Safety:
☐ Don't touch the hot end of the iron to your skin, or vice versa.
☐ Wear safety glasses.
☐ Use an exhaust fan so you don't breathe the fumes.
☐ Use solder that does not contain lead metal, if it is available. "Lead Free Solder"
☐ Turn off the soldering iron when you are not using it.
☐ Wash your hands when you are done.

Learn the basic techniques:
☐ Solder a splice, use heat shrink tubing
☐ Solder a wire to board
☐ Solder a component to a board

Practice:
☐ Repeat the basic techniques until you are comfortable with them.

Advanced:
☐ Make a 5V circuit tester. (splicing only). Test and debug it.
☐ Make an Arduino Uno header-board-wire connector.
☐ Make an LED and switch module. Test and debug it.

Key Concepts and Order of Operations:

Flux: *Solder (for electronics) is a tube of metal with a center core of flux. Flux melts and burns away in a puff of smoke. The flux is there to break the surface tension to allow the solder to wet to the joint components.*

☐ Apply the iron to the joint, and then introduce some solder between the joint and the iron to break the surface tension.

Viscothermal Pumping: *Solder flows towards heat.*

☐ Once the joint is hot enough to melt solder, apply the solder on the opposite side of the joint from the iron, so that the solder has to flow through the joint to get to the iron.

Thermal Mass: *Things take time to heat up.*

☐ After you have applied and melted enough solder into the joint, stop adding solder, but keep the iron on the joint for a count of 1, 2, 3, to allow time for the iron to fully heat the joint and new solder, so that the solder flows fully into the joint.

More information here: http://pmsciart.com/2017/11/soldering/

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