Constructional Techniques

These notes will assist you in the construction projects. It is very important to follow the notes carefully, as the tiniest mistake will probably mean that the project will not work. Look at the project sheet and check that you have all of the components necessary.

●Resistors

Solder the resistors to the board first. You can tell which is which by their coloured stripes. (Ignore the GOLD or RED stripe round one end). It doesn't matter which way round you put the resistors.

●Capacitors

Next, solder any capacitors you have into place. 10nF is sometimes printed as 0.01uF and 100nF as 0.1uF. Or, your capacitors may have coloured stripes around the base. Electrolytic capacitors have to go a certain way round.
** Check you have the capacitors the right way round before soldering **

●Diodes

Now put any diodes in with the positive end (marked with a RING) towards the positive. Don't overheat the diodes, transistors or integrated circuits or you may damage them. Fit the transistors next, checking that the three legs are in the correct position. The emitter is marked by a small lug on the side of the transistor, the collector is on the opposite side and the base is between the emitter and the collector.

●Integrated Circuits

Integrated circuits are fitted into sockets so the sockets must be fitted first. A notch is marked on the socket and pin '1' is to the left of the notch. Solder the socket into place and then push the IC (Integrated circuit) into the socket. Make sure that all the legs go into their holes on the socket, then push the IC right into the socket squarely.

Finally, fit any straps, wires and miscellaneous components, including the battery connector and any switches. DO NOT FIT THE BATTERY AT THIS STAGE.

●Checking the Project

Before you connect the battery, check all the components on the board to make sure they are the right ones, that they are in the right holes and are the right way round. Check that the wires to the other components are connected correctly. Check again that the battery connector is the right way round. If you get it wrong, not only will you have to correct it, you may have to replace the transistors, diodes and IC's with new ones, as they could be ruined.

●Connecting the Battery

Now connect the battery. If the project doesn't work, switch off and check everything again. Examine all the joints very carefully to make sure they are firm. Try waggling the components or giving them a small tug. Make sure there is no solder between the tracks and that the component's legs are not touching each other on the component side of the board. Test the battery, in case yours is flat.

If you still can't find anything wrong, ask someone else to check the board for you. They may spot something you didn't. If, after all that, you still can't get the project working, ask a Leader and they will try to find out what is wrong.