OCTELAB SAFETY NET

APPENDIX A - PROJECT / LEARNING ACTIVITY MATERIALS, PHYSICAL RESOURCES

PROJECT / LEARNING ACTIVITY TITLE: Printed Circuit Board Project – LED Flasher Project

COURSE CODE AND TITLE: TEJ2O or TEJ3M Computer Technology

VERSION PREPARED DATE: April 2012

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PROJECT / LEARNING ACTIVITY MATERIALS LIST FOR THIS PROJECT / LEARNING ACTIVITY

MATERIAL	QUANTITY	DESCRIPTION	SOURCE	WHMIS MSDS ATTACHED	SAFE STORAGE	WASTE DISPOSAL
Ferric Chloride	4 liters	An etchant solution that reacts (absorbs) copper. This allows the creation of pathways, pads and text on the copper board. Ferric Chloride requires an etchant tank which can be purchased from an electronics supplier. E.g. From ABRA Electronics : 22-394 Professional PC Board Etching System	[X] new, purchased [ ] new, donated from community, industry [ ] recycled from inside school [ ] recycled from outside school PREPARATION REQUIRED FOR USE: DETAILS:	[X] Y [ ] N	In sink during use and locked up the container it was purchased in when not in use.	Board picks up hazardous waste in June.
Liquid Tin		This solution places a very thin layer of tin on the printed circuit board. The board must be clean and free of oxides and oils. Liquid Tin is used to stop the oxidation of the copper board and to make soldering easier. To apply the tin, the solution must be in a tray big enough to accept the printed circuit board. E.g. ABRA Electronics: TINNIT Kit	[X] new, purchased [ ] new, donated from community, industry [ ] recycled from inside school [ ] recycled from outside school PREPARATION REQUIRED FOR USE: DETAILS:	[X] Y [ ] N	By the sink during use and locked up in the cupboard when not in use.	Board picks up hazardous waste in June.

Copper Board		Copper board used is single sided.	[X] new, purchased [X] new, donated from community, industry [ ] recycled from inside school [ ] recycled from outside school PREPARATION REQUIRED FOR USE: DETAILS:	[ ] Y [X] N	Stored in cupboard. There Is no hazard.	Hardly any waste. Most of the board is used. It is composed of copper and fiberglass. Can throw out with regular garbage.

PHYSICAL RESOURCES USED FOR THIS PROJECT / LEARNING ACTIVITY

EQUIPMENT, TOOL, MACHINE	SUBJECT – SPECIFIC NEEDS	INSPECTED FOR SAFETY FEATURES	STUDENT TRAINING PLAN IDENTIFIED	MAINTENANCE SCHEDULE
NOTE: TEACHER EXPERIENCE AND SAFETY PROFICIENCY IS ASSUMED. DETAIL EQUIPMENT: • Sheet Metal Shear (best method but can use band saw – by teacher or hack saws) • Drill Press • N$^{o.}$ 60 Drill Bit • Soldering Iron • Needle-nose Pliers • Diagonal Pliers • XACTO Knife • Scissors • Computer and Laser Printer • Laser Overheads	MACHINE GUARDING AND SHIELDING APPLICABLE [X] YES [ ] NO [ ] N/A EMERGENCY STOP / PANIC BUTTON APPLICABLE [X] YES [ ] NO [ ] N/A LOCK-OUT TAG APPLICABLE [ ] YES [ ] NO [X] N/A OTHER (SUBJECT-SPECIFIC)	[X] Teacher DATE: __Daily____ [X] Board DATE: ___Yearly?__	DETAIL STEPS: <u>PowerPoint</u> • Sheet Metal Shear • Drill Press <u>Video</u> • Soldering SIGNAGE: • Safety Glasses • Sheet Metal Shear Warning RESOURCES: <u>General Safety</u> • Passport to Safety - www.passporttosafety.com <u>Chemical</u> • MGChemical - www.mgchemicals.com/index.html	DAILY: Soldering Irons WEEKLY: Hand Tools MONTHLY: ANNUALLY: Sheet Metal Shear CONTACT FOR REPAIR: Most tools are replaced if they are unsafe or break down.

MANUAL APPLICABLE / AVAILABLE (LOCATION): A room with water/sink and good ventilation.	[ ] YES [ ] NO [ ] N/A		Tools • Foot Shear Parts – John - http://www.youtube.com/watch?v=fCfUcdHPahE&feature=fvsr • Operation of Foot Shear – John - http://www.youtube.com/watch?v=w8d3n_kvlyM&feature=relmfu • Operation of Foot Shear – Kevin - http://www.youtube.com/watch?v=w8d3n_kvlyM&feature=relmfu • More Foot Shear Information - http://electron.mit.edu/~gsteele/mirrors/www.nmis.org/EducationTraining/machineshop/sheet/intro.html FREQUENCY OF RETRAINING ADVISED:	