**How to solder properly:**

1. **Gather the proper materials together:**
2. Soldering iron
3. Soldering Stand
4. Solder
5. Safety Glasses
6. Damp Sponge
7. Solder pad
8. Electricity outlets nearby or power strip
9. (A file or tip tinner is not necessary, but great to have on hand to clean a solder tip)
10. **Follow the correct steps to solder parts to a circuit board.**
    1. Plug your soldering iron in and let it heat up. (Approx. 5 min)
    2. Put on your safety glasses.
    3. Locate your circuit board and the components you wish to solder into the board.
    4. Find the holes in the board that accommodate the first part you want to solder. Place the part into the board by pressing the leads of the part through the board in the proper location.
    5. Bend the legs of the part back slightly to hold the part in place.
    6. Turn the board over to show the copper side (solder side) up.
    7. Wipe the soldering iron tip over the wet sponge to clean and cool it briefly.
    8. Apply a small amount of solder to the tip of the soldering iron. (This helps the solder to flow freely from the heat of the tip)
    9. Make contact with the hot end of the soldering iron between the copper of the board and the lead of the part you want to solder. You MUST make contact to the lead AND the board to get the solder to flow freely to the part and the board.
    10. Bring the solder in from the opposite side and touch the solder to the copper of the pad that has been heated. The solder travels to the source of heat, so you should see the solder flow right around the parts you are trying to bond together.
    11. Apply just enough solder to create a small “Hershey Kiss” shape around your lead.
    12. Never let the soldering iron stay in contact with the board more than just a few seconds. Longer contact with the board will melt the fiberglass backing the copper trace is attached to and ruin the circuit board. If you get a brown gooey substance around your solder joints, it usually means you are applying too much heat.
    13. Once the lead is soldered, or all the leads of a single part are soldered, use a pair of wire cutters to clip the wire lead right above the solder joint. BE SURE your pliers are sharp and CUT the wire cleanly. NEVER PULL UP WHEN CLIPPING A LEAD. If you PULL when cutting the wire lead off, you can damage the circuit board by popping the copper trace up from the board.