

SAFETY PROCEDURES

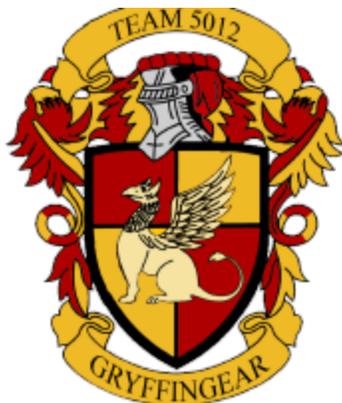
Gryffingear 5012

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SHOP RULES

Members Assisting Graciously Inspires Community

1. **ENVIRONMENT;** NO MUGGLE PLAY! Fooling around, or acting like a muggle is NOT allowed, it's not safe for you or others! (Wizards Only;)
 2. **RESPECT EVERYONE and EVERYTHING,** take care of the shop like it was your OWN.
 3. **INCLUDE** Teammates and Mentors in your Discussions.
 4. **PROPER ACTIONS;** Take it out, PUT IT BACK, If you Mess it up, CLEAN IT UP, and LEAVE IT BETTER, than you found it! (Your House Elf doesn't work here;)
 5. **CLOTHING;** Do **NOT** wear, loose clothing, exposed jewelry, and please have long hair tied up, and clear of machines.
 6. **WORKING;** NEVER work in the shop if you're by yourself - MUST have a partner, and be supervised by an adult.
1. **EMERGENCIES;** ALWAYS know where to locate the Emergency Supplies, FILL out an incident report, or notify a mentor and/or Safety Captain when something occurs-If it's a life threatening emergency, notify and adult, get permission, and call 911.
 2. **PROTECT YOUR EYES;** ALWAYS wear goggles and safety equipment in Fabrication area, and when working with tools, or the robot.
 3. **TOOLS;** KNOW the proper use of Tools/Machinery before working-Safety Card/Test required; call out CLEAR, and be aware of your surroundings, NEVER leave machines on unnecessarily, or unattended!
 4. **MANAGE** your WIRES AND CORDS; do NOT let them dangle lose, or in the path of other tools or robot mechanisms.
 5. **POWER;** KNOW you are working with, don't daisy chain tools to multiple power strips!
 6. **ELECTRONICS;** KNOW if a machine or materials are grounded; use proper tools designed for electronics, and use properly insulated gloves.
 7. **IF IT'S BROKEN;** DON'T use broken/modified tools or alter any parts of the tools, report them to the Shop Lead or Mentor.
1. **CLEAN UP;** Put back all tools and CLEAN up workstation, BEFORE it's time to go!

Thank you for Making our Workspace a MAGICAL Environment!

Safety Codes

Behavior

- B-1 Horseplay
- B-2 Disobedient
- B-3 Goofing Off
- B-4 Slacking Off
- B-5 Fighting
- B-6 Sexual Harassment
- B-7 Inappropriate Affection
- B-8 Foul Language
- B-9 Racism
- B-10 Sexism
- B-11 Running
- B-12 Thievery

Hazards

- H-1 Food in Shop
- H-2 Spill
- H-3 Debris
- H-4 Loose Clothing
- H-5 Daisy-Chaining
- H-6 No Safety Glasses
- H-7 Broken Glasses
- H-8 Glasses Outside Shop
- H-9 Hysteria
- H-10 Distraction
- H-11 Improvised Tools
- H-12 Damaged Tools
- H-13 Sharp Tools Exposed
- H-14 Loose Wiring
- H-15 Exposed Wiring
- H-16 Incorrect Wiring
- H-17 Obscured First Aid Kit
- H-18 Illness Singular
- H-19 Illness Major
- H-20 Cluttered Work Area

- H-21 Tripping Hazards
- H-22 Blocked Exits
- H-23 Power Outage
- H-24 Fumes
- H-25 Punctured Canister
- H-26 Clogged Ventilation
- H-27 Unsupervised Machinery

Injuries

- I-1 Eye Injury
- I-2 Scraping
- I-3 Bruising
- I-4 Cut
- I-5 Minor Bleeding
- I-6 Major Bleeding
- I-7 Internal Bleeding
- I-8 Blunt Force Trauma
- I-9 Puncture Wound
- I-10 Choking
- I-11 Asthma Attack Minor
- I-12 Asthma Attack Major
- I-13 Allergy Attack Minor
- I-14 Allergy Attack Major
- I-15 Heart Attack
- I-16 Shock
- I-17 Electrical Shock
- I-18 Seizure
- I-19 Sprain
- I-20 Dislocated Joint
- I-21 Broken Bone
- I-22 Burn by Heat
- I-23 Burn by Chemical
- I-24 Dismemberment Minor
- I-25 Dismemberment Major

USING & TYPES OF FIRE EXTINGUISHER

A. Using P.A.S.S (fire extinguisher)

- a. PULL PIN.
- b. AIM AT BASE OF FIRE.
- c. SQUEEZE HANDLE.
- d. SWEEP SIDE TO SIDE.



B. Types :

- a. Extinguishers are classified by a letter and number symbol. The number indicates the relative size of the extinguisher, and the letter indicates the type of fire it will extinguish.

Class of Fire	Type of Fire	Type of Extinguisher	Extinguisher Identification	Symbol
A	Ordinary combustibles: wood, paper, rubber, fabrics, and many plastics	Water, Dry Powder, Halon		
B	Flammable Liquids and Gases: gasoline, oils, paint, lacquer, and tar	Carbon Dioxide, Dry Powder, Halon		
C	Fires involving Live Electrical Equipment	Carbon Dioxide, Dry Powder, Halon		
D	Combustible Metals or Combustible Metal Alloys	Special Agents		No Picture Symbol
K	Fires in Cooking Appliances that involve Combustible Cooking Media: Vegetable or Animal Oils and Fats			

EMERGENCY EVACUATION PROCEDURE

A. Fire Procedure:

- a. **Don't** fight Fire, stay CALM.
- b. **AVOID** elevators!
- c. Evacuate the building as soon as the alarm sounds and proceed to the designated evacuation meeting point.
- d. On your way out, warn others nearby.
- e. Move away from fire and smoke. Close doors and windows if time permits.
- f. Touch closed doors; do not open them if they are hot.
- g. If doors are hot, place a wet cloth at the base to keep smoke from entering
- h. Move well away from the building and go to your designated meeting point.
- i. Do **NOT** re-enter the building or work area until you have been instructed to do so by the emergency responders.

B. Earthquake Procedure:

- a. **DROP** where you are, onto your hands and knees.
 - i. This position protects you from being knocked down and also allows you to stay low and crawl to shelter if nearby.
- b. **COVER** your head and neck with one arm and hand
 - i. If a sturdy table or desk is nearby, crawl underneath it for shelter
 - ii. If no shelter is nearby, crawl next to an interior wall (away from windows)
 - iii. Stay on your knees; bend over to protect vital organs
- c. **HOLD ON** until shaking stops
 - i. Under shelter: hold onto it with one hand; be ready to move with your shelter if it shifts
 - ii. No shelter: hold on to your head and neck with both arms and hands

C. When to Evacuate:

- a. If emergency response authorities indicate specifically to do so.
 - i. Use "buddy system", stay in contact with the mentors as BEST you can.
 1. communication lines (cellular "lines") should be reserved for emergency communications ONLY.
- b. If emergency response authorities indicate there is time to do so.
 - i. Take role ASAP to see if anyone is missing.
- c. If you can reach a safe location before an event is expected to occur.
 - i. Be sure to follow your designed route, unless it becomes unsafe.
- d. When environmental conditions would not expose evacuees to a dangerous environment.

PLEASE REVIEW INFORMATION WITH ALL TEAM MEMBERS, PARENTS, AND MENTORS.

REPORTING AN INJURY

- A.** When a person is injured, it's vital he/she receives the appropriate medical attention in a timely manner. In order to achieve this, it is important that the correct procedures are followed:
- a. Notify a mentor of the situation, telling them the injured person's location and the nature of the injury
 - i. **Be specific** as much as possible
 - b. Locate the nearest **First Aid Kit** and EMT. If you are certified in First Aid and CPR, you should assist where needed.
 - c. If you determine that safety of the person would be compromised by and delay of time, PLEASE CALL **911** and contact an adult immediately.
- B.** Know the person (identification)
- a. First, last name
 - b. Age
 - c. Allergies, past injuries
 - d. Family members phone numbers

**PLEASE DO NOT MOVE A PERSON WHO HAS BEEN BADLY INJURED
UNLESS LEAVING THE PERSON WOULD POSE AN IMMINENT THREAT OF
ADDITIONAL HARM.**

INITIAL ACTIONS IN A FIRST AID EMERGENCY

- A. **CHECK** the scene to see that it's safe for you.
- B. **CHECK** the victim's for life-threatening conditions such as severe bleeding, unconsciousness, and lack of breathing.
- C. **CALL 911** or the local emergency number if necessary (or send someone to make a call).
- D. **CARE for the INJURED:**
 - a. Begin CPR if necessary.
 - b. Top severe bleeding by applying direct pressure to the wound.
 - c. Check for head, neck, or spinal injuries. **DON'T** move the victim unless necessary.
 - d. Look for medical ID tags or prescription medications that may indicate any special health problems.
 - e. **DON'T** give fluids. The victim may not be able to swallow correctly.
 - f. Stay calm and reassure (say or do something to remove the doubts and fears of someone) the victim.

1.) IF YOU HAVE WITNESSED AN ADULT COLLAPSE

- A.) Gently shake the victim's shoulders and call out "Are you okay?".
- B.) If no response, have someone call 911. If alone make the call yourself.

2.) If there's no AED (Automated External Defibrillator) continue CPR until somebody comes back with the AED and follow directions on the box. (If you are not confident about doing so, provide compressions only)

- a. Place victim on firm surface and onto their back. If the victim is not breathing normally, begin chest compressions
- b. Place one hand in the center (between nipples) of the victim's chest. Place other hand on top and interlock your fingers.
- c. Lean over so your shoulders are above your hands and lock elbows. (Align on the left or right side of victim.)
- d. Push down firmly and fast (100 times a minute) with the heel of your hand. Compress the chest about 2 inches and allow it to spring back between each compression.
- e. Continue compression until someone until someone brings and AED or medical help arrive, or the victim begins to move or to breathe normally.

FIRST AID EMERGENCY & CARDIOPULMONARY RESUSCITATION (CPR)

1. Initial Actions in First Aid Emergency

- a. Check the scene to see that it's safe for you.
- b. Check the victim's for life-threatening conditions such as severe bleeding, unconsciousness, and lack of breathing.
- c. Call 911 or the local emergency number if necessary (or send someone to make a call).
- d. Care for the injured:
 - i. Begin CPR if necessary
 - ii. Stop severe bleeding by applying direct pressure to the wound.
 - iii. Check for head, neck, or spinal injuries. DON'T move the victim unless necessary.
 - iv. Look for medical ID tags or prescription medications that may indicate any special health problems.
 - v. DON'T give fluids. The victim may not be able to swallow correctly.
 - vi. Stay calm and reassure (say or do something to remove the doubts and fears of someone) the victim.

2. Basics of CPR Adults*

Even if you are not trained in CPR, you can possibly save life by performing compression-only CPR, which does not require mouth-to-mouth rescue breathing. If **you are trained** in CPR with rescue breathing feel confident about using it, do so. If **you are NOT trained** in CPR follow these steps for compression-only CPR.

- a. If you have witnessed an adult collapse
 - i. Gently shake the victim's shoulder and call out, "Are you okay?"
 - ii. If there is no response, have someone call 911. If alone, make the call yourself.
- b. If there's no AED (Automated External Defibrillator) continue CPR until someone comes back with it and follow the direction on the box (if you are not confident about doing so, then provide compressions only).
 - i. Place the victim onto his/her back

3. Use Conventional CPR (with mouth-to-mouth rescue breathing) for the Following Situations:

- a. For any victim of collapse, if you have been trained and are confident in your ability to provide CPR with rescue breathing you may do so. If you are not confident, provide compressions only.
- b. For adults who are found already unconscious and who are not breathing normally
- c. For drowning victims of any age.
- d. For victims of any age who have collapsed.

IF YOU ARE NOT TRAINED IN RESCUE BREATHING THE 911 OPERATOR MAY BE ABLE TO DIRECT YOU IN HOW TO PERFORM IT.

EMERGENCY CONTACTS

	Location	Phone number
Emergency Phone Number		911
Fire Department Station 131	2629 E. Avenue S, Palmdale, CA 93550	(661) 947-8700
Palmdale Sheriff Station	750 E Ave Q, Palmdale, CA 93550	(661) 272-2400
Palmdale Regional Medical Center	38600 Medical Center Dr, Palmdale, CA 93551	(661) 382-5000
Poison Emergency	No Location	(800) 222-1222
Los Angeles Animal Control	5210 West Avenue I Lancaster, CA 93536	(661) 940-4190

ADDITIONAL CONTACT INFO.

	Email	Phone Number
Brian Martin	bcmartin@tpaa.org	(951) 972-7196
Jeremy Germita	jgermita@tpaa.org	(661) 917-6873

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2017-18

Team Members Contact Information

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Annette	De La Cerda	661-874-7037	
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Atlas	Ocean	323-708-3202	
Aviti	Darbari	661-365-6190	Business Ops Lead
Billy	Keeling	661-478-7869	
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John	Lovely	661-675-8222	
Jonathan	Torres	661-406-9248	Programming Lead

JoseLuis	Pelayo		
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Julian	De Luna	818-851-4838	Design Lead
Julie	Lopez	661-874-9003	
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Keoni	Pitke	661-916-4476	
Kristopher	Barrios	661-874-7723	Scout Lead
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Matthew	Olivarez	661-350-6953	Team Captain
Mark	Olivarez	661-350-5201	
Marlon	Trujillo	661-878-3470	
Natalie	Estrada	661-494-9471	
Natalie	Martinez	661-576-4338	
Pascal	Ocean	323-708-3202	
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Victoria	Ayala	661-492-6763	

TEAM MANAGEMENT

First name	Last name	Phone	Email	Role
Brian	Martin	951-972-7196		Advisor
Jeremy	Germita	661-917-6873		Mentor

TOOL PROCEDURES AND POTENTIAL HAZARDS



A. Self Endangerment

a. Eye

- i. **Avoid** rubbing the eye
- ii. For minor cut or scratch, rinse the eye with water or saline solution to remove a foreign body that may be the cause. Seek medical care if there is no relief.
- iii. Do **NOT** attempt to remove any embedded object. Bandage loosely, **avoid** applying pressure and seek medical care.
- iv. For chemicals in the eye, call **911**. Flush the eye with water for 10 minutes or more. Always flush from the nose to the outer side to avoid having the chemical flow from one eye to the other.

b. Bleeding

- i. Cover wound with sterile gauze or the cleanest cloth available and press firmly. Add new cloths on top of the first as needed. If available wear gloves to **avoid** infection.
- ii. Maintain pressure direct pressure until professional help arrives or bleeding stops.
- iii. Wash hands thoroughly after providing care.

c. Burns

- i. Call **911** if the burn causes difficulty breathing; covers more than one body part; involves head, neck, hands, feet, or genitals; is to a child or elderly person; or is result of chemicals, explosions, or electricity.
- ii. If the victim appears to be unconscious, call **911** and begin CPR.
- iii. Cool the burnt area with large amounts of cool water, unless it is an electrical burn. Certain chemical burns also require special care-check the product's label.
- iv. Do **NOT**:
 1. Use butter or oil on burn
 2. Apply ice or ointment to a severe burn.
 3. Break blisters or remove clothes that are stuck to or embedded in the skin.

d. Choking

- i. **ASK**: "Are you choking?"
 1. If the victim **CAN'T** breathe, cough, speak or make high-pitched sounds, have someone call for emergency help.
- ii. **PERFORM THE HEIMLICH MANEUVER**:
 1. Stand behind the victim.
 2. Wrap your arms around the victim's waist and grab the fist of one hand with your other hand.

3. Place your fist into the victim's abdomen with a quick upward thrust. Repeat thrusts until object is expelled or the victim becomes unconscious.

iii. **IF VICTIM BECOMES UNCONSCIOUS:**

1. Call **911** and begin CPR

e. Poisonings

- i. If the victim has serious symptoms or has collapsed, call **911**. Otherwise call the Poison Control Center (**1-800-222-1222** in the U.S)
- ii. Try to determine what and how much the victim swallowed or was exposed to and when the poisoning occurred.
- iii. If possible, locate the container or the poisonous substance and the Material Safety Data Sheet (MSDS) for it and present them to emergency personnel when they arrive.
- iv. If the victim appears to be unconscious, call **911** and begin CPR.

f. Shock

- i. Signs of shock are altered consciousness; pale, cool, moist skin, rapid breathing and a rapid pulse.
- ii. Call **911**.
- iii. Have the victim lie on his/her back , with feet elevated about 12" higher than head-unless you suspect head, neck, or back injuries.
- iv. Loosen tight clothing and cover the victim to keep him/her warm. Do **NOT** give the victim anything to eat or drink.

g. Electric Shock

- i. Disconnect the source of electricity.
- ii. Call **911**.
- iii. If the victim appears to be unconscious, begin CPR.
- iv. Treat for shock and burns if necessary.

B. Cleaning Battery Acid

a. On Skin/Burns

- i. Assess the area where the acid came into contact with the skin. If the area is the hands, face or feet, immediately wipe the area with a wet cloth to remove the top layer of the acid.
- ii. Remove any clothing or jewelry that may have come in contact with the acid. This will help to ensure the acid does not have a chance to accidentally come in contact with other sections of skin and exacerbate the problem.
- iii. Use running water to flush out the area. For hands and feet, stick the affected area under an open spigot and allow the water to run over the area

for at least 15 minutes. If the eyes are involved, lay the person flat and hold the eyelids open. Run a low pressure flow of cool water over the eyes for the full 15 minutes.

- iv. Determine if professional medical attention is needed. After 15 minutes of flushing the affected area, stop the use of water and observe the appearance of the area. If the skin is continuing to discolor, transport the individual to an emergency room or a doctor's office. If the eyes were involved and appear to be bloodshot and swollen, call for paramedics immediately and resume flushing the eyes with cool water. Should the person exhibit any symptoms of shock, seek medical attention at once.
- v. Wrap the affected area with clean sterile dressing, such as gauze pads. This will help to prevent any foreign agents from reaching the tender skin until a doctor can look at the burn and prescribe a cream or ointment.
- vi. Keep the individual as calm as possible. While this may be relatively simple if the acid burn is on the hand or feet, this may be a more difficult process if the eyes are involved. Keep the cool water running until professional help arrives.

b. In Eyes

- i. If you ever get battery acid in your eyes, make sure to flush it with water immediately. It is probably best to use running water from a faucet or hose that way you not only dilute the acid but you also can move the acid out. Another way to treat or flush the battery acid in your eye is to use a base solution to neutralize the battery acid. Something like a safe baking soda like solution. You need to stay as calm as possible when this happens to you. It is your best chance to save your eye and keep your vision. I would also recommend seeing a doctor for further cleaning of eye.

c. Leaks/Spills

- i. **Verify the type of battery** (alkaline vs. acid based). **Avoid** eye or skin contact.
- ii. **Take precautions.**
 1. Alkaline batteries contain potassium hydroxide, a caustic agent that can cause respiratory, eye and skin irritation. In order to neutralize the leaked alkaline you will need a household acid like vinegar or lemon juice. A Q-tip or old toothbrush can help scrub the leakage from the electrical contacts. Always use household gloves and glasses and work in a well-ventilated area.
- iii. **Clean acid-based batteries with baking soda and a little bit of water on a Q-tip or old toothbrush.**
 1. **Never** put water directly on the acid.

C. Hand Tools

a. File

- i. **AVOID** using:
 - 1. File handles missing or broken
 - 2. File tangs bent, broken, or chipped

b. Wrench

- i. If jaws of wrench are sprung, the wrench might slip
- ii. While using wrench do **NOT** :
 - 1. Wear loose clothing
 - 2. Jewelry
 - 3. Loose long hair

c. Ratchet

- i. Be careful when breaking bolts free
- ii. Keep your grip in a such way so when the handle suddenly moves you do **NOT** cut or catch yourself in any part of the machine

d. Screwdriver

- i. Do **NOT** use:
 - 1. If it has a broken handle or with a split
 - 2. Round edges or tips
 - a. May slip and cause damage
 - 3. To check a storage battery or other electrical currents
 - 4. Expose screwdriver blade to excessive heat
 - a. May reduce hardness of blade
 - 5. Use pliers on handle or shank of screwdriver for extra turning power
 - a. Wrenches should be used only on a square shank

e. Split Hammer/Mallet

- i. Injuries:
 - 1. Smashing fingers
 - 2. Blunt force trauma
- ii. Wear safety goggles when striking tools/objects
- iii. Inspect hammer in case of damaged and all parts are secure
 - 1. Replaceable faces are fitted securely into the head
- iv. Split-hammers be sure that the face and handle securing screws are continuously retighten, if necessary.

f. Chisel

- i. Always keep them sharp, dull chisels are dangerous
 - 1. Requires more effort to push the chisel through

- ii. Always cut with blade away from body, keep your hands behind cutting edge
- iii. Never hold a workpiece with one hand while chiseling with the other
 - 1. Secure workpiece with a clamp or bench vice.
- iv. Use sandpaper to break sharp machined edges on new chisel
 - 1. Prevents cutting yourself while holding chisel

D. Power Tools

a. Threader Machine

i. NEVER:

- 1. Contaminate the cutting fluid with materials which are flammable
- 2. Wear loose-fitting clothing around the machine, and insure that long hair cannot come in contact with rotating parts of the machine or workpiece
 - a. Keep sleeves buttoned, shirts tucked in and hair retained
- 3. Wear any necktie that does not have a safety breakaway around rotating machinery
- 4. Use flammable fluids to clean the machine or the parts you are threading
 - a. If you are using a cutting fluid which tends to oxidize or turn rancid, suggest you change to another type, or make sure that the fluids are changed regularly
 - b. Bacteria or algae growth in cutting fluids can cause infection and increase the risk of contact dermatitis.

b. Drill Press

- i. Make drill press adjustments with power off
- ii. Turn the drill press off before looking up or walking away from the machine
- iii. Put hands in the drill press
 - 1. Keep hands and fingers at least 3" from rotating drill bit
- iv. Do **NOT**:
 - 1. Exceed the recommended speeds for the type and size of drill bit being used or composition of the stock being drilled
 - 2. Attempt to handhold stock while drilling - use a clamp or a vice to secure stock onto drill press table
 - 3. Start the machine without the table clear of everything except the stock you are drilling

4. Stop the rotation of the drill chuck, spindle, or stock rotating on bit with your hands or fingers
5. Touch the drill bit and shavings since they are hot immediately after drilling
6. Use your hands or blow the drill shavings, use a bench brush
7. Reach around or under a rotating drill bit or grab the chuck to stop a drill press
 - a. Cause a hand puncture or other serious injury

c. Hand Drill

- i. Inhaling dust or shavings - wear breathing mask
- ii. Shifting of workpiece - clamp down or secure it in a vice
- iii. Less pressure on drill - reduces the chances of slipping
- iv. Too much pressure - can strain motor
- v. **AVOID:**
 1. Wearing loose gloves (form-fitting gloves are good), jewelry, baggy clothes, long or loose hair (put up)

d. Milling Machines

- i. Do **NOT** :
 1. Wear gloves, rings, watches or loose clothing. Tie back long hair
 2. Attempt to mount, measure or adjust work until cutter is completely stopped
 3. Reach over or near a revolving cutter. Keep hands at least 30 cm (12 in.) from a revolving cutter.
 4. Use an excessively heavy cut or feed as it can cause the cutter to break
 - a. The flying pieces could cause serious injury
 5. Lean or rest hands on a moving table
 6. Make any adjustments while the machine is running
 7. Use paper shims to check the distance from the cutter to the stock
 8. Move the operating levers without knowing what they control and what action is going to take place
 9. leave machine unattended while it is running

e. Soldering Iron

- i. Always return the soldering iron to its stand when not in use
- ii. Never put it down on the workbench
- iii. Turn unit off and unplug when not in use
- iv. Can "spit" - wear eye protection
- v. Insanitation - always wash your hands with soap & water after soldering

- vi. Lead exposure
 - 1. Rise to serious chronic health effects
 - 2. Exposure will primarily be through accidental ingestion from your skin, wear gloves if directly handling solder
 - 3. Limited fumes may be generated by soldering.
- vii. Rosin exposure
 - 1. Lung, eye, throat irritation
 - 2. Nosebleeds and headaches
 - 3. Repeated exposure can cause respiratory and skin sensitisation, causing and aggravating asthma
- viii. Do **NOT** use:
 - 1. Obvious damages to body, cable or plug
 - 2. If machine is not operating correctly - report immediately
- f. **Jigsaw**
 - i. Exposed moving parts and electrical hazard with the potential to cause harm through:
 - 1. Entanglement
 - 2. impact and cutting
 - 3. exposure to dust
 - 4. projectiles and sharp objects
- g. **Table Saw**
 - i. Always stand firmly on the floor - avoid awkward operations such as falling into the blade by slipping or losing your balance
 - ii. Always unplug power prior to changing the blade
 - 1. Keep blades sharp, replace or sharpen if dull
 - iii. Check to see if wood has any nails, knot screws etc. - cause an injury
 - iv. Do **NOT**:
 - 1. Wear gloves, jewelry, loose clothing or loose hair while operating
 - 2. Carry conversations while cutting - pay attention
 - 3. Reach behind or over the blade unless it stopped turning
 - 4. Leave until blade stopped turning
 - 5. Line your body with the blade
 - a. Injury by flying sawdust, wood chips in work
- h. **Hacksaw**
 - i. Lost of hearing - ear plugs or mufflers
 - ii. If a situation arises (demands attention) turn off power before responding
 - iii. Do **NOT**:
 - 1. Attempt to secure materials by hand - use a clamp or a vice

2. Attempt to remove cutting or adjust the material when blade is in action
 3. Use hacksaw if you discover defaults, don't power on until it's been repaired
 4. If blade breaks don't attempt to replace it until the machine is completely off and at a halt
 5. Leave hacksaw unattended while cutting
 6. Use power hacksaw to cut anything other than metal
 7. To cut small objects
- iv. Do **NOT** have:
1. Long or loose hair - tie it back or covered securely
 2. Jewelry - should be removed to help eliminate the risk of snagging
 3. Loose clothing - can get caught in blade

i. Bandsaw

- i. Hair or clothes caught by the cutting tool
- ii. Chips in the eyes
- iii. Fingers cut/trapped with the blade
- iv. Broken bandsaw blade
- v. Do **NOT**:
 1. use excessive force when pushing the wood past the blade
 2. back the stock away from the blade while the saw is in motion if the workpiece binds or pinches on the blade
 3. stop a bandsaw by thrusting stock against the cutting edge or the side of a blade immediately after the power has been shut off
 4. remove sawdust or cuttings from the table by hand or with compressed air
 5. leave a saw running unattended
 - a. Turn off the power and make sure the machine has stopped running before leaving the area

j. Lathe

- i. **AVOID**:
 1. Wearing gloves, Jewelry, loose clothing, hair down (wear hair up)
 2. Lean against machine - stand upright
 3. Do not make adjustments to machine wait till a complete stop
 - a. don't leave machine unattended
 4. Do not put hands on work in the lathe
 5. Do not use calipers on workpiece while machine is running

6. Do not make heavy cuts on long slender pieces
 - a. Work could bend or fly out of lathe

k. Heat Gun

- i. Harmful to eyes
 1. Wear safety goggles
- ii. Inhaling fumes
 1. Wear respirator mask
- iii. Keep chemicals off skin
 1. Wear gloves that are resistant to chemicals
- iv. Operates usually at 100°C and 550°C
 1. Burns
 - a. If finished place on a heatproof mat or similar surface until cool
 2. Potential fires - fire extinguisher in handy
 - a. Long hair tied back
 - b. Cuff long sleeves back so they don't flap around heat gun
 - c. No debris left around heat gun
 - i. Wood shavings, sawdust etc..
- v. Do **NOT**:
 1. Use on lead-based paint - releases toxic fumes
 2. Point at a single spot for more than a few seconds
 - a. Slow circular movements
- vi. Always unplug heat gun - use outlet that grounded
 1. Prevent shorting out and stop possible electrical fires
- vii. Always use setting recommended by manufacturer rather than what you think.