



CAUTION

Tool 'GUZYhm
''' Guide

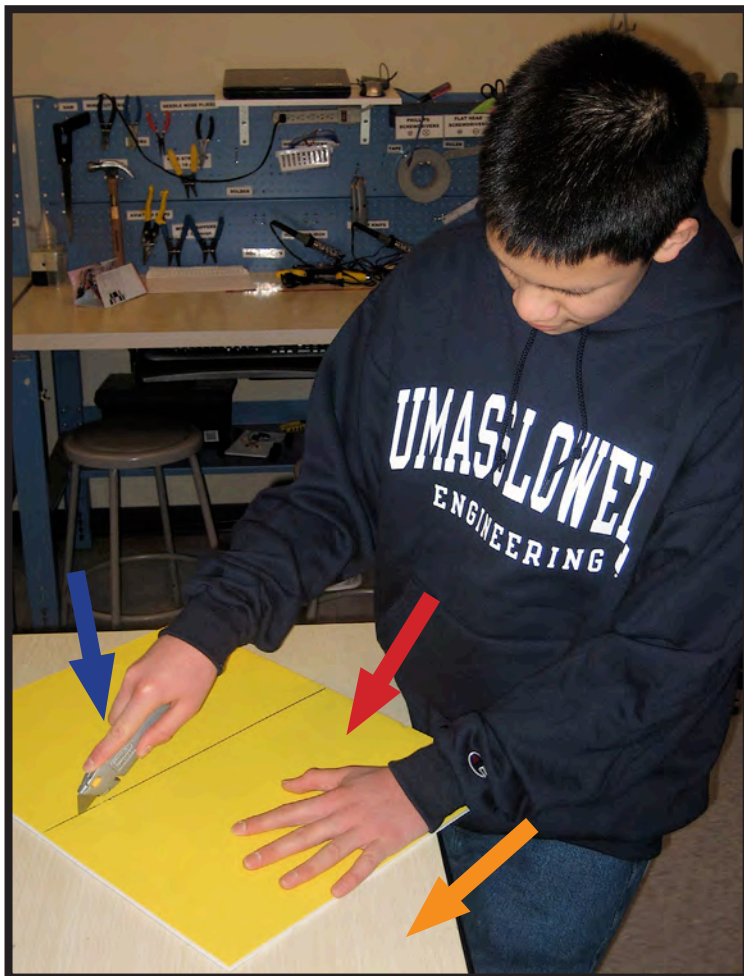
CAUTION

Using a UTILITY KNIFE

Utility knives are used for cutting soft materials such as foamboard and cardboard. **Never use a utility knife to carve or whittle wood, or cut hard materials.**

Here are the things to remember when using a utility knife:

- Razor blades cause serious cuts - always pay close attention to your work! Make sure your fingers are never in the path of the blade – keep your free hand at least 6” away from the blade when cutting.
- Stand up when cutting so you can have good control over your knife.
- Always cut against a solid surface - never cut materials while holding them in the air or on your lap.
- Hold the knife as shown. Press down against the workbench and drag the knife slowly toward you. Don't try to cut too quickly or use too much force, or you may slip and get cut!



KEEP YOUR UTILITY KNIFE IN THE CLOSED POSITION WHEN YOU ARE NOT USING IT.

TIP

It takes 2 cuts to go through foamboard – if it takes more than 3 cuts, or if you get a rough cut, change your blade because it is dull.

If you don't have an old workbench, cover your table with a thin piece of wood or heavy cardboard to use as a cutting surface.

Using a HOT MELT GLUE GUN

Here are the things to remember when using a hot glue gun:

- Mark off a “hot area” on your workbench using red or yellow tape and keep your glue gun here when you are not using it.
- ALWAYS ASSUME A GLUE GUN IS HOT, even if it isn't plugged in. Never touch the metal nozzle. Be sure to unplug glue gun when not using it, and wait until cool before storing it.
- Always work directly over the table when hot gluing something – otherwise hot glue could drip onto your legs or feet (which is bad if you have shorts & sandals on).
- Be careful when pressing glued pieces together – HOT MELTED GLUE WILL SQUEEZE OUT FROM BETWEEN THE PIECES - it helps to use a tool (screwdriver or pliers) to hold the pieces together while they cool.

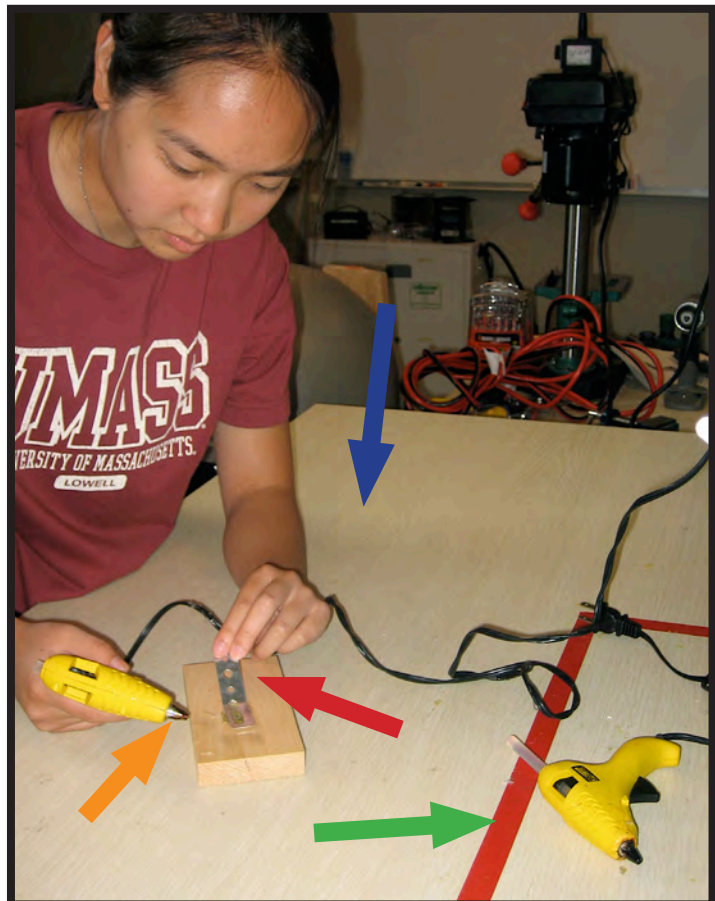
IF HOT GLUE GETS ON YOUR FINGERS, RUB IT OFF IMMEDIATELY TO STOP THE BURNING.

IF YOU GET A BURN, TELL YOUR TEACHER RIGHT AWAY & THEN GO RUN IT UNDER COLD WATER FOR A FEW MINUTES.

TIP

To glue a large area or make a long bead of glue, you should use 2 glue guns, each loaded with a full glue stick.

Hot glue usually does not hold very well when applied to metals and plastics.

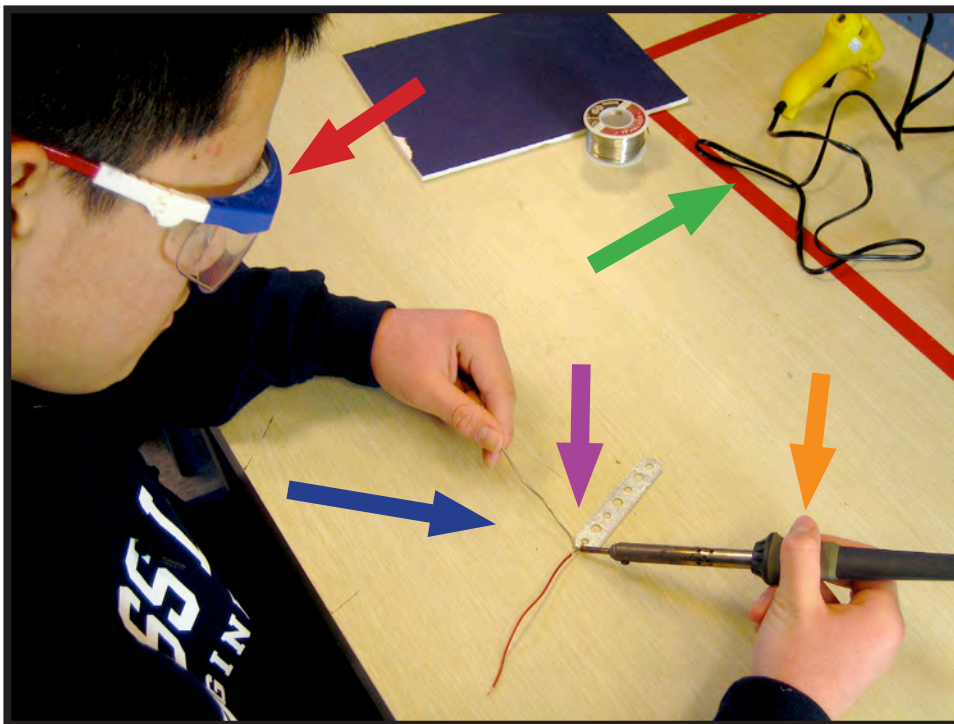


Using a **SOLDERING IRON**

SOLDER CONTAINS LEAD. Do not put it in your mouth, or handle food while soldering. WASH YOUR HANDS when finished. Solder in a well-ventilated area.

Here are the things to remember when soldering:

- YOU MUST WEAR SAFETY GLASSES!**
- ALWAYS ASSUME THE IRON IS HOT**, even if it isn't plugged in. **Never touch the metal part – hold only by the plastic handle.** Unplug the iron when finished, and wait until cool before storing it.
- Mark off a “hot area” on your workbench using red or yellow tape and keep your soldering iron here when you are not using it.
- Always work directly over the table when soldering something – otherwise solder could drip onto your legs or feet (which will hurt if you are wearing shorts & sandals).
- Do not touch the solder joint right after removing the iron – the wire and metal pieces will still be hot – allow 30 seconds to cool down.



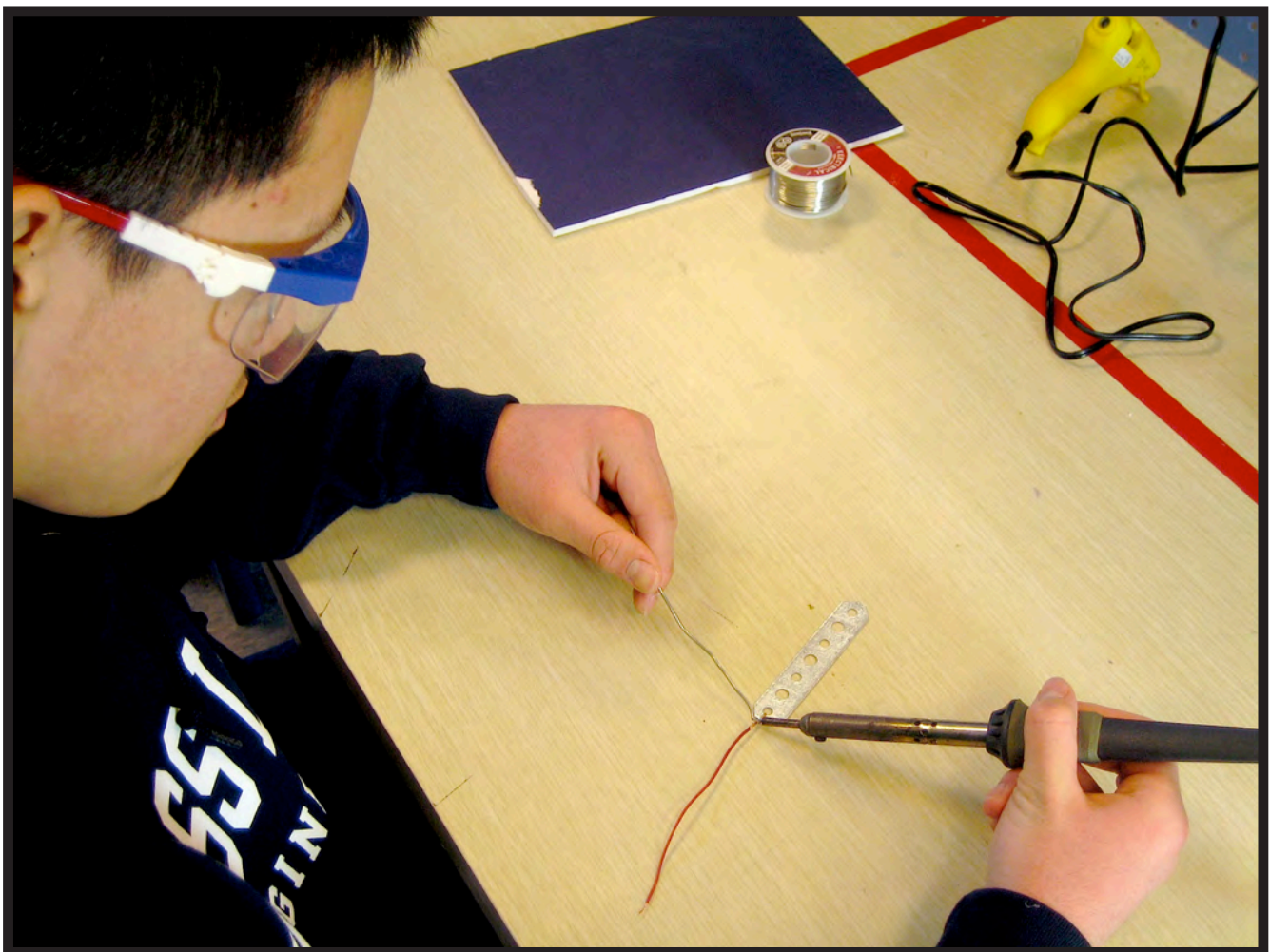
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How to Solder

Soldering is when you melt thin metal wire called solder (say “sawder”), around wire joints in order to make permanent circuit connections.

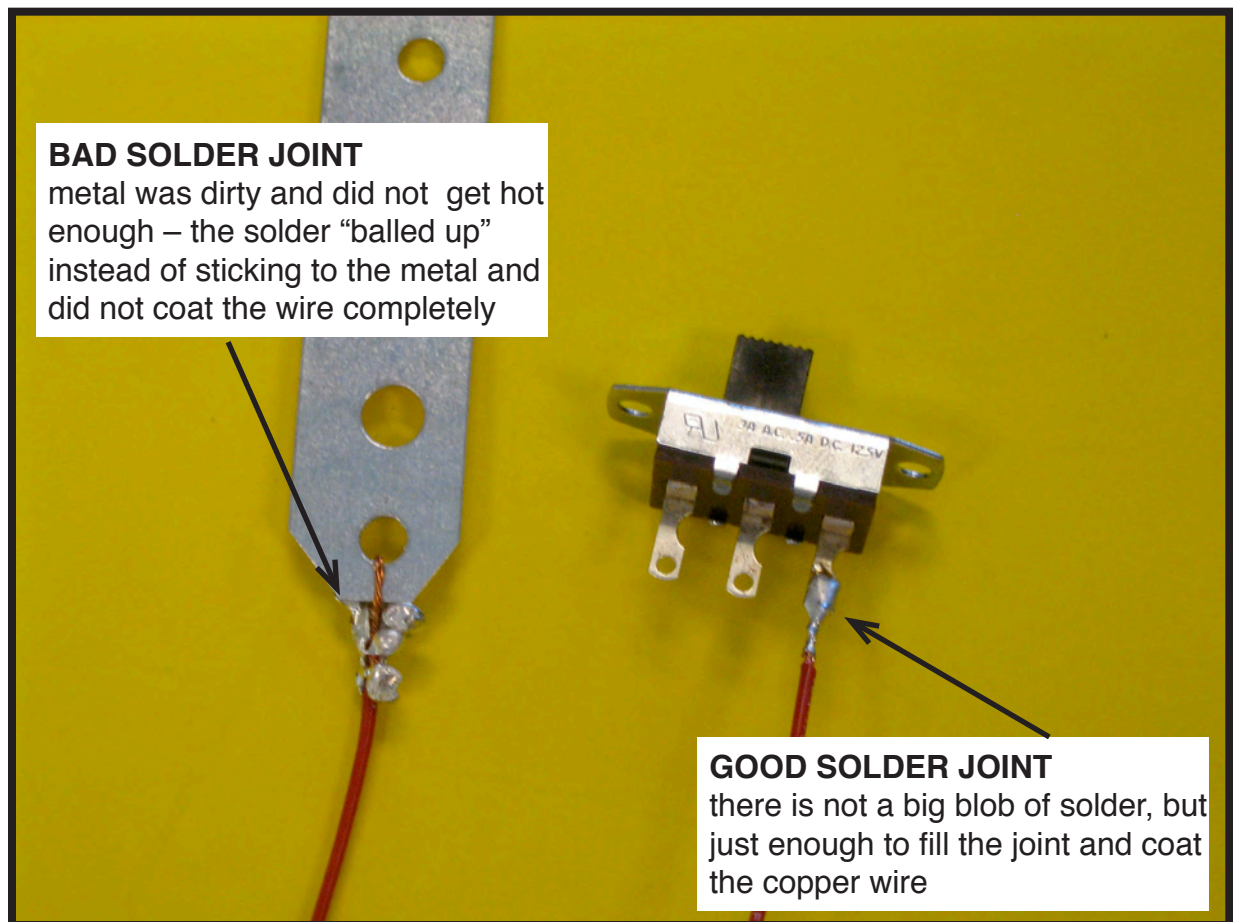
HOW TO SOLDER: Hold the soldering iron against the wire joint for 5 seconds to heat it up, and then poke the solder into the joint until it melts, while still holding the iron in place).

You only want a little solder to coat the wires, not a big ball of solder. The amount of time you must hold the iron against the wire joint depends upon what you are soldering – the bigger the piece of metal, the longer you will have to hold the iron on it to get it hot.



How **NOT** to Solder

HOW NOT TO SOLDER! You do not touch the iron to the solder in the air and try to drip melted solder onto the joint. You are not trying to use the iron to directly melt the solder at all – only to heat up the metal joint, which will melt the solder.



When soldering to dirty or oily metal like nails and pipe strap, you will need to thoroughly clean the area to be soldered, and use sandpaper to rough up the metal before tying the wire onto it.

TIP