



Giant Soldering Iron

// Overview:

Most electronics companies are always trying to make everything smaller and smaller. At SparkFun we do that, but we also like to make super sized teaching tools. This tutorial shows you how to make a gigantic soldering iron. This giant soldering iron is a great teaching tool for all ages. We use it to teach a large number of people PTH and SMD soldering because it's hard to demonstrate technique to a bunch of people with an itty bitty soldering iron. The materials depend on how large you want to make your soldering iron, if you decide to go bigger bear in mind that you will need to buy bigger parts.



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SparkFun Electronics Giant Soldering Iron Educational Material



// Giant Soldering Iron Assembly:

Materials:

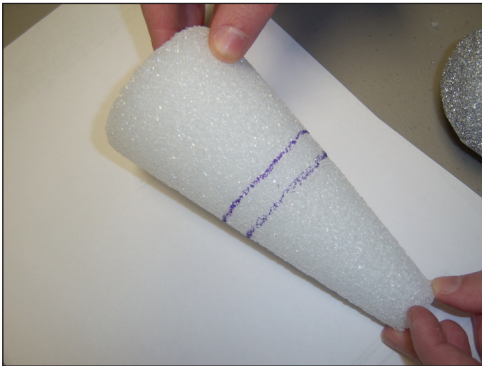
Tube of some type (we used cardboard, size is up to you), a cone that will fit the end of the tube (we used Styrofoam cones bought from a craft store, but for the really big soldering iron we used athletic cones), a sphere (we used Styrofoam) silver paint, black paint and some strips of Velcro.

Tools:

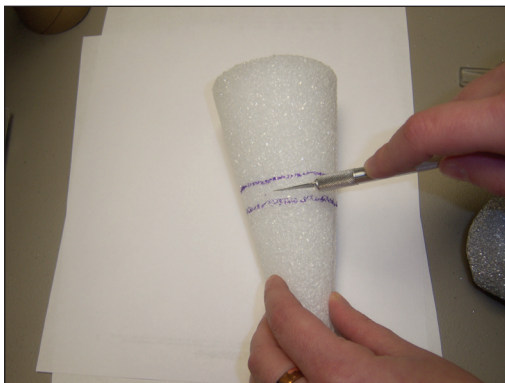
Xacto knife, paper and painter's tape (any type of tape that comes off easily without leaving a mark).

Assembly:

1. Insert the cone into one end of the tube and use a pencil to mark the cone at the point where it makes contact with the tube. Mark all the way around the cone.

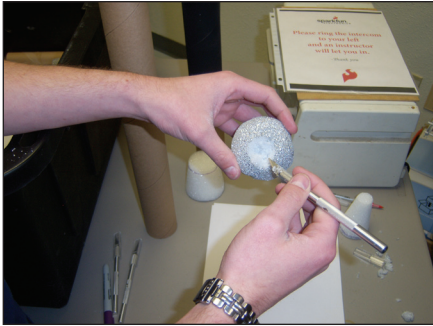


2. Take the cone out of the tube and cut off the bottom section just below where you marked it.

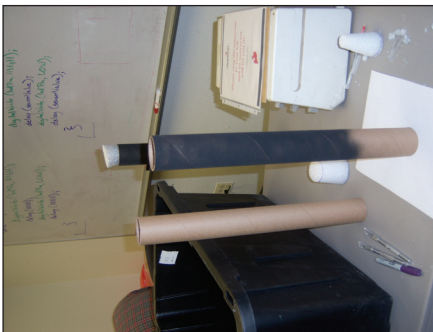


// Giant Soldering Iron Assembly:

3. Spray paint the entire cone piece with silver paint and set it aside to dry.
4. Take the sphere and use your xacto knife to hollow out a portion of the sphere so that it fits over the tip of the cone. The sphere should cover $\frac{1}{2}$ to $\frac{2}{3}$ of the length of the cone.



5. Paint 2/3 of the tube black and wait for it to dry.

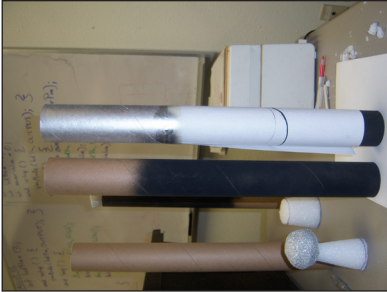


6. Use the tape and paper to mask off the section of the tube you painted black. Make sure your tape is applied in a straight line because this is what will create the straight line indicating the end of the handle of the soldering iron.



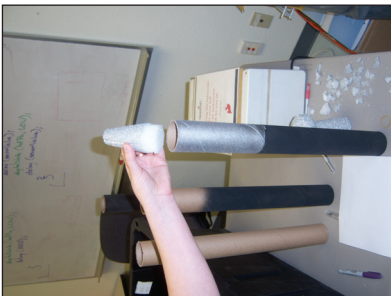
// Giant Soldering Iron Assembly:

7. Paint the exposed portion of the tube silver. Paint the entirety of the cone. Paint the sphere silver as well. Wait for the paint to dry.



8. Take the tape and paper off the tube.

9. Glue the cone onto the end of the tube that is painted silver, you may need to shave down the bottom of the cone to fit it into the tube. The key thing is to make sure that the cone is securely attached to the end of the tube.



10. Cut four strips of Velcro about half the length of the cone and attach them to the tip of the cone. These will represent oxidation as well as a way to attach the sphere to the tip of the giant soldering iron. The silver sphere represents the solder that should be left on the tip of the soldering iron to prevent oxidation. To attach the sphere to the tip of the soldering iron attach two of the four strips of Velcro to the inside of the hollowed out portion of the sphere you created in step 3.



Now you're ready to show off your new giant soldering iron to your students so they can grasp the concepts of how it works.