Tools | Adafruit Guide To Excellent Soldering | Adafruit Learning System

Building a Soldering Toolkit

If you are just getting started in Electronics, Ladyada's Electronics Toolkit (pictured above) is a great kit full of quality tools - including everything you need to make great solder joints. If you would rather build your toolkit piece-by-piece, read on:

Choosing a Soldering Iron

There are many types of soldering irons. For most Adafruit kits and projects, you will want a pencil-style soldering iron with 25 watts or more.

An under-powered iron is a poor investment. It will end up costing you more in ruined kits and damaged components.

- It will take longer to heat the joint, allowing heat to spread to the component being soldered - potentially overheating and damaging the component.
- Longer heating times will also give more time for oxides to form on the surfaces being soldered. This will prevent the solder from flowing and result in a poor joint.
- Longer recovery times between joints can result in frustration, 'cold joints' or both.

You don't need to spend a fortune to get a good iron. Advanced features such as temperature control and interchangeable tips are nice to have, but not essential for hobbiest-level work.

Basic Irons

There are many basic pencil style irons that are suitable for hobbiest use. But you will need one that is capable of heating the joints quickly enough. Choose an iron with 25 watts at a minimum.

Better Irons

An adjustable temperature iron with a little more power will give you a bit more control and allow you to work faster. The Adjustable 30W 110v Soldering Iron in the store is an excellent choice.

This iron is also available as part of Ladyada's Electronics Toolkit, which contains many other

essential soldering tools.

Best Irons

A professional-style temperature-controlled iron with interchangeable tips and 50 watts or more of power is a joy to work with. Feedback control keeps the tip temperature at precisely the level you set. The extra watts speed recovery time so that you can work faster. Interchangeable tips let you select the ideal tip shape for specialized work.

The 65 watt Hakko FX-888 is an excellent professional quality soldering iron. The Weller WES51 or WESD51 are also excellent choices for serious electronics work.

Irons to avoid

In addition to underpowered irons, there are several types of irons to avoid for general circuit-board work.

For emergencies only:

These irons are handy for occasions when you have no place to plug in a regular soldering iron. But they are not the best choice for a primary soldering tool:

- **Butane Powered Irons** have plenty of power but are difficult to control.
- **Battery Powered Irons** are generally underpowered for most work.

Not for circuit board use:

These tools are not suitable for circuit board work:

- **Torches** of any kind are not suitable for electronics work and will damage your circuit boards.
- **Soldering Guns** are OK for working with heavy gauge wires, but don't have the precision necessary for soldering delicate electronics components.
- ***Cold-Heat*™** Irons inject current into the joint to heat the tip. This current can be damaging to sensitive electonic components. Avoid these irons for electronics work.

Essential Tools and Supplies:

These tools are the bare-minimum essentials required for soldering:

Stand

If your soldering iron does not have a built-in stand, you will need a safe place to rest the hot iron between uses. A Soldering Iron Stand will keep your iron from rolling around and protect both you and your work surface from burns.

Most stand holders come with a sponge and

tray for cleaning your soldering iron.

Solder

Standard 60/40 lead/tin Rosin Core Solder is the easiest type to work with.

Diagonal Cutters

You will also need a pair of Diagonal Cutters for trimming component leads after soldering.

Other Handy Tools and Supplies

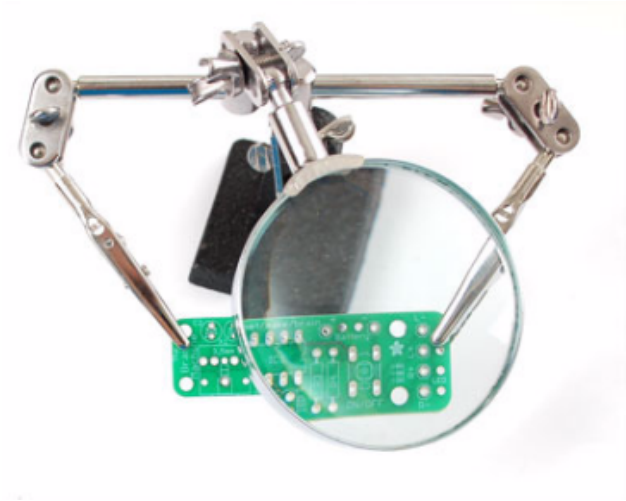
These are some other tools and supplies you might find useful when working on soldering projects.

Vise

A vise holds your work steady as you solder. This is important for both safety and sound joints. The Panavise Jr is an ideal size for most Adafruit kits and projects.

Third Hand

A Helping Third Hand Tool is a good for smaller boards, or to hold things in place while terminating or splicing wires.



Solder Sucker

A Solder Sucker is a very helpful tools for removing excess solder or when you need to de-solder a joint. As the name implies, this device literally sucks the solder out of the joint.

Solder Wick

Solder Wick is another way to clean excess solder from a joint. Unlike the solder sucker, the wick soaks up the molten solder.

PREPARATION

Last updated on 2015-05-04 at 04.27.27 PM
Published on 2012-09-06 at 02.00.50 PM