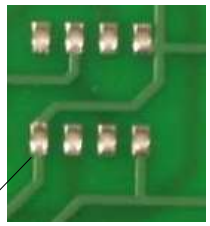
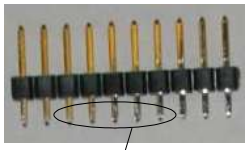
www.breadboardcompanion.com



Pad – part of pcb that makes electrical contact with the pin of an electronic component



Pin- part of electronic component that makes electrical contact with the pad of the pcb

Joint – completed soldered connection between the pad of a pcb and the pin of an electronic component

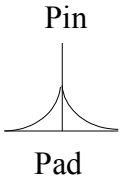
Tips on Soldering

Here are some tips on soldering for those who have little to no experience at it. One solder joint can make the difference between a kit that works and one that does not.

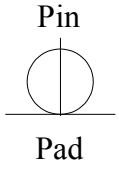
Purpose of Solder

To connect, electrically and mechanically, the pin of a component with the corresponding pad of the printed circuit board (pcb).

1. With the exception of some of the header pins, all *components go through the top of the board* (side with print) and are soldered on the bottom.
2. Use low heat (15-30W). Be careful *not to overheat the pads* with the soldering iron. Too much heat can pull them right off the pcb.
3. Keep your *soldering tip sharp and clean*. Do not work with blunt tips.
4. If available, *apply soldering flux* to the surfaces you wish to solder together before soldering. This allows the solder to "stick" to the surfaces much better.
5. *Apply solder to the tip of the iron* before applying it to the pin and pad. Hold the pcb and component with one hand and hold the soldering iron with the other.
6. Upon inserting a component into the board, *bend the legs so that it will stabilize* without you having to hold it into place.
7. *Solder goes where the heat goes*. Apply heat to both the pin and the pad as you apply the solder.
8. *More solder is NOT better* (Solder should NEVER bridge two pads). However, make sure to apply enough solder to c*ompletely fill the hole* you are soldering.
9. Soldered joints should look like:



Not like:



10. In order to avoid cold solder joints (joints that are connected mechanically, but not electrically), *check all soldered joints with an Ohmmeter* (pin sticking through the board and connecting pin should read "0" resistance).
11. In order to avoid unwanted electrical connections, check all neighboring pads with an Ohmmeter (these surfaces should read infinite resistance).
12. Have desoldering braid or other desoldering tools available.
13. After the pins have been soldered, they should be clipped with wire cutters. Diagonal Cutters will allow you to clip it flush with the solder. ALWAYS USE SAFETY GOGGLES WHEN CLIPPING THE SOLDERED PINS.