IEEE's Hands on Practical Electronics (HOPE)

Week 1: Course Introduction, Safety, Soldering, Terminology

Definitions:

IEEE: **I**nstitute of **E**lectronic and **E**lectrical **E**ngineers
Standards: A balanced blend of technical alternatives, economic needs, and global requirements
Solder: An alloy used for soldering.
Soldering: Make a connection by connecting the wires with solder.
Schematic: Ideal plan for the circuit
Closed Loop: There are no breaks in the circuit; there is a path for current to flow
Open Loop: There is a break in the circuit resulting in no path for current flow
Leads: The wires that stick out from your components

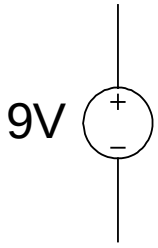
Soldering:

1. Lay out the circuit on the breadboard
2. Prepare the wire - Strip ¼" – ½" of insulation from the ends of the wires.
3. Twist the exposed strands.
4. Clean the soldering iron tip.
5. Tin the wire by placing the tip of the soldering iron along the exposed strands.
6. Apply solder to the wire. The solder will melt and form a connection.
7. Solder so all the connections are tight (ex: connect the battery to the LED)
8. Make sure to solder right on top of the junction of where the two wires join

Circuits:

Circuits will work only if there is a closed loop.
Circuit Symbols:

Battery:



Resistor:

LED: