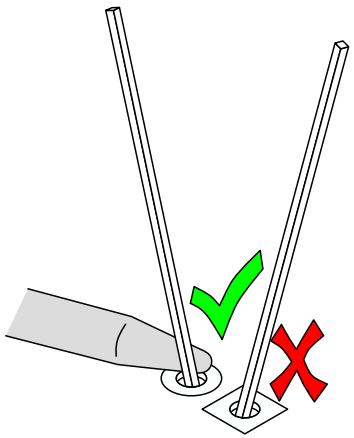




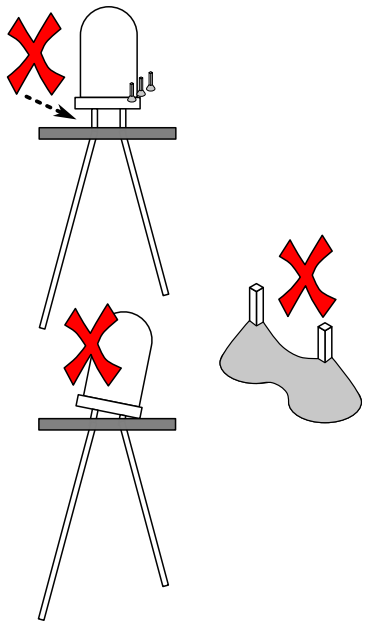
Short wire,
Square hole!



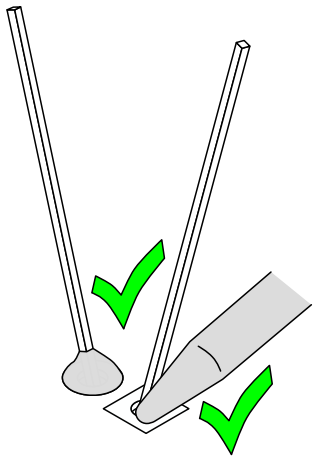




Solder *one* wire.

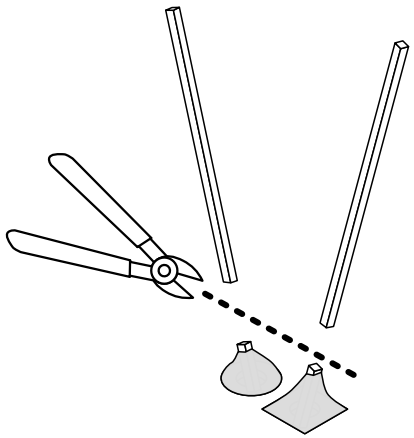


Fix any issues.



Solder the other wire.

Once LED is working, trim wires.



Make sure wires don't fly off and hurt you or anyone around you.

Return instructions
Leave solder