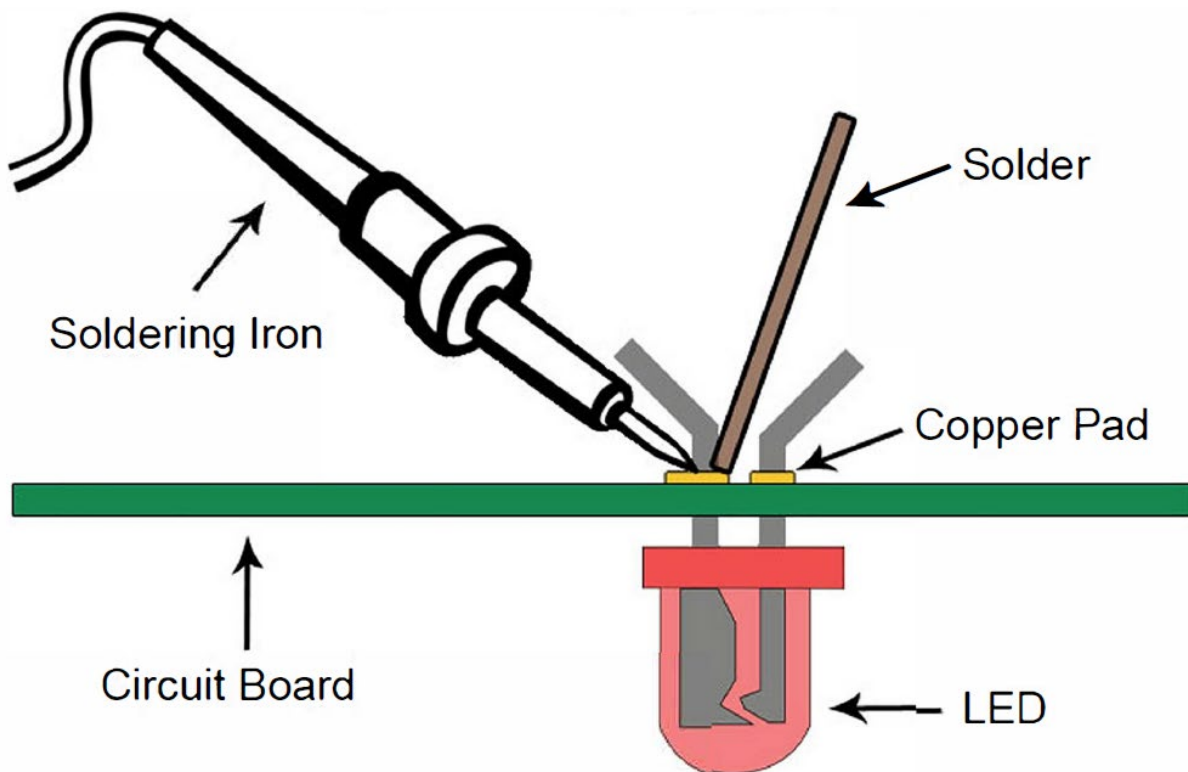


Soldering Basics

Required Tools

1. Soldering Iron
2. Solder wire
3. Cutter

How to solder



Source: [Makerspaces.com/how-to-solder](https://makerspaces.com/how-to-solder)

Step 1 - Heat soldering iron.

Step 2 - Touch soldering iron to copper pad and component lead. Hold for 2-3 seconds.

Step 3 - Add solder to copper pad opposite of the soldering iron. Don't touch solder directly to the iron. Solder should surround pad/lead and be a cone shape.

Step 4 - Wait 1-2 seconds and remove soldering iron.

Ideal Solder Joint

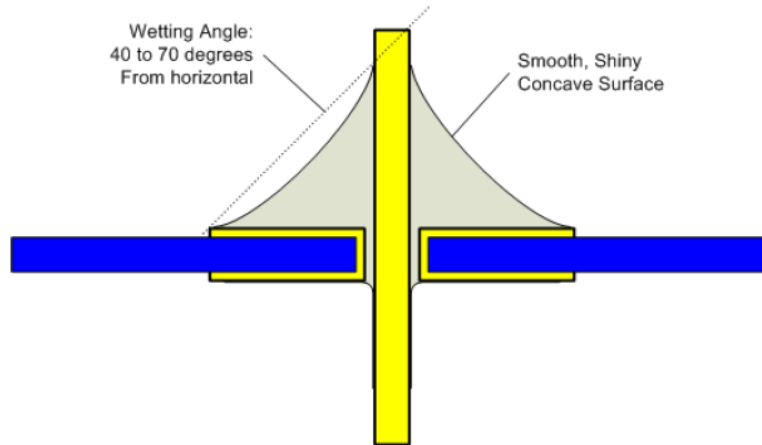


Image Source: Adafruit

Common Soldering Problems

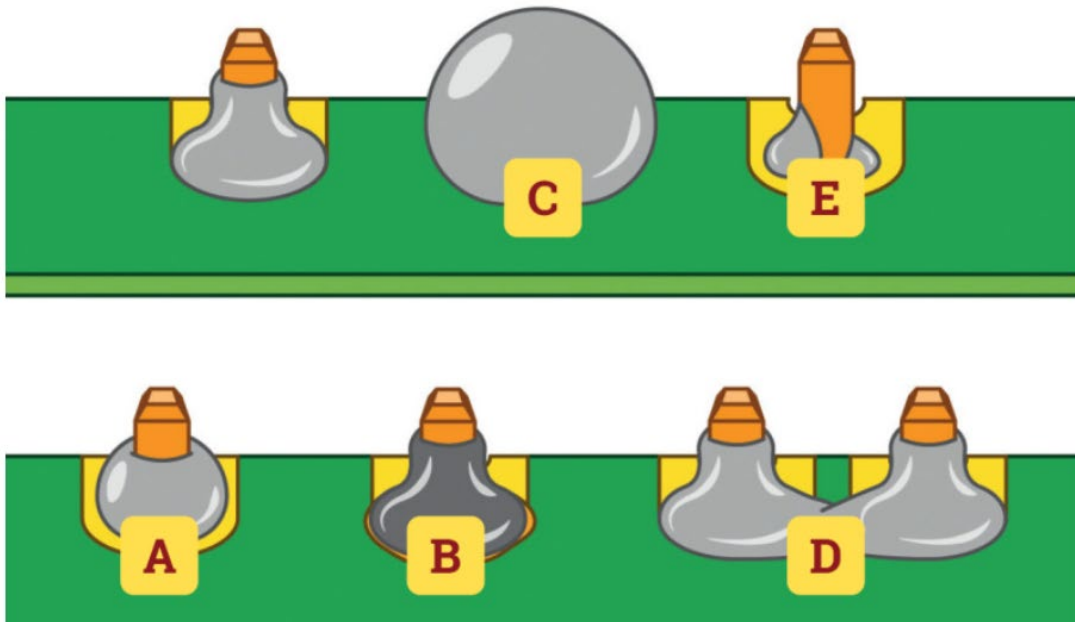


Image Source: magpi.raspberrypi.org



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2105 S Hardy Dr., Unit # 19
Tempe, Arizona, 85282
USA

A: Solder sticking to the pin but not to the copper pad.

Reason: The pad was not heated enough.

Solution: Take your solder iron and place it where the pad and the pin meet, making sure that it is pressing against both this time. After a few seconds, the solder should reflow and make a good joint.

B: Dark brown or black discoloring of finished joint.

Reason: Solder iron was left on the joint and pad for too long resulting in an overheated joint with burnt flux.

Solution: Remove solder using 'desoldering braid' and resolder. A strip of desoldering braid (refer to Desoldering Basics instructions) is included with the kit. The burnt flux can be removed with a little bit of scraping or isopropyl alcohol and a cotton swab.

C: Solder is entirely covering the pin.

Reason: Too much solder is used.

Solution: Having too much solder does not cause functional problems. It just does not look very attractive. You can use the strip of desoldering braid to remove some of the solder.

D: Bridging between two pins

Reason: Too much solder is used causing the excess solder to flow onto the other pin.

Solution: Try reflowing the solder by putting your iron against one of the joints. If this does not work, use the desoldering braid strip to remove some of the solder.

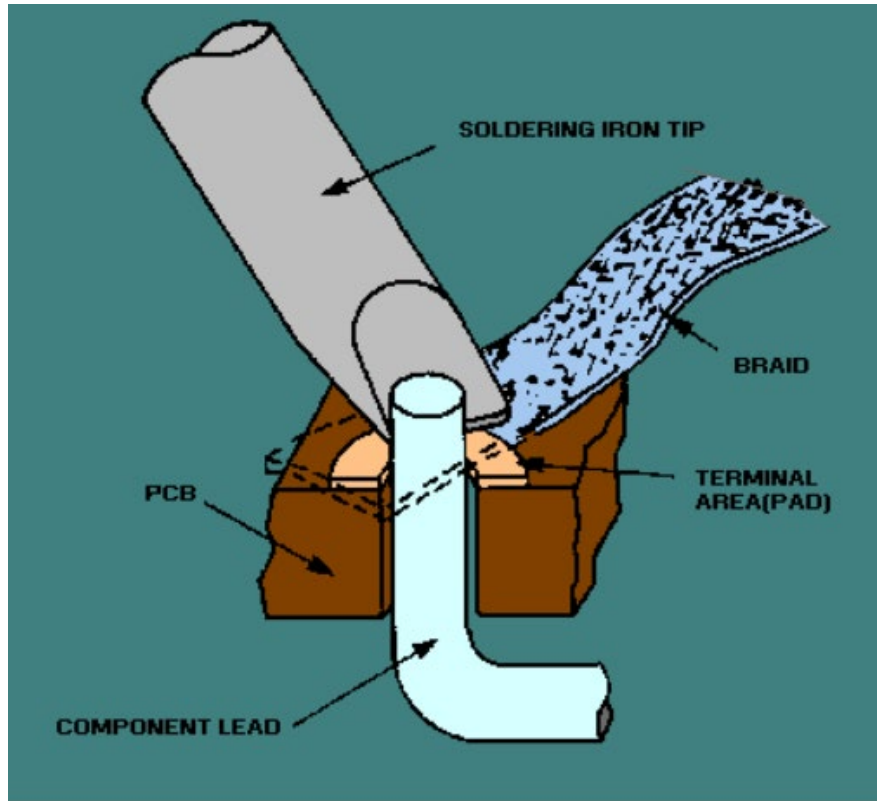
E: Can still see copper pad or a visible gap between the pin and the pad.

Reason: Too little solder

Solution: Put the iron back onto the solder joint for a few seconds then apply more solder.



Desoldering Basics



Step 1: Place the desoldering braid over the solder joint

Step 2: Place soldering iron over the braid

Step 3: Wait until the solder wicks through the braid.

Step 4: Lift up the iron and the braid at the same time.

Image source: Integrated publishing