ELECTRONICS IN TLE

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One of the several choices of elective courses in TLE in high school before, and now one of the continuity styles of curriculum is Electronics. It is the subject in which where the students are taught of the basics in identifying electronic circuits and in fixing electronic related projects.

Like every other practical applications of theory and knowledge, Electronics demands caution, most especially since it involves electrically active materials and projects. Accidents and malfunctions can be hazardous for the instructors and the students. That is why it is a must that students are familiar with every tool they will use before even starting an activity. This is to avoid unwanted mishaps which can endanger the well being of the individual and the people within the class.

This article lists down the basic tools and equipment that are used in electronics, their function and the safety precautions that need to be followed while using a particular tool.

Beginning with non-electronic and handheld trappings, in basic electronics project, one will need screwdriver set, including different types of tip shape. These tools are used to manually tightening and loosing up screws which usually hold other components in place. Wire cutters and pliers are also used in dealing with wires and cables, electronic wires are mostly copper fibbers surrounded by rubber which will be too tough to cut with a normal scissors. In line with that, there is also a tool called wire stripper. This is a type of tool that removes the insulation or the material that covers the wires. This tool is used to cleanly and efficiently remove the coating without damaging the wire strands within.
When it comes to electronics specific tools, there are a few. A heat shrink tubing, hence the name is a thermoplastics make to shrink snug to the wire through the application of heat. It is used as a cover to provide protection for wire strands and fibbers. It can also be used for repairing demanded coating and insulators. Heat shrink tubing comes in all sorts of colors that can either match the original wire tubing or serves as a marker for wire identification, like sort of a tagging system.

Heat sink paste is a sealant or adhesive used for mechanical heat sink. Some of its other names are thermal grease or heat paste, derived due to the use of heat to activate the adhesive. Heat sink pastes do not have thermal conductivity as compared to metal, however, there are certain types of thermal paste that contains metal in its blend and can be conductive and capacitive. It is important to know the composition of the pastes being used to avoid excess electricity to flow to the circuits and cause damage and/or malfunction.

When it comes to hand held devices used in electronics, the most commonly used and is probably one of the most important is the multimeter. It is a device used to check for the presence of electricity in wires and other devices. It is a measuring equipment with multiple functions. Its function is to measure voltage, currents and resistances. The device has negative and positive indicators which help with indentifying faults in the flow of electricity and current. The device is advantageous in troubleshooting and identifying whether wires are grounded or not, thus preventing accidents.

Lastly, a soldering iron is a handheld device used for putting up together components that makes up circuits. It is a heating element which melts soldering lead, a type of soft metal used to bind metal parts together. Once the melted lead cools down and hardens, it creates permanent adhesions which secure the components.

There are still so many tools, however the few stated above are the very basic. Many of the tools used in electronics are sharp edged or have a heating mechanism, which
is the reason why the projects conducted within the class should always be under strict supervision and with correct guidance. Electronics is a great industrial skill that students can use in their future endeavor, or a challenging hobby to pass time, either way it is a wonderful skill to master.

References:

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