Team 3102

Safety Manual

Table of Contents:

Section 1
First Aid

Bloody Nose

First Aid Instructions

Information: A nosebleed occurs when blood vessels inside the nose break. Because these vessels are delicate, they may burst easily.

What to do:

- **Lean forward and pinch your nose just below the bridge, where the cartilage and bone come together.**
- **Maintain pressure for 5-15 minutes.**
- **Pressing an ice pack against the bridge may also help.**

DO NOT DO:

- Do not tilt your head back! You may swallow blood, and some may go into your lungs.

Seek medical attention:

- Call your doctor if the bleeding last for more than 20 minutes
- If the nosebleed happened spontaneously
- If you develop a headache, dizziness, ringing in your ears, or vision problems.

Object in Eye:

First Aid Instructions

Information: Anything that gets in your eye, whether it is a speck of sand or a chemical, can cause pain and could damage the cornea.

What to do:

- **Try blinking rapidly to dislodge a small particle.**
- **If it isn't moving, rinse the eyes by holding the lid open under running tap water. (if possible, remove contact lenses first.)**

DO NOT DO:

- Do not rub your eyes! A tiny piece of dirt could scratch the cornea and cause an infection.
- Never try to move a deeply embedded object- Leave it to the professionals.

Seek medical attention:

- If you have splashed a chemical (such as bleach) in your eye or have a object deeply embedded in it- call 911 for minor irritants, call your doctor if your eye is stinging or swelling after rinsing, or if you are having vision problems

Sprain:

First Aid Instructions

Information: Sprains occur when ligaments surrounding a joint are pulled beyond their normal range. Sprains are typically accompanied by bruising and swelling.

What to do:

- **Apply and remove ice every 20 minutes throughout the first day.**
- **Wrapping the joint with an elastic compression bandage and elevating the wound may also help.**
- **Stay off of the injury for 24 hours.**
- **Afterwards, apply heat to promote blood flow to the injured area.**

DO NOT DO:

- Do not work through the pain, or you will risk doing more serious damage, like tearing a ligament.

Seek medical attention:

- If the injury doesn't improve in a few days, you may have a more serious injury-call your doctor.

Burn:

First Aid Instructions

Information: First degree burns produce redness; second degree burns cause blisters; third degree burns result in broken or blackened skin.

What to do:

- **Run cool water over the affected area, submerge it into a cool bath, or apply wet towels to affected area.**
- **Loosely apply a bandage to a first or second degree burn for protection.**

DO NOT DO:

- Do not put an ice pack on major burns, which could do more damage to the skin.
- Do not pop any blisters.
- Do not apply any antibiotics or butter to the burns, because this could lead to an infection.

Seek medical attention:

- Call 911 for a third degree burn.
- If a electrical or chemical burn occurs.
- The victim is coughing, has watery eyes, or has trouble breathing.
- Go to the ER for a second degree burn that is larger than the size of your palm, treatment may prevent scarring.

Choking:

First Aid Instructions

Information: True choking is rare. When someone is choking, they can't cough strongly, speak, or breathe, and their face may turn red or blue.

What to do:

- **Call 911**
- **For a victim one or older:**
    - **Have the person lean forward, and strike their back between the shoulder blades 5 times.**
    - **If this doesn't work, stand behind the victim, place 1 fist just above the belly button, cup the fist with your other hand, and push up and inwards toward the ribs until the object is dislodged or the victim becomes unconscious.**
- **If you are alone:**
    - **Press your abdomen against a sturdy surface, like a kitchen counter, or use your hands to repeat the steps above.**

DO NOT DO:

- Do not give water of food to someone who is choking

Seek medical attention:

- Always call 911 for a case of true choking

Poisoning:

First Aid Instructions

Information: Potential household hazards include cleaning supplies, carbon monoxide, and pesticides. Bites and stings can also be poisonous to some people.

What to do:

- **If a person is unconscious or having trouble breathing, call 911.**
- **Call the Poison Control Centers National Hotline (1-800-222-1222)**
- **Be prepared to tell the operator what substance was consumed, how much was taken, when the incident occured, and information about the victim.**

DO NOT DO:

- Do not wait for symptoms to occur
- Do not give ipecac syrup to induce vomiting, because the poison could cause additional damage while coming back up.
- The victim should not eat or drink, unless the hotline operator tells you otherwise.

Seek medical attention:

- ALWAYS CALL 911 OR POISON CONTROL CENTER!!!

Open Wound:

First Aid Instructions

Information: Breaks in the skin that bleed (such as a cut, scrape, or a puncture) need to be treated promptly and properly to avoid infection.

What to do:

- **Place a piece of sterile gauze on the injury and apply pressure to stop the bleeding.**
- **For minor cuts or scrapes, wash with soap and water, then apply a thin layer of Vaseline or antibiotic, then cover with a bandage.**

DO NOT DO:

- Do not wash or apply ointment to a wound that is large, deep, or profusely bleeding-instead seek medical help.
- If there's an object protruding from the injury, do not try to remove it.

Seek medical attention:

- If there is an object in the cut, call 911.
- If the wound is deep, accompanied by a fever or has redness, swelling, or has red streaks around it, call your doctor.

Blow to the Head:

First Aid Instructions

Information: The skull is very protective, so hitting it rarely results in injuries to the skull itself. But if the force is great enough, the neck, the back, and soft tissues inside the head may be injured.

What to do:

- **If the person is unconscious, call 911.**
- **If the struck area is bleeding, treat it like you would for any other cut, but follow up with your doctor, because there may be internal injuries.**
- **Icing a small bump can help reduce swelling.**

DO NOT DO:

- Do not leave the victim alone, especially if they are sleeping. Wake the victim up every 3-4 hours, and ask simple questions to make sure there is no brain injury.

Seek medical attention:

- Call 911 if the victim exhibits seizures, dizziness, vomiting, nausea, or changes in behavior.

Section 2
Safety Precautions

Personal Protective Equipment

Safety Glasses:

Safety in workplace can prevent many eye injuries from happening. When in the workplace there are many things that could occur to your eyes if not wearing eyewear, or not wearing correct eyewear.

Things that may get in the eyes are;

- Radiation---Heat or Infrared Radiation, Ultraviolet Radiation, Lasers and Visible light.
- Chemical--- Splashes and all fumes.
- Pathogens--- Blood from the body transferring into the eye.
- Projectiles--- Metal, Wood, Dust and other particles.

Steps that can prevent you from danger to the eyes include;

- ALWAYS wear your eye protection.
- If your eyewear is in bad condition, take notice and renew your eyewear immediately.
- Clear all safety hazards in your work space!
- Know the precautions needed to prevent danger in your work area.

Hand Protection:

Your hands are most commonly in danger in the workplace. Hands are very valuable due to them being able to grab, twist, hold, push and talk. They are also at risk so it is important that you follow precautions.

Ways to prevent your hands from danger;

Chemical:

- Wash your skin thoroughly
- Do NOT wipe your hands on anything
- Correctly label all substances
- Wear gloves at ALL times when dealing with chemicals.

Heat/Cold:

- Use proper glove attire
- Let any object cool down before handling it
- Insulate all power tools

Mechanical:

- Make sure all power is off before repairing equipment
- Know all of your equipment in the work area
- Work at your own pace!
- Be alert at ALL times
- Never work without the machine being LOCKED out.

Hearing Protection:

One of the effects of short-term hearing damage known as tinnitus (ringing in the ears). This symptom may go away in short time but repetitive loud noise in the workplace results in permanent tinnitus or hearing loss.

The outcomes of hearing loss are;

- Lack of communication
- Concentration
- Physical and Psychological stress
- Lack of productivity
- Contributing in work hazards, such as not being able to hear warning signals.

Ways to prevent hearing loss are;

- Wear hearing protection ALWAYS
- Monitor your abilities to hear
- Purchase quited products
- Beware of; firearms, power tools, firecrackers, sporting event and industry,

Hearing Conservation Information

- Permissible Exposure Limit (PEL) =90 dBA for an 8 hour TWA=100% dose
- 15 minute excursion limit is 115 dBA
- The ceiling limit for any exposure is 140 dBA.
- 85 dBA TWA (or 50% noise dose) is the action level requiring a Hearing Conservation Program-(it is a ACGIH guideline- lower than OSHA's PEL of 90 dBA.)
- OSHA requires that engineering controls reduce noise to 90 dBA when feasible.
- Employers must make hearing protection available to employees when the noise level is at or above 85 dBA. Employees exposed to a TWA less than 90 dBA are NOT required to use this protection unless a permanent significant hearing loss has been found.
- Hearing protection must be worn by all workers exposed to 90 dBA or more.

SPL (dBA)	Time Allowed	SPL (dBA)	Time Allowed
89	>8 hrs	113	0.33 hr
90	8 hrs	114	0.28 hr
91	6.96 hrs	115	0.25 hr
92	6.06 hrs	116	0.21 hr
93	5.27 hrs	117	0.18 hr
94	4.59 hrs	118	0.16 hr
95	4 hrs	119	0.14 hr
96	3.48 hrs	120	0.12 hr
97	3.03 hrs	121	0.10 hr
98	2.29 hrs	122	5.6 min
99	2.29 hrs	123	4.9 min
100	2 hrs	124	4.3 min
101	1.74 hrs	125	3.7 min
102	1.51 hrs	126	3.2 min
103	1.32 hrs	127	2.8 min
104	1.14 hrs	128	2.4 min
105	1 hr	129	2.1 min
106	0.86 hr	130	1.8 min
107	0.75 hr	131	1.6 min
108	0.65 hr	132	1.4 min
109	0.56 hr	133	1.2 min
110	0.5 hr	134	1 min
111	0.43 hr	135	56 sec
112	0.38 hr	136	48 sec

Blood Exposure Aid

Suggested Clean-up Kit:

- Single use Tyvek suit and shoe covers
- Goggles--face shield
- Single use Nitrile gloves
- Antibacterial hand wipe towelettes
- Microencapsulation absorbent material

Clean-up Materials:

- Five gallon container
- Two quarts of household bleach
- Large autoclavable biohazard disposal bags

Response Team: Building services or Trained In-House Staff

- The individual's cleaning the blood spill need to use the proper personal protective equipment (PPE), (e.g. water impervious gloves, outerwear, goggles, etc.)
- Spray the blood contaminated surfaces with a 1-10 solution of bleach and water.
- Absorb and remove all traces of the spill with paper towels or other acceptable materials (Microencapsulation absorbent). Be careful not to contaminate the outside of the spray bottle.
- Respray the cleaned area with the bleach solution and allow to air dry.
- Place all waste materials, including disposable PPE, into a plastic autoclavable biohazard bag. Be careful not to contaminate the outside of the bag. Mattresses, rugs, and other large items that cannot fit in a biohazard bad can be wrapped in plastic wrap after being decontaminated.
- This type of waste cannot be discarded through the regular trash service. Biohazardous waste must be decontaminated (autoclaved).

Source: Purdue Student Health Center

Lead-Acid Battery Basics:

- The electrolyte is a solution of sulfuric acid (35%) and water (65%). This solution can cause chemical burns to the skin and especially to the eyes.
- During normal operation, water is lost from a non-sealed (or flooded) battery due to evaporation.
- During charging, lead acid batteries produce hydrogen and oxygen bases (highly flammable/explosive) as electrolysis occurs.
- Many lead acid explosions are believed to occur when electrolytes are below the plates in the battery and thus, allowing space for hydrogen/oxygen to accumulate. When the battery is engaged, it may create a spark that ignites the accumulated gases and causes the battery to explode.

Required Safety Equipment in the Battery Charging Area:

- Plumbed tepid water safety shower and eyewash station.
- Personal or portable eyewash stations may be installed in the arera immediate to the battery charging, if plumbed units cannot be installed. However, plumbed tepid water stations must be installed nearby top facilitate the required flushing of the eyes and skin.
- Non-vented safety goggles
- Face shield (considered secondary safety protection)
- Acid resistant gloves (neoprene is sufficient)
- Apron (If there is a potential for acid spill)
- Steel-toe boots or foot guards in the area where the battery is lifted

Standard Precautions/Spill Clean-up:

- Always, store or recharge batteries in a well-ventilated area away from sparks or open flames.
- Damaged lead acid batteries shall be kept in properly labeled acid-resistant secondary containment structures.
- Use only chargers that are designed for the battery being charged.
- Always, keep lead acid battery vent caps securely in place.
- Do not store acid in hot locations or in direct sunlight.
- Pour concentrated acid SLOWLY into water; do not add water into acid.
- Use nonmetallic containers and funnels.
- If acid gets in your eyes, flush immediately with water for 15 minutes, and then promptly seek medical attention.
- If acid gets on your skin, rinse the affected area immediately with large amounts of water. Seek medical attention if the chemical burns appears to be a second degree or greater.
- Never, overcharge a lead acid battery and only replenish fluid with distilled water.
- Emergency wash stations should be located near lead-acid battery storage and charging areas.
- Prevent open flames, sparks or electric arcs in charged areas.
- Lead-acid storage and charging areas should be posted with “Flammable-No Smoking” signs.
- Neutralize spilled or splashed sulfuric acid solution with a baking soda solution, and rinse the spill area with clean water.

Source: University of Wisconsin

Soldering

Soldering Iron Safety:

- Never touch the element or tip of the soldering iron.
- They are very hot (about 400 degrees C) and will burn.
- Hold wires to be heated with tweezers or clamps.
- Keep the cleaning sponge wet during use.
- Always return the soldering iron to its stand when not in use.
- Never put it down on your workbench.
- Turn unit off or unplug it when not in use.

Work Safety with Solder, Flux and Cleaners:

- Wear eye protection. Solder can “split”.
- Use lead free solder. Keep cleaning solvents in dispensing bottle to reduce inhalation hazards.
- Always wash your hands with soap and water after soldering.
- Read and understand the MSDS for all materials before beginning work.

Dangers of Lead Exposure:

- Lead on your skin can be ingested and lead fumes can be given off during soldering.
- Other metals fumes can also be hazardous.
- Lead can have serious chronic health effects, such as reproductive problems, digestive problems, nerve disorders, memory and concentration problems, muscle and joint pain.

Avoid Toxic Fumes:

- Work in a well-ventilated area.
- The smoke formed is mostly from the flux which can be irritating, a sensitizer and aggravates asthma.
- Avoid breathing it by keeping your head to the side of, not above, your work.
- A bench top fume extractor may be necessary to remove harmful fumes caused by solder and flux from the soldering workstation by filtering the air.

Reduce Risk From Electricity:

- Always use a grounded outlet and grounding prong to reduce the risk of electrical damage if a short circuit occurs in the equipment.
- Prevent damage to electrical cords during soldering.
- Keep them away from heated tips.

Fire Preventions:

- Work on a fire- proof or nonflammable surface that is not easily ignited.
- Wear non flammable or 100% cotton clothing that covers your arms and legs to prevent burns.
- Know where your fire extinguisher is and how to use it.

First Aid:

- Immediately cool the affected area under cold water for 15 minutes.
- Do not apply any creams or ointments.
- Cover with a band-aid.
- Seek medical attention if the burn covers an area bigger than 3 inches across.

Waste:

- Discard lead and silver solder and dross in a container with a lid.
- Label the container; “Lead (silver) Solder Waste for Recycling.”
- Used solder sponges and contaminated rags must be disposed of as hazardous waste.
- Keep a lid on waste solder container when not adding or removing material.

Source: Environmental Health and Safety

Lock Out Tag Out: Lock out Tag Out is a procedure to prevent a moving part of the robot to start and injure someone. You should have a Lock Out Tag Out procedure if your robot has anything that uses energy to lift or shoot an object. Some examples include an arm that releases to push something, a pneumatic ram that raises a shooter, or an arm that lifts up a Recycle Rush tote. Below are two Lock Out Tag Out examples.

Lock Out Tag Out Procedure:

1. Lock down arms of the robot with python lock, ensure that it is locked, and that the arm cannot deploy.
2. Unplug the battery and take the velcro off, then place in the battery stand located in the pit.
3. Prepare the wooden blocks on the working station.
4. With correct lifting and handling methods, lift the robot on top of the wooden blocks from the cart and place upon the working station.
5. After this is done have the safety captain double check that the lock is secured!
6. When ready to advance to the playing field, take the battery from the battery stand and plug it into the robot.
7. With correct lifting and handling methods, lift the robot off the working station and place on a four-wheeled cart.
8. Finally with approval from the safety captain, unlock the python lock with safe precautions.

Lock Out Tag Out Procedure:

1. Place the kickstands on the pneumatic ramps that lift the shooter.
2. Unplug and remove the battery, then take off the strap. Place battery on charging cart.
3. Put lock onto pneumatic ramp to secure it from falling.
4. After this, have the safety captain check that the lock is secured.
5. Put robot blocks on workstation.
6. Carefully lift the robot onto the blocks of the work station.
7. Prior to queuing, put fully charged battery into the robot.
8. Place robot onto robot cart.
9. Allow the safety captain to remove lock, then remove kickstands and slowly release the ramp.

How to operate a fire extinguisher:
There are a number of different types of portable fire extinguishers, each can be identified by the color coding and labeling. Check that the extinguisher you intend to use is suitable for the type of fire encountered. (a water fire extinguisher must not be used on any fire involving electrical equipment.) There are 4 basic steps for using modern portable fire extinguishers. The acronym **PASS** is used to describe these 4 basic steps.

Pull:
Pull pin at the top of the extinguisher, breaking the seal. When in place, the pin keeps the handle form being pressed and accidentally operating the extinguisher. Immediately test the extinguisher. (Aiming wayay form the operator) This is to ensure the extinguisher works and also shows the operator how far the stream travels.

Aim:
Approach the fire standing at a safe distance. Aim the nozzle or outlet towards the base of the fire.

Squeeze:
Squeeze the handles together to discharge the extinguishing agent inside. To stop discharge, release the handles.

Sweep:
Sweep the nozzle from side to side as you approach the fire, directing the extinguishing agent at the base of the flames. After a Class A fire, probe the smoldering hot spots that could reignite the fuel.

Tips:

- The Australian Standard 2444 (AS 2444) Portable Fire Extinguishers and Fire Blankets selection and location will provide comprehensive information.
- Ensure that everyone in the home/ office knows the location of all the extinguishers and how to use them.
- Only operate extinguisher if it is safe to so.If it is not, get out.
- Remove the pin by pulling it sharply (this also breaks the seal.) Test to make sure the extinguisher is operable.
- Always work in pairs for safety, and always bring an extinguisher to the fire.
- In an emergency, call Triple Zero (000)

Section 3
Safety Training

Team 3102 has viewed the following videos for safety training:

- Safe Lifting- https://youtube.com/watch?v=901uQgfiuVk
- Dexter Duck:Electrical Safety Video -https://www.youtube.com/watch?v=igK-DRB5faU
- Master Lock OSHA Lockout Tag Out- https://www.youtube.com/watch?v=is77KiZ16_o
- When Seconds Count- Emergency First Aid Training- https://www.youtube.com/watch?v=OwV39oxGwZU

Team 3102 also uses Kahoot to teach safety to our community and team members. To find our Kahoots, go to Kahoot.com, and search “team3102” and some safety kahoots should pop up.

Pit Pass:

Something Team 3102 is trying this year is a Pit Pass. A pit pass is a lanyard that our scouts, photographers, and other team members can take to the pit to see what is happening with the robot. To do this, we are having one person step outside the pit, so one one of our other team members can learn how our bumpers are attached, or how our shooter works.

Safety Test
Industrial Technology
Answer True or False

General Safety:

1. When in doubt about the correct use of a tool or machine, ask your teacher for assistance.
2. The operator should be the only person within a machines safety zone while that machine is in use.
3. Loose fitting clothing, jewelry, and long hair should be tucked in, removed, or tied up before operating tools and machines
4. Eye protection must be worn at all times in a lab situation.
5. If you ever hear a strange noise coming from a machine, turn the machine off and notify the teacher.
6. In the case of an emergency, hit the RED stop button on the switch.

Jigsaw and Bandsaw

7. The upper blade guard should no more than ¼" above the material as it contacts the blade.
8. Always stand in front of the saw and apply even pressure to your material as it contacts the blade.
9. It is safe to simply "push harder" on your material if it is not cutting fast enough.
10. Your fingers should never get within 2" in any direction of the blade.
11. If you have scraps on the saw table, you may remove them while the machine is running.
12. While cutting, your fingers should never be in direct
13. Always use both hands to guide your material and apply both forward and downward pressure.

Drill Press

14. Always check that the chuck key is removed from the chuck and not laying on the work table prior to starting the machine.
15. All adjustment should be made with the machine at a complete stop.

16. After drilling a hole, you may release the spring-loaded handle to return the bit to the upward position
17. Check the depth setting prior to starting the drill press to ensure that the bit does not come in contact with the work table.
18. When drilling into small pieces, the material should be clamped to the table or held in a clamp.
19. The chip shield should be in place and protecting you from flying debris prior to starting the machine

Disc Sander

20. Sand on the downward moving side of the disc sander
21. Hold the material to be sanded in one location while sanding
22. The material can be lifted and turned in order to create a rounded edge.
23. Do not sand small pieces of material on the disc sander.
24. After turning the machine off, wait for the disc to come to a complete stop before moving away.
25. The sanding disc removes more material at a quicker rate near the center of the disc.

Power Miter Saw

26. Prior to starting the miter Saw, make sure that your material is held flat to the table and tight against the fence.
27. The Miter Saw will start simply by squeezing the trigger/ handle.
28. If the angle of the cut is not one of the defaults, twist the locking knob to secure the table at the desired angle before starting the saw.
29. Allow the saw motor to reach full speed before bringing the blade in contact with the material being cut.
30. After a cut is made, raise the saw to the upward position before removing the material from the saw table and releasing the saw.
31. Hold the material to be cut with your left hand and cut to the right or “scrap side” of your measured mark.

Section 4
Safety Captain Tips

Safety Captain Recommendations

- Hold team meetings about safety measures.
- Make a safety sign/poster to promote safety at competition.
- Have something to pass out to other teams that helps promote safety. Be sure to walk around, talk to, and help other teams during competition.
- Have a list of Basic First Aid instructions. Ensure that both the pit and the team in the stands have a copy of this information.
- Each year a new Material Safety Data Sheet should be created for each potentially dangerous chemical you take to competition.
- Each year make a new list of hazardous/power objects you take to competition. Examples include saws, saws all, drills, impact drivers, soldering iron, etc.
- The Team Pit should have five (5) members in there at a time. The combination can be five (5) students and no (0) mentors, four (4) students and one (1) mentor, or three (3) students and two (2) mentors.
- Tape off the front line (entrance) to the pit. Label it “Safety Zone Five People Allowed” to ensure people know where the pit boundaries are. The pit is always 10ft. X 10ft. in dimension.
- Constantly sweep/vacuum the floor of the pit.
- Know where the nearest fire exits are in case of an emergency. If time permits get a map of the event venue and label, all fire exits. At competition you may then label where the fire extinguishers are located.
- Do not be afraid to assert authority (in a polite way) to ensure safety!

5’S Principles:

Sort:

This is step one in a Five S program:
“Sorting” means to sort through everything in each work area. Keep only what is necessary. Materials, tools, equipment, and supplies that are not frequently used should be moved to a separated, common storage area. Items that are not used should be discarded or recycled.

Don’t keep things around just because they might be used someday.

5S Sorting itself involves five steps:

1. Cleaning
2. Classifying
3. Ownership
4. Red Tagging
5. Recycling / Reassignment

Cleaning

The purpose of “sorting” is to identify unnecessary items and eliminate them from the workplace. To do this first requires cleaning up the workplace so you can see what you have. Cleanup accumulations of dirt, debris, oil, grease, broken tools, excess materials, and scrap. As you do this you’ll also be involved with the second step of 5S sorting.

Classifying

As you are cleaning up you’ll find tools, equipment, materials, and supplies. As each item is found, classify it as to the type of object. Scrap metal might go directly to a recycling bin. An item classified as a tool might go to a collection area for further identification

Provided By: https://www.graphicproducts.com/articles/5s-program-sort/

Ownership

In some cases, as items are found or classified their ownership may be obvious. For example, pallets might be collected in one area so they can be returned to the shipping department. It may be immediately obvious where a tool belongs and that tool can be directly returned to its correct storage location. In other cases determining ownership may require asking some questions or doing a little research.

Once ownership is determined the owner can decide what to do with the item - store it, pass it on to another work area or department, or dispose of the item. However, in some cases the ownership of an item may not be readily apparent. This brings us to the fourth step in 5S sorting, red tagging.

Red Tagging

If an item cannot be identified, or if it cannot be classified, or if ownership cannot be determined, then it should be red tagged. Red tagging involves marking items with a red tag so that each item can be evaluated and dealt with appropriately. Red tagged items are collected in an area that allows potential owners to examine them and and determine what should be done with the items for which they are responsible.

Recycling / Reassignment

Red tagged items that are not claimed after a reasonable amount of time, such as 30 days, may be recycled, disposed of, or if they are still useful they can be reassigned. A simple approach for re-assigning items is to, at the end of the 30 day red tag period, provide a seven day period in which any supervisor may take any red tagged item with an expired red tag. These items are then reassigned to that supervisor's work area.

Sorting

In some cases the five steps of 5S sorting may happen simultaneously. We can clean, classify, determine ownership, and red tag in just a few seconds. In other circumstances the process may be more involved and the steps more distinct. But the objective is the same, clean up and get rid of unused items.

Provided By: https://www.graphicproducts.com/articles/5s-program-sort/

Systemize:

This is the second step in a 5S program: organize, arrange, and identify everything in a work area, as well as throughout the facility, so that items can be efficiently and effectively retrieved and returned to their proper storage location.

A variety of names have been used for the second step of 5S. These names include:

- Set in Order
- Systematic Organization
- Systematize
- Straightening out
- Simplify

The Basics of 5S Set in Order

The basic focus of this part of 5S is to create efficient and effective storage systems such that anyone can find the tools, materials, and supplies they need, and anyone can return those tools, materials, and supplies to their proper storage locations.

A second key principle in Set in Order is that the most commonly used tools should be readily available. Those items that are not frequently used should be kept out of the way and stored in a remote location.

Labeling 5s Set in Order

To accomplish these goals, storage areas, cabinets and shelves should be clearly marked with signs and labels. Place labels on the outside of doors to identify the storage space. Label the interior shelves so that individual items can be consistently and easily returned to their storage positions.

Frequently used tools are often stored on shadow boards. The tools hang on the shadow board, with color coded “shadow” labels, marking the location of each tool. The “shadows” match the shape and size of the tool, making it easy to see which tool goes where.

Don’t forget about the floor. Clean and paint floors make it easier to spot dirt,waste, and dropped parts. Use Duralabel floor marking tape to outline areas on the floor so that it is easy to see work areas, movement lanes, storage areas, and finished product areas.

Provided By: https://www.graphicproducts.com/articles/5s-program-sort/

Apply 5S Set in Order Principles to Any Workspaces

The key principle in "5S Set in Order" is: A place for everything and everything in its place, with everything properly identified and labeled.

- Items that are used frequently should be stored close to where they are used.
- Items that are used infrequently should be store in a common are that is further away from the location where they are used.
- If several items are used together, then store them together.(Drill bits with drills.)
- Store things in a place where people would logically look for them.
- Identify all items and label them so that anyone can identify and return them to their proper location.

The 5S Map

A 5S map is a tool that can help show what needs to be done in the 5S Set in Order step. A 5S map is a diagram that provides an overview of a work area, a process, a department, office, or work station. It provides a picture that shows where machines, storage areas, work in progress,, supplies, and workers are located. It should also include a short description of the tasks that are done in the area.

Use a 5S map to Identify

- Where equipment and machines are located
- Where work is done
- Where storage areas are needed
- How storage areas are arranged
- How people move around in, or move through the work area

The 5S map serves as a visual aid to help identify logical storage areas, and ways to position equipment and machines that will make access to needed tools and materials easier.

Provided By: https://www.graphicproducts.com/articles/5s-program-sort/

Shine:
The first step of 5S involves cleaning up and sorting out what was needed from those tools that are not frequently needed. In the second step of 5S everything was put away in its proper position. The third step entails a thorough cleaning.

5S Shine- Keeping It Clean
Once you have everything, from each individual work area throughout your entire facility, sorted and organized, it's important to keep it that way. This requires regular cleaning, or "shining" things up.

5S shine involves more than pushing a broom around a work area once a week. It involves daily cleaning. The work area should be returned to the condition it was in at the beginning of the day- including putting away all tools, materials, and supplies used that day. While cleaning, inspect machines, tools, equipment, and supplies that you work with that may need to be replaced.

5S Shine- Inspecting
Having a clean work area has many advantages. One of the more significant is that it makes it easy to spot fluid leaks and equipment that needs maintenance. When a work area is clean, operators can notice malfunctions such as fluid leaks, vibration, breakages, and misalignments. These problems, if not addressed, can result in equipment failure, safety hazards, and loss of production.

5S Shine- Who is responsible for Cleaning?
5S Shine is not just for a janitor or a cleaning crew, it is everyone's responsibility. Every work area should have someone who is assigned to clean each area. The best approach is to have those who work in an area to be the ones responsible for cleaning that area at the end of the day.
This results in:

- Work practices that help to keep the work area clean throughout the work day.
- Those who are cleaning are also able to inspect the equipment and spot problems
- Those cleaning know the safety hazards that exist in their work area (no need for a cleaning crew that needs to have safety training,)

- Those cleaning can identify and properly store unusual tools, dies, bits, jigs, etc…

No area should be left uncleaned. See the workplace through the eyes of a visitor. For example, if you are leaving at the end of the day and spot some scrap paper just inside the front door, pick it up. Take the responsibility for keeping your entire workplace clean, if doing so can be done safely.

When done on the regular, frequent basis, cleaning and inspecting generally will not take a lot of time, and in the long run will most likely save time.

Provided By: https://www.graphicproducts.com/articles/5s-program-sort/

Standardize:

With the first 3 steps of 5S completed, the effects and benefits of 5S can be seen. Time wasted looking for needed tools has been eliminated. Safety hazards from debris and clutter are gone. Early maintenance is keeping equipment online and producing more products. What more needs to be done? The 4th step in 5S is to make your 5S practices effective and efficient. This is accomplished by simplifying and standardizing.

5S Standardize- Turning Good Practices into Good Habits
The 5S practices developed in steps one through three should be standardized and made easy to accomplish. Develop a work structure, and written standards, that will support the new practices and turn them into habits. Every work space is different, and it is likely that the 5S practices initially implemented ca be improved. As you gain more experience with 5S in your workplace, update and modify your standards to make the process simpler and easier.

One of the hardest steps of 5S is changing old work habits. It's easy for people to slip into old habits. It's what a person is familiar and comfortable with, but those bad habits probably need to be changed.

5S Standardize- Use Standards to Change Habits
With standards established everyone knows what they are supposed to do, how they should be doing it, and when it needs to be done. In other words, standards produce new habits that result in 5S being effectively and efficiently implemented. Making people aware of the new standards, and helping them to remember the new standards correctly, is commonly done using labels, signs, posters, and banners.

For example, use your DuraLabel printer to create large format signs, place cards, and scoreboards. There is no need to pay the high cost of an outside service, and then wait for them to produce the 5S visual communication tools you need. You can make the 5S labels, signs, and placecards you need- quickly and easily- using the versatile Duralabel printer you already are using to make safety, maintenance, operations, compliance, and traffic control labels and signs. With DuraLabel it's easy to make the labels and signs needed to support your 5S program.

Provided By: https://www.graphicproducts.com/articles/5s-program-sort/
Labels and signs are not just used to help workers remember standardized 5S practices. They are an intelligent part of every aspect of 5S. WHen you think 5S, think visual communication.
For example:

- Using visual cues is the most effective way to communicate information. That's why a shadow board is so effective. It uses color labels in the shape of each tool to make identifying tool storage locations incredibly easy.
- With 5S everything should be clearly marked and identified. Labels and signs are the best way to identify storage locations, work areas, equipment, tools, and separate pathways for foot or motorized traffic.
- Labels and signs provide operating, cleaning, and preventive maintenance procedures at the locations where that information is most needed, on the equipment and machines.

5S Standardize- Other Tools to Help Implement 5S Standards.
Other tools that are used to help establish 5S standards include:

- Checklists
- Job cycle charts
- Scheduling of "five-minutes" 5S periods

5S Standardize-Checklists
5S checklists are commonly used as an auditing tool to ensure the standards are being followed. A 5S checklist involves more than verifying that work areas are clean. For example, checklist items should include ensuring operating and maintenance practices that support 5S goals are being followed.

5S Standardize-Job Cycle Charts

A job cycle chart lists each task that is done in a work area, and gives the schedule (frequency cycle) for performing each task. Each task is either assigned to a particular worker, or to a job duty. An example of a job duty would be operating a machine. Whoever operates the machine that day, ahs the 5S task of cleaning that machine at the end of the shift.

Workers can then use the Job Cycle Chart as a checklist that identifies what they need to do and when it needs to be done.

Provided By: https://www.graphicproducts.com/articles/5s-program-sort/

5S Standardize-Five Minute 5S Periods

A “Five Minute 5S Period” can be an intense, quick clean up (shine) of a work area, or it can look for abnormalities in all of the five steps of 5S. The goal is for 5S abnormalities to be spotted and immediate 5S actions (sort, Set in Order, or shine) to be taken to correct the abnormalities.

The “Five Minute 5S Period” does more than fix 5S problems. Its main object is to train workers in the principles of 5S. Having workers do a “Five Minute 5S Period” helps them to focus on the priorities of 5S and to remember the principles that underlie a successful 5S program.

5S Standardize

With the standardize step of 5S, old habits are changed and new work practices are established. The new practices are documented in written standards which ensure that 5S goals are achieved in an effective and efficient manner.

Provided By: https://www.graphicproducts.com/articles/5s-program-sort/

Sustain:

With the first 3 steps of 5S completed-Sort, Set in Order, and Shine- and with the best practices that efficiently and effectively result in those three steps being accomplished having been set in standards, you might think you are done. But, there is another crucially important step. The fifth and final step is called “Sustain.”

5S- Sustain- A commitment To Success

If we were not looking for a word that started with the letter “S”this final step might have been called commitment. It is an ongoing commitment to the standards created in the 4th S. It is a commitment to actively do all the parts of 5S, not just the first two or three. It is a commitment to not sit back, rest and think the job is done, but instead to change habits and create a standard of workplace cleanliness and organization.

Changing entrenched habits is difficult, and people will tend to return to the way they did things in the past. One goal of 5S Sustain is to change those habits.

In addition, the results of using 5S can open the door to 5S failure. For example, implementing 5S tends to open up free space… and free space tends to lead to clutter. A second goal of 5S Sustain is to ensure the 5S Sustain is to prevent new problems from being created.

In the sustain step of 5S, you'll need to train people to clean, organize, and inspect their work areas every day, and not let clutter accumulate in any location. The overall goal of 5S Sustain is to ensure the 5S standards that resulted from the first 4 steps, are kept up and maintained.

What is 5S Sustain?
5S Sustain is defined as: ongoing training and maintaining the established 5S standards.

Training is crucial for 5S success. People need to be reminded about the requirements of the established 5S standards. When there are changes that will impact your 5S program- such as new equipment- make the needed changes in the standards to accommodate those changes, and provide training on the new standards.

Provided By: https://www.graphicproducts.com/articles/5s-program-sort/

Section 5
FIRST Power Up Safety Manual

This is the link to the FIRST Safety Manual For 2018, FIRST Power Up:

https://www.firstinspires.org/sites/default/files/uploads/resource_library/2018-first-robotics-competition-safety-manual.pdf

Section 6
Injury Forms

Accident/Injury/Incident Report Form

Date of Incident/Accident_____ Time of Incident/Accident:_____

Location of
Incident/Accident:_____

Name of person in
charge:_____

Name, addresses, and phone numbers of person(s) involved in Incident/Accident:

1) Name_____ Date of Birth_____ Phone (H)_____(W)____

Address_____

2) Name_____ Date of Birth _____ Phone (H)_____(W)____

Address_____

Describe fully what happened; include the activity at the time of the incident, course of action foll

Any injuries or damage that occurred:

Were the police notified? No Yes (if yes, please identify the police involved)

Was medical treatment received? No Yes (If yes, who gave the treatment and who received it?

Were person(s) transported to a medical facility? No Yes

Facility:

Transportation provided by:

What other support was offered to and/or received by those involved?

416 925 5706 www.totum.ca

SPORTS INJURY REPORT FORM

PERSON INJURED ❑ Player ❑ Team Official ❑ Instructor ❑ Coach ❑ Volunteer ❑ Spectator

Name _____ Gender _____ (M/F) Date of Birth _____ (DD/MM/YY) Age _____

Address _____ City _____ Province _____ Postal Code _____

Height (approx.): Weight (approx.): Years of Experience:

(1) Witness Name _____ Witness Phone Number _____

(2) Witness Name _____ Witness Phone Number _____

INJURY CLASSIFICATION

❑ Acute Injury ❑ New Injury ❑ Recurrent Injury This Year ❑ Recurrent Injury Last Year
❑ Recurrent Non Injury ❑ Complication of Prior Injury ❑ Other _____

NATURE OF INJURY

❑ Laceration ❑ Sprain ❑ Fracture
❑ Dislocation ❑ Other _____

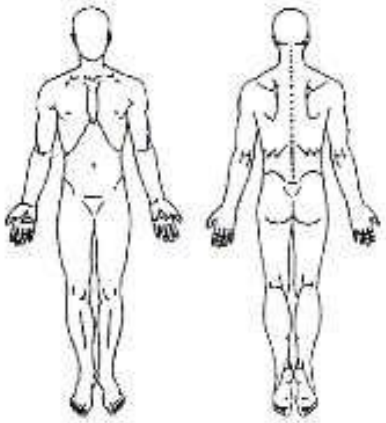
SYMPTOMS

❑ Loss of Feeling ❑ Shortness of Breath ❑ Dizziness ❑ Loss of Consciousness ❑ Other _____

Draw in your face on the picture provided.

Mark the area(s) you are experiencing any of the complaint(s) listed above with the appropriate symbols. Mark any areas of radiation. Include all the affected areas.

Numbness ••••
Pins & Needles OOO
Burning XXXX
Aching ***
Stabbing ////



Grade the intensity / severity of pain (if any) you are presently experiencing.

None
0
1
2
3
4
5
6
7
8
9
10
Worst

CAUSE OF INJURY EXPLAIN HOW THE ACCIDENT OCCURRED. e.g. WAS ANOTHER PLAYER INVOLVED OR WAS THE INCIDENT INDEPENDENT OF CONTACT.

INITIAL TREATMENT

❑ None Given ❑ Rice (Rest, Immobilize, Cold, Elevate) ❑ Sling ❑ Splint ❑ Wrapping/Taping ❑ Dressing
❑ Crutches ❑ Manual Therapy ❑ CPR ❑ Stretch/Exercise ❑ None Given – Referred Elsewhere

Name (Please Print) _____ Signature _____ Date _____

NON-MEDICAL INCIDENT REPORT

Date: _____

FIRST Event: _____

Name of person reporting incident: _____

Position: _____

Contact Info: _____

INCIDENT INFORMATION		
Complainant Name:		
Address: City: State: Zip:		
Phone: email:		
Date of incident:		
Location of incident:		
Description of incident:		Categories: (check all that apply) ☐ Inappropriate language ☐ Verbal abuse ☐ Threatening behavior ☐ Inappropriate contact ☐ Other:
NAMES OF WITNESSES AND/OR OTHER PEOPLE INVOLVED IN INCIDENT:		
1. Name: Contact info:	Volunteer: Y N Position:	Witness: Y N Involved: Y N
2. Name: Contact info:	Volunteer: Y N Position:	Witness: Y N Involved: Y N
3. Name: Contact info:	Volunteer: Y N Position:	Witness: Y N Involved: Y N
Action Taken: By whom:		
Was event Security involved: Y N If Yes, please explain: Contact Name and Number of Event Security:		
***FIRST* APPROVAL**		
Regional Director:	Signature:	
Regional Committee Chair:	Signature:	
If this is an emergency please phone: 1-800-871-8326, ext. 437, or ext. 448 Please complete and return this form to FIRST, Attn: Dennis Howland, Volunteer Resources Manager, 200 Bedford St, Manchester, NH 03101, or FAX it to 603-666-3907		

Section 8
SDS Sheets
And
Right To Know
Act

Safety Data Sheets (SDS)

Safety Data Sheets are an essential piece of your safety manual. Since SDS's are custom to a workplace, it is difficult to know how many you need and when to update them.

Items that need SDS's

- Grease (All Types)
- Cleaning products
- Batteries (All types)
- Rubbing Alcohol
- WD40

You should also get a SDS for every new chemical you get in your workplace. Make sure to update your SDS's every year, and know where they are at all time in case of an emergency.

Example SDS's:

- WD40 SDS: https://www.wd40company.com/files/pdf/sds/mup/wd-40-multi-use-product-aerosol-sds-us-ghs-7-20-14.pdf
- Sample SDS: https://www.msdsonline.com/wp-content/uploads/2017/10/class_3_acetone_sample_sds_us.pdf

The Right to Know

The Minnesota Employee Right to Know Act (MERTKA) is one of the most important and most commonly cited OSHA regulations. It is intended to ensure that all employees are aware of the work-related health hazards to which they are or may be exposed.

Introduction:

The purpose of the Minnesota Employee Right to Know Act is to ensure that all employees are aware of the hazards associated with exposure to hazardous substances, harmful physical agents (including heat, noise, ionizing radiation, or non- ionizing radiation), or infectious agents to which they may be exposed in the workplace.

The regulation applies to all Minnesota employers with the exception of Federal agencies.

OSHA enforcement:

It is noteworthy that the top ten most common MNOSHA citations include several MERTKA-related violations. For instance, failing to conduct adequate MERTKA training is by far the most common MNOSHA violation most years. This fact underscores the importance of this topic.

Listing of hazards:

The first step in complying with the regulation is to determine whether employees are exposed or potentially exposed to any hazardous substances, harmful physical agents, or infectious agents that are or may be present in the workplace. It is nearly

impossible to imagine a workplace where there is absolutely no chance of exposure; nearly every employer, therefore, will be required to develop a MERTKA program, as described later in this fact sheet.

A formal listing of hazards to which employees are “routinely exposed” is required. "Routinely exposed" means that a reasonable potential exists for exposure to hazardous substances, harmful physical agents, or infectious agents during the normal course of employees' work assignments. Routine exposure includes working in areas where hazardous substances have been spilled and cleaning up leaks and spills. It does not include a simple walk-through of an area where a substance or agent is present and no significant exposure occurs.

Exposure above the OSHA Permissible Exposure Limits (PELs) is not necessary for inclusion on the list of hazards.

Compiling this list will require careful consideration and evaluation of the work area. Many hazards will not be immediately obvious. For example: Carbon monoxide from forklifts and other such equipment.

- Diesel exhaust from diesel equipment.
- Welding fumes from welding operations.
- Wood dust from woodworking operations.
- Heat, insect bites, and poisonous plants if employees work outdoors.
- Methane, hydrogen sulfide, and other gases potentially encountered by employees who work in confined spaces.

Written program:
If employees are exposed to hazardous substances, harmful physical agents, or infectious agents, then a formal, written program is required.

A program template is available from the Office of Occupational Health and Safety (uohs@umn.edu)

The program must include:

- An inventory of hazardous substances, harmful physical agents, or infectious agents present in the workplace.
- Identification of employees who are routinely exposed to those substances or agents.
- A system for obtaining and maintaining Safety Data Sheets (SDS).
- Methods for making information readily accessible to employees in their work areas.
- A plan for providing initial, pre-assignment, and annual training of employees.
- Implementation and maintenance of a labeling system or other warning methods.
- The methods used to communicate and control hazards that may be encountered during infrequent or non-routine tasks.
- In addition, multi-employer workplace employers must describe the methods the employer will use to:
    - Inform other employers with employees working at the workplace of the hazardous substances, harmful physical agents, or infectious agents employees may be exposed to while performing their work.
    - Provide other employers with MSDSs or other written information, or notify them of where SDS's or other information will be located in the workplace.
    - Inform other employers of required precautionary measures that must be taken during normal operating conditions and in foreseeable emergencies.

- Inform the other employers of the labeling system used in the workplace.

The MERTKA program must be maintained at the worksite and must be available to employees or their designated representatives and Minnesota OSHA.

Like most safety programs, the MERTKA program will be an ever-changing program. New substances will be introduced; currently used substances will be replaced or totally eliminated from use, etc. The written MERTKA program must be reviewed at least annually to remove outdated information, insert new information, update training records, etc.

Training:

Each employee covered by the program must receive MERTKA training. The training must be made available by and at the cost of the employer. Training must be provided in English or a language understood by employees.

Training must be specific to the hazards that are listed in the MERTKA program. Highly generalized training (e.g., a generic training video) that does not include information about specific hazards (e.g., carbon monoxide, heat, pesticides, corrosives, etc.) is not acceptable by itself.

Training must be provided:

- Before an employee's initial assignment to a workplace where exposure may occur.
- Before any new or additional hazardous substance or agent is introduced into the workplace.
- Annually. Annual update training may be brief summaries of information included in initial and/or previous training sessions.

All training must be adequately documented and records must be retained for three years.
For several reasons, locations are advised to contact DEHS and/or OHS for assistance with planning and conducting MERTKA training. This type of training is quite technical and lengthy, and will require some degree of trainer credibility.

Safety Data Sheets (SDS's):
A Material Safety Data Sheet (SDS) is a detailed information bulletin prepared by the manufacturer or importer of a chemical that describes the physical and chemical properties, health hazards, routes of entry, precautions for safe handling and use, emergency and first-aid procedures, and control measures for a given chemical.

Employers must maintain a complete and accurate MSDS for each hazardous substance present in the workplace, with the following exceptions:

- Products employees bring into the workplace for their personal use.
- Consumer products or products sold or used in retail establishments if they are used in a manner that is comparable to typical consumer use (i.e., same frequency, concentration, etc.).
- Articles that contain a hazardous substance in solid form that is not released.
- Substances bound and not released under normal conditions of use (e.g., adhesive tape, vinyl upholstery, tires, etc.).
- Waste material regulated under the Resource Conservation and Recovery Act (RCRA).
- Substances in sealed packages that are not opened.
- Substances in a physical state, volume, or concentration that does not present a hazard (e.g., very small quantity, solids, diluted substances that present no adverse health effects, etc.).

Material Safety Data Sheets must include (at a minimum) the information contained in 29 CFR 1910.1200 (g)(2). In most cases, materials such as product labels, instructions, fact sheets, inserts, marketing materials, and other such documents are not adequate to meet this requirement.

Hazard labeling:

All hazardous substances must be kept in properly labeled containers.
Labels on containers received from manufacturers or importers must include:

- The identity (name) of the hazardous substance.
- The appropriate hazard warnings (e.g., “flammable,” “causes lung damage,” “irritates skin,” etc.).
- The name and address of the chemical manufacturer, importer, or other responsible party.

Immediate use containers (test tubes, beakers, graduated cylinders, vials, pitchers, pails, or similar containers that are routinely used and reused) do not have to be labeled if:

- They are used only to transfer a hazardous substance from a labeled container.
- They remain under the control of the person who transferred the substance.
- They are only used during the work shift in which the transfer takes place.

Pipes or piping systems need not be labeled but their contents must be included in employee training.

Where labeling is not practical or feasible, such as for carbon monoxide from lift trucks or welding operations, warning signs or equivalent warning methods must be used.

Exceptions to the MERTKA regulation:

Technically Qualified Individuals (TQIs) are individuals who, because of their training, education, and experience, are deemed to be knowledgeable in the hazards associated with hazardous substances, harmful physical agents, or infectious agents. The only individuals who may claim TQI status are physicians, dentists, pharmacists, and lead research individuals.

There is no need to provide training to TQIs. However, TQIs must be notified when the training is going to be given to other employees and allowed to attend if they wish.

The TQI exemption applies *only to MERTKA training* and has no effect on other portions of the regulation or any other OSHA standard that requires training of employees. For example, employees who are exposed to bloodborne pathogens, which are infectious agents, must be trained in accordance with the Occupational Exposure to Bloodborne Pathogens standard. If bloodborne pathogens are included in the MERTKA training session on infectious agents, TQIs must attend.

Farms. Farming operations that employ ten or fewer employees are exempt from *all provisions* of Employee Right to Know, with the exception that label information must be provided to employees or their representatives. Farming operations employing more than ten employees or operating a temporary labor camp and employing any of its residents must comply with the Farming Operations Training Plan Standard, Minnesota Rules 5206.1300 to 5206.1900.

Waste Service Employers. Employers who collect, process, or dispose of waste regulated under the federal Resource Conservation and Recovery Act are exempt from the *hazardous substances and harmful physical agents* training and information

requirements of MERTKA. Waste service employers include garbage and rubbish collectors, landfill operators, hazardous waste transporters, and independent testing laboratories or government agencies who visit hazardous waste sites. To qualify for exemption under ERTK, waste service employers must develop and implement a training program for employees and submit that program to MNOSHA for approval. Again, the exemption from MERTKA requirements for waste service employers does not extend to any other OSHA standard. For example, waste service employers must comply with the Occupational Exposure to Bloodborne Pathogens Standard, 29 CFR 1910.1030, if employees have the potential for exposure to blood as a result of their job responsibilities.

Questions:

If you have questions on this topic, please contact the Office of Occupational Health and Safety at (612) 626-5008 or uohs@umn.edu, or see the website at http://www.ohs.umn.

Section 9
Safety Checklist

Event Name:					Civil Servant Sponsor Phone:				ORG Code:
Event Building/Location:									Date:
Item	Yes	No	N/A	Date Fixed	Item	Yes	No	N/A	Fixed Date
Pre-Event Planning and Management					**Material Storage/Handling**				
Safety Notification Checklist (Form 847) Completed					Materials properly stored/stacked				
Emergency numbers/contacts posted & distributed to staff and volunteers					Dust protection adequate				
Event Safety Plan Prepared					Loads lifted correctly				
Safety Briefing Prepared					**Poster Boards or Displays**				
Housekeeping/sanitation					Secured from falling				
Road closure and traffic control plan prepared					Placed on a level surface				
Size and type of crowd analyzed					**Compressed Gases**				
Hand washing/toilet facilities					Cylinders secured				
Clean eating/dining area ADA					Valve cap in place when not in use				
Fire Prevention					MSDS posted at use location				
Fire extinguishers available					**Ladders**				
Correct extinguishers for the type of fire anticipated (ie: paper, chemical, electrical, etc.)					Ladders in good condition				
No smoking posted and enforced					Side rails extend 36" above landing				
Stages/Speakers Platforms					Proper for job & secure				
Level					Inspected prior to use				
Free of trip hazards					**Scaffolding**				
Tents					Equipment in good condition				
Support posts erected safely					Scaffold is tied to structure				
Posts tied down and secured by water barrels. Note: ground stakes are not permitted					Guardrails, top, mid, toe boards in place				
Pole support lines do not present a hazard					Connections sound & secure				
Hand & Power Tools					Planking cleats in place				
Hand tools in good working condition					Worker protected from falling objects				
Cords in good condition					**Welding & Cutting**				
All mechanical safeguards in place					Screen & shields in place				
Proper tools utilized for each job					Electrical equipment grounded				
Tools grounded or double insulated					Compressed gas cylinders secure/upright				
Heavy Equipment					Proper personnel protection utilized				
Certified/Trained Operator					Fire extinguishers immediately available				
Brakes, lights, signals & alarms operable					Welding cables in good condition				
Wheels chocked when necessary					**Personal Protective Equipment**				
Seat belt equipped and used					Hardhats worn				
Pre-use inspection performed					Gloves available & used				
Barricades & Fencing					Steel toe footwear				
Site fenced					Eye protection utilized				
Roadways & sidewalks fenced					Ear protection utilized				
Floor openings planked or barricaded					Safety belts & lanyards utilized				
Access/traffic controlled					Respirators & masks utilized				

Workplace Safety Checklist

General:	Y	N	N/A	Comments
Workplace is clean				
Hazards are clearly labeled				
Hazards are properly stored				
Exits are accessible and clearly marked				
Floors,walls, and ceilings are in good repair				
Eating areas are separate from work areas				
Lighting levels are suitable from work areas				
Training:	-	-	-	-
Employees have been given training				
All electrical areas know the evacuation plan				
Safety Handbooks are available				
Employees know what to do in case of an accident				
Training sessions are held regularly				
Equipment:	-	-	-	-
Equipment is clean and in good working order				
All electrical cords are well grounded				
There is suitable ventilation				

PPE is available				
Stop mechanisms have been put in place				
Fire/ Earthquake:	-	-	-	-
First aid supplies are accessible and clearly marked				
Fire extinguishers are accessible and updated				
Sprinkler heads have an 18” clearance				
Cabinets and shelves are at an adequate height				
Cabinets and shelves over a certain height are secured to the wall				
Loose materials are secured or bolted down				
Fragile materials are securely locked down				

Section 9
Contact Information

Please contact Team 3102 if you have any questions or comments on improving our safety manual! We hope you enjoy and can apply to your team to improve safety.

Some of our contacts:

- Website: https://www.tnt3102.org/
- Facebook: tnt3102
- Our website also has more options

Safety Captain Contact:

- wroolie.sierra@nevis308.org

Team 3102 Mentor Contacts:

- ruscola@nevis308.org
- onetteberg@nevis308.org
- adahlby@nevis308.org