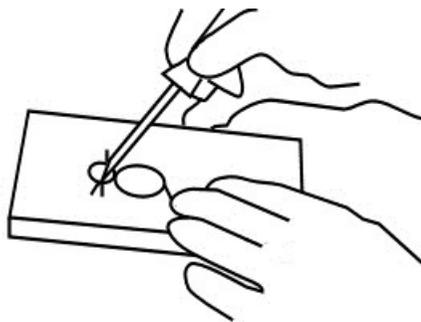


#### 4. Joining the pieces together

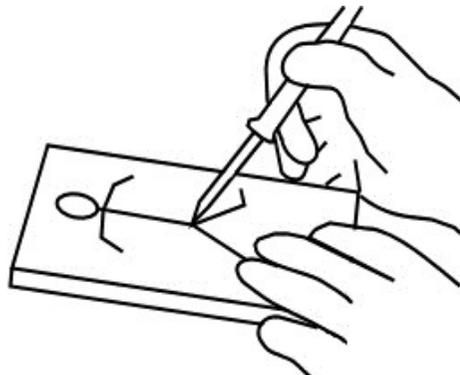
The two pieces should be brought together and both heated up with the soldering iron. Feed in the solder wire so that it melts and joins the wires together. Remove the soldering iron to let the pieces cool leaving them joined together with solder. The pictures show the cat's tail and whiskers being soldered to its body and head.



**Warning Note – Do not hold copper wire with HAND or FINGERS but with pliers or piece of wood.**



The next pictures show the arms and legs of the stickman being soldered to his body.

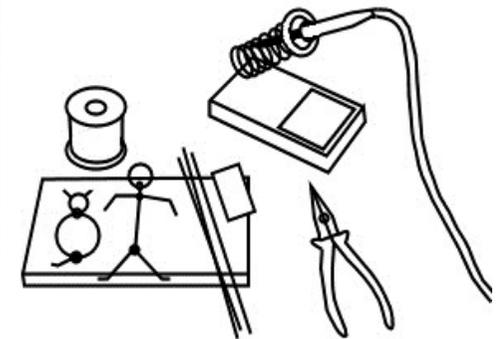


**This is an Education Kit – not a Toy.  
It requires adult supervision during construction.  
The Kit contains small parts and is NOT suitable for children under 8yrs of age.**



## SOFT SOLDER PRACTICE

### INSTRUCTIONS



#### Soft Solder is used to join pieces of metal together

It will be used for making sure that we have a good electrical contact between two pieces of metal. A "stickman" and a cat made from wire with soldered joints are illustrated above.

#### The Practice Kit.

Check that you have all the pieces and put a tick in the column. A heat resistant board is also required as a work surface.

	Description	Number	Check
1	Emery Cloth	1	
2	Pieces of wire 1.2mm dia x 150mm long	3	
3	Coloured ribbon 80cms long	1	

## Making a pendant

A piece of coloured ribbon has been included with the kit so that you can make your cat, stickman or whatever else you have made into a pendant - an excellent present for your Mum.

### Tools Required

- Wire cutters; Pliers
- Soldering Iron; Solder

### Safety

- Remember the soldering iron, solder and the work pieces are HOT and can BURN.
- Observe all the rules when soldering and wear goggles or safety glasses.
- Fit the RCD between the mains and the Soldering Iron or Transformer.

### Note: On how to hold safely when soldering:

- **The copper wire will become hot near to the solder joint. Do not hold it near to the joint. Use pieces of wood or pliers to hold the wire in position.**

### Topics Learned

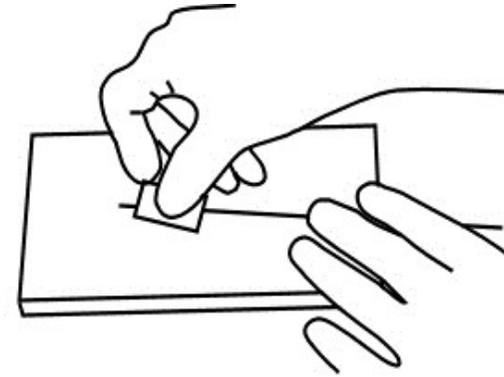
- Melting of metal;
- Alloying of metals

## 1. Planning and Design

- Decide what you want to make
- Cut the copper and bend the pieces to the required shapes.
- Layout the copper wire shapes to ensure they fit together.
- Have no more than 5 soldered joints.

## 2. Cleaning the surfaces.

The surfaces to be soldered must be absolutely clean and this is done by using the emery cloth as shown in the picture. You must rub the cloth over the metal until you cannot see any dirt. Do not touch the cleaned surface with your fingers afterwards because the small amount of grease on them will prevent the solder from sticking to the surface.



## 3. Solder

The solder is made of an alloy of tin, copper and a small quantity of other alloys. It has a melting point of about 200 degrees Celsius.

Apply solder to the ends of the copper wires that you want to join together. This is called 'tinning' and helps to make a good soldered joint.

