# 3. TEACHER RESOURCE PACKAGE

The intent of this section is to provide examples of handouts, signs, and other practical sample sheets.

## Instructional Techniques

- Present safety instruction with the following objectives in mind:
  - — Develop in students a sense of responsibility for their own safety and that of others.
  - — Emphasize the importance of PPE and their choice of clothing.
  - — Help students understand that the safe way of doing things is the best way.
  - — Help students recognize situations and their potential hazards.
  - — Help students learn safe practices that they will continue to use in their day-to-day lives.
- Reinforce safety consciousness in students through example. Always do things the safe way while indicating the potential hazards.
- Demonstrate the safe use of machines and tools. Document instructions, attendance, and students' safety scores.
- Present instruction on the proper care and use of personal protective devices.
- Provide instruction on what to do in case of an accident.
- Provide instruction not only on the use of equipment but also on the basic maintenance of tools, machines, and other equipment.
- Involve students in completing a job hazard analysis.
- Get students involved in starting a student safety committee designed to help strengthen existing safety programs.

## Student Safety Commitment


As a student in the lab/facility, it is important to observe safety rules, and to know and understand safety and health hazards associated with tools, machines, and processes. In all situations, one must use the SAFE method of dealing with hazards in the facility.

Students must:

- not enter the lab/facility unless a teacher is present.
- report all injuries and incidents to the teacher.
- know where the fire exit is.
- act appropriately. (Horseplay will not be tolerated.)
- wear eye protection for activities as outlined by the teacher.
- avoid handling tools, equipment, or materials without previous instruction and permission from the teacher.
- tie back long hair.
- wear appropriate clothing and safe footwear.
- read all labels and follow instructions when using any chemicals such as paints, glue, et cetera.
- report any broken tools, equipment, or hazardous situations to the teacher immediately.
- know and follow the safety rules that apply to each machine they use.
- pay attention to all lessons and demonstrations.
- know the operator's safety zone.
- keep floor and work surfaces free from clutter.
- report any spills immediately to the teacher.
- practise good housekeeping techniques.

**I have read and understand these rules and promise to obey them.**

_____ _____

Student's name (printed) Student's signature

_____

Date

# Student Safety Record

Outcome: _____

_____

Student's Name: _____ School _____

Course _____ Feeder School _____

Teacher _____

**This record is an indication of the tools and/or machines in which the student has witnessed teacher demonstrations, has successfully completed the written test, and has demonstrated safe operation to the teacher.**

| Enter Date Completed | | | |
|---|---|---|---|
| **Tool/Machine** | **Teacher Demonstration** | **Test Score** | **Student Demonstration** |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| 13. | | | |
| 14. | | | |
| 15. | | | |

# Teacher Observation Safety Report

Course: _____ Teacher _____

School _____ Class Period _____

**Observation/Codes**

1. Demonstrates leadership in safe practices.
2. Observes and obeys all safe work procedures.
3. Needs to be reminded to wear safety equipment.
4. Needs to be reminded to pay attention to demonstrations.
5. Demonstrates unsafe behaviour.
6. Demonstrates poor clean-up participation.

| | Enter Date | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Student Name** | | | | | | | | | | | | | | |
| 1. | | | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | | | |
| 5. | | | | | | | | | | | | | | |
| 6. | | | | | | | | | | | | | | |
| 7. | | | | | | | | | | | | | | |
| 8. | | | | | | | | | | | | | | |
| 9. | | | | | | | | | | | | | | |
| 10. | | | | | | | | | | | | | | |
| 11. | | | | | | | | | | | | | | |
| 12. | | | | | | | | | | | | | | |
| 13. | | | | | | | | | | | | | | |
| 14. | | | | | | | | | | | | | | |
| 15. | | | | | | | | | | | | | | |

## Hand Tools—Safety Procedures

SAFE MANITOBA

SPOT THE HAZARD.
ASSESS THE RISK.
FIND A SAFER WAY.
EVERY DAY.

- Use tools for their designed purpose.
- Carry all sharp and pointed tools or objects with the sharp end in a downward position.
- Remove jewelry where conditions are warranted.
- Wear eye protection at all times.
- When using hand tools, balance weight equally on both feet.
- When loosening or tightening nuts and bolts, be careful that the wrench does not slip or give way suddenly. This can be dangerous to fingers and knuckles.
- Place pressure on the solid jaw of an adjustable wrench.
- Consider where other people are, especially when cutting or chipping off rivets or burrs.
- Ensure that tools with handles are safe and that the handles are securely mounted. Check tools before use (e.g., hammer handle and head).
- Report any damaged or worn tools, which are unsafe.
- Always cut away from your body and keep both hands behind the cutting edge.
- Close all vises when not in use.
- Files must be used with properly fitting handles.

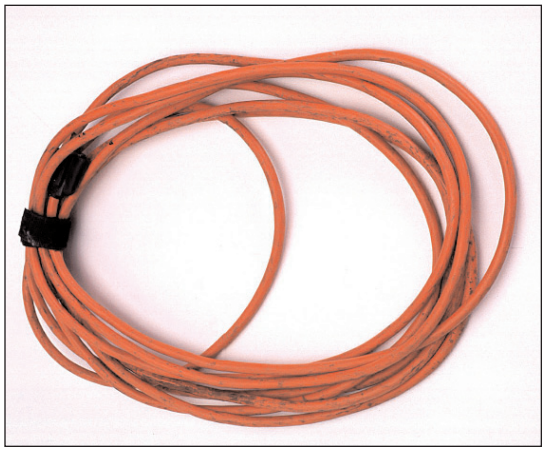
## Portable Power Tools—Safety Procedures

- Remove all jewelry
- Before operating any power tool for the first time, the teacher must demonstrate the correct procedure of operation and the safety guards that are used.
- Make all adjustments to the power tool before plugging it in.
- Read the safety rules and instructions regarding each machine tool.
- Check the power cord and ensure the ground wire is not missing or broken.
- Ensure work area is clean and free from debris.
- Avoid loose power cords on the floor.
- Power tools should not be operated in the vicinity of flammable materials.
- Never use a damaged or defective power tool.
- Use all guards supplied by the manufacturer.
- Assess the job to see if other safety gear should be worn (i.e., face shield and hearing protection).
- Remove all wrenches or chuck keys from the power tool after completing the setup.
- Secure any loose clothing, draw strings from hoods, or long hair, which can get entangled in moving parts.
- Look around and ensure that no one is in direct line with fast moving discs, such as saws, grinders, and wheels.
- Allow power tools to reach full working speed before starting the task.
- If you need the attention of someone operating a power tool, wait until they have finished their task.
- Set a power tool down once it has come to a complete stop.
- Unplug the tool before changing bits or blades.
- Remove the plug from the receptacle by grasping the plug not the cord.
- Clean up the area when finished. Good housekeeping promotes safety.
- Disconnect all portable power tools when not in use.
- When shutting off a power tool, let it come to a complete stop by itself.
- Guide power tools – do not force them.
- Use two hands on the power tool when required.
- When using power tools, remember to balance weight equally on both feet. Proper stance will help prevent incidents.
- Secure all work by clamping, if possible.

SAFE MANITOBA

SPOT THE HAZARD.
ASSESS THE RISK.
FIND A SAFER WAY.
EVERY DAY.

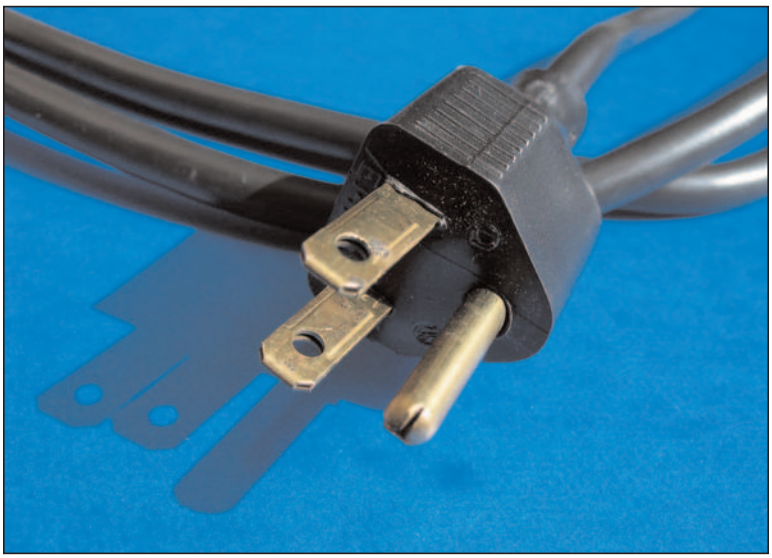
## Electrical Cords—Safety Procedures



- Electrical portable tools must be properly grounded. Check to see that ground wires are not missing or broken.
- Carry a power tool by the handle and remove the plug to disconnect it from a receptacle.
- Keep electrical cords from heat, oil, moisture, or sharp edges.
- Avoid contacting or cutting power cords during use of power tools.
- Always use power tools in a dry condition and a safe environment if the surrounding area is wet.
- Avoid loose extension cords on floors.

SAFE MANITOBA

SPOT THE HAZARD.
ASSESS THE RISK.
FIND A SAFER WAY.
EVERY DAY.



## General Equipment—Safety Procedures

- Remove all rings, watches, and jewelry when using equipment.
- Power must be turned off when machines are not in use.
- Read and understand the safety rules and instructions regarding each machine. **Remember, when in doubt, ASK.**
- Keep the floor and work area clean.
- Always keep tools, hands, clothing, and hair away from all moving parts.
- Only operate machines with the teacher's prior instructions, demonstrations, and permission.
- When operating any machine, always follow all safety rules and procedures dealing with that machine and task.
- Before starting the machine, make sure that both the work and the cutting tool are secured.
- Report any damaged or defective tools or machines to the teacher.
- Use all guards and hold-down devices on the machine that will add to the safety of the operator.
- Machines with loose or poorly secured guards must be properly adjusted before using them.
- Inform the teachers if you suspect anything wrong with the grounding system or the machine.
- Wear proper eye/face protection as required.
- Wear proper clothing and hearing protection as required.
- Certain types of guards are adjustable. Make sure the guards are adjusted to give the maximum protection.
- If you are working with another student, only one should operate the machine and power switch.
- Always remove all tools from the machine after completing setup.
- Stay clear whenever power machines are being started. Do not have loose clothing or long hair, et cetera, around revolving parts.
- Keep fingers as far away from the machine as the size of work permits and never closer than 130 mm. Use teacher-provided push sticks.
- Stand to the side of fast-moving discs, such as saws, grinders, and wheels.
- Always allow machines to reach proper working speed before commencing work.
- Avoid distractions of any form. Talking or someone standing too close can be dangerous practice to the operator. Wait until the operator is finished before getting his or her attention.
- Always keep your hands away from the work when the machine is running.

SAFE MANITOBA

SPOT THE HAZARD.
ASSESS THE RISK.
FIND A SAFER WAY.
EVERY DAY.

## Drill Press—Safety Procedures

- Eye protection must be worn at all times.
- Loose clothing, jewelry, and drawstrings must be secured when operating a drill press.
- Long hair must be secured so it is not a safety hazard.
- Clamp all work securely before starting the machine.
- Select the correct bit, and ensure it is in good condition.
- Make sure the chuck wrenches have been removed from the drill chuck before starting the machine.
- Drill slowly. Forcing will cause the drill to break or splinter.
- Avoid reaching around or in back of any rotating drill.
- Always clear debris with a chip brush.
- Always ensure the machine has come to a complete stop and the electrical plug is removed before changing the belt for speed regulation.
- If the drill sticks in the work, stop the motor by turning it off, wait until it comes to a complete stop, and rotate the drill by hand to free it from the work. Call the teacher if in doubt.
- Always clear away chips and metal curls with a hand brush, and only when the machine has come to a complete stop.

SAFE MANITOBA

SPOT THE HAZARD.
ASSESS THE RISK.
FIND A SAFER WAY.
EVERY DAY.

SAFE MANITOBA

SPOT THE HAZARD.
ASSESS THE RISK.
FIND A SAFER WAY.
EVERY DAY.

## Protective Clothing

- Be sure to wear appropriate safety glasses as set by the teacher.
- Tasks such as spot welding, arc, mig, gas welding, and plasma cutting require special eye and face protection as well as special clothing requirements.
- Wear appropriate footwear.
- Wear clothing that is suitable to that specific lab/facility.
- If conditions exist where the noise levels are high, wear approved hearing protection.
- Where overhead hazards exist, hardhats may be necessary.

## Hazardous Products—Safety Procedures


- All containers containing hazardous products must be labelled as to their contents. Take time to read the label and ensure you are following the precautions and wearing specific safety gear as noted.
- All hazardous products must have current (no older than three years) Material Safety Data Sheets. Know where these are located.
- Some products require adequate ventilation. Ask your teacher where they can be used.
- If corrosive or explosive liquids or oils are spilled, they must be neutralized first and cleaned up immediately. Ask your teacher for the clean-up procedure.
- Know the symbols for hazardous products.
- Use a special vacuum to clean up hazardous areas of dust, particles, et cetera, and dispose of materials properly.
- Etchants used in electronics, such as ferric chloride or ammonium persulfate, must be used with extreme caution. Read and follow instructions on the label.
- Use sealable containers to store flammable liquid at all times.
- Use approved safe cleaners for cleaning hands or clothing.
- When finished using products such as paint or solvents, put the lid on securely and place the item back in the approved fireproof container.
- Welding and cutting operations must not be allowed in the vicinity of the vehicle fuel tank or lines.
- Extension lamps and power tools must be kept away from leaking gas lines, tanks, or spills.
- The varsol (parts) cleaning tank must be used with adequate ventilation, face protection, and rubber gloves.
- The lid of the varsol tank must be kept closed when not in use.
- Penetrating fluid and brake fluid can react with paints, plastics, et cetera. Treat them with caution and wipe up spills following the directions as outlined by the teacher.

SAFE MANITOBA

SPOT THE HAZARD.
ASSESS THE RISK.
FIND A SAFER WAY.
EVERY DAY.

## Hoist and Lifting Devices—Safety Procedures

- Your teacher must supervise as you hoist a vehicle.
- When lifting a vehicle, there must be an observer positioned to the side of and well away from the vehicle to assist the hoist operator in raising the vehicle at an even level.
- To prevent damage, the hoist must be fully lowered before the vehicle is to be moved.
- Hoist posts and/or pads must be correctly positioned to the individual vehicle before a lift is attempted.
- Students must only work under vehicles in a full lift position with safety locks engaged.
- Operators must always face the lift vehicle while the lift is underway.
- Hoists must be regularly inspected for proper operation and safe condition by competent personnel.
- Before working under any vehicle, it must be supported securely on approved stands at the correct lift points.
- Always check the rated capacity of any lifting crane.
- Cranes are meant for vertical lifts only.
- Never jack up a vehicle while someone is working underneath the vehicle.
- Jacks must be used within their rated capacity. The lift must be vertical and never on an angle.
- Engine slings must be securely fastened to the engine before lifting. Fasteners must be of correct sizes for the lifting weight and fully tightened to secure sling lugs.
- Overhead lab/facility doors should only be operated when the doorway is free of people and obstructions.

SAFE MANITOBA

SPOT THE HAZARD.
ASSESS THE RISK.
FIND A SAFER WAY.
EVERY DAY.

# Welding—Safety Procedures

SAFE MANITOBA

SPOT THE HAZARD.
ASSESS THE RISK.
FIND A SAFER WAY.
EVERY DAY.

### Personal Protective Equipment

- Wear leather gloves for handling metals.
- Use pliers or vise grips when handling hot materials.
- Safety glasses and face shields must be worn when chipping, grinding, drilling, punching, chiseling, spot welding, or wire brushing.
- Frayed and greasy clothing can catch fire easily during welding, cutting, or grinding operations.
- Proper clothing must be worn (denim and leather are recommended). Avoid materials such as nylon.
- Lighters or matches are never allowed in any welding area.
- Wear appropriate eye, face, body, leg, and foot protection as set forth by the teacher.

### Housekeeping

- Sheet metal and other sharp-edged materials must be stored in protected-style storage areas and handled with care.
- Always sweep the weld area before welding and ensure all flammable materials are removed.
- Keep the welding area free of metal chips and weld splatter.
- Welding and cutting operations must not be allowed in the vicinity of the vehicle fuel tank or fuel lines.

SAFE MANITOBA

SPOT THE HAZARD.
ASSESS THE RISK.
FIND A SAFER WAY.
EVERY DAY.

### Gas Welding

- Gas welding must be done in a place that provides for adequate ventilation, which removes fumes, dust, and gases from the air.
- Welding galvanized materials releases toxic gasses, which we want to avoid. If in doubt of the material, ask your teacher.
- Know where the fire blanket is located.
- Lighters and matches must never be allowed in the welding area.
- Oil or grease on cylinder fittings may cause an explosion. Avoid these materials around the area.
- Follow the proper lighting and extinguishing techniques for the welding torch as set out by the teacher.
- Gas cylinders must be fitted with safety caps when in storage or transit.
- Gas cylinders must be chained securely in the vertical position.
- Use a striker to light the oxygen/acetylene/flame.
- One to one-and-one-half turns on the acetylene cylinder valve allow a full flow from the cylinder, yet allow fast shut-down in an emergency.
- Acetylene must be set at pressures lower than 15 PSI.

### Electric Welding

- Always keep welding stations and clothing dry to avoid electric shock.
- Keep electric arc away from flammable materials.
- Lighters and matches are never allowed in the welding area.
- The welding arc produces ultraviolet rays that destroy skin cells. All exposed skin areas must be covered.
- Welders must be protected by an approved welding helmet and heat-/spark-resistant clothing (leather preferred).
- All people in the room must be protected from the rays of electric welding. Protective curtains must be fully drawn.
- Only strike an arc when you and others are ready and suitably protected.

## Hazard Analysis – Student Exercise

The teacher can distribute the following Lab Operations Hazard Analysis form. Dividing the students into groups of five with each team appointing a leader, the team can devote time to attempting to add to and improve information on the analysis format. The analysis format is for the operation of drilling and countersinking stock on the drill press.

Each team is to concentrate on a different major operation. At the end of the timed period allocated by the teacher, each team leader summarizes for the class the findings of their team.

| Lab Operations Hazard Analysis | | | | |
|---|---|---|---|---|
| **Task** | **Potential Hazard** | **Condition Triggering Hazard into Incident** | **Lab Procedural Requirements** | **Safety and PPE Requirements** |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

## Lab Operations Hazard Analysis

| Task | Potential Hazard | Condition Triggering Hazard into Incident | Lab Procedural Requirements | Safety and PPE Requirements |
|---|---|---|---|---|
| 1) Inspect and set up drill press. | Defective chuck, switches, clamps, cord, etc. | Operating drill press with defective parts. | Do not operate drill press if defective.<br>Attach "Do Not Operate" tag. | |
| 2) Centre-punch holes at both ends of work-piece. | Work-piece not securely clamped while centre-punching holes. | Work-piece slipping from underneath punch when punch is hit with hammer. | Work-piece is to be secured in vise before striking punch.<br>Select No. 2 combination drill and countersink. | |
| 3) Drill and countersink centre holes on drill press. | Placing work-piece in position for drilling without clamping in vise. | Bringing drill in contact with work-piece. | Work-piece is to be secured in vise before drilling holes. | |
| | Leaving chuck wrench in chuck at time when machine is started. | Starting drill press. | Chuck wrench to be removed prior to starting machine. | |
| | Stop/start buttons not located within easy reach of operators, causing student to reach behind or alongside moving part or not being able to shut off machine in an emergency. | Starting machine; having to shut machine off (normally); having to shut machine off in an emergency. | Stop/start button to be located within easy access of operator. | Start/stop buttons identified with bright colours. |
| | Students with long hair, long-sleeved shirt, baggy clothing, drawstrings on hooded sweater | Clothing, hair, etc. coming into contact with drill or chuck while machine is in operation. | Sleeves rolled up, hair in nets or tied back, baggy clothing and drawstring secured. | |
| | Rotating drill in chuck. | Students' hand or arm coming in contact with spinning drill. | Student to fully concentrate on operations. | |
| | Drill breaking during drilling mode. | Excessive pressure placed on drill and/or not lubricating drill. | Drill should not be jammed down into stock; use slow and even pressure; lubricate. | Face shield and/or goggles. |
| | Flying metal chips. | Working on drill press. | If excessive chips begin to fly from work-piece, shut off machine and ask for assistance. | Face shield and/or goggles. |
| | Metal chips created during drilling procedure. | Student attempting to remove chips while machine is running. | Drill press is to be shut off and chips cleaned with brush. | |
| | Drill sticks in work. | Drilling stock. | Stop machine, free by hand. | |
| | Pinch points at belts. | Adjusting belts. | Always stop press before adjusting belts. | |

# Hazard Analysis

**School Name:** _____ **Date:** _____

| **Task:** | **Facility:** | **Conducted By:** |
|---|---|---|
| **Task Steps** | **Hazards** | **Corrective Actions** |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

# Hazard Analysis

**School Name:** _____ **Date:** _____

| **Task:** | **Facility:** | **Conducted By:** |
|---|---|---|
| | | |

| **Hazards Present:** |
|---|
| |

| **Personal Protective Equipment Required:** |
|---|
| |

| **Safe Work Procedure:** |
|---|
| |

# Industrial Arts Accident/Injury Report

Name of Student: _____ Facility: _____

Date: _____

School: _____ Teacher: _____

Date of Accident: _____ Time of Accident: _____

Description of Injured

Birth date: _____ Age: _____ Sex: _____

Grade level : _____

**Injury Type**

- ❑ struck against
- ❑ struck by
- ❑ fall
- ❑ slipped/tripped
- ❑ abrasion
- ❑ Contacted (electrical, chemical, etc.)

| Did student: | Yes | No |
|---|---|---|
| receive training for task? | ❑ | ❑ |
| operate according to safe/appropriate practices? | ❑ | ❑ |
| use proper equipment? | ❑ | ❑ |
| operate without authority? | ❑ | ❑ |
| use appropriate PPE? | ❑ | ❑ |
| behave appropriately? | ❑ | ❑ |

Draw a line from injury to body part(s). For multiple injuries draw multiple lines.

| | |
|---|---|
| sprain | head |
| strain | eye |
| contusion/bruise | face |
| abrasion | ear |
| laceration | neck |
| puncture | shoulder |
| burns (heat, flame, chemical) | chest |
| fracture | lungs |
| foreign body in eye | abdomen |
| electrical shock | back |
| other _____ | upper arm |
| | elbow |
| | forearm |
| | wrist |
| | hand |
| | finger |
| | thigh |
| | lower leg |
| | ankle |
| | foot |
| | toe |
| | knee |
| | other |

| Description of Environment | Yes | No |
|---|---|---|
| Illumination/lighting sufficient? | ❑ | ❑ |
| Chemicals (if known) | ❑ | ❑ |
| Fume | ❑ | ❑ |
| Dust | ❑ | ❑ |
| Other _____ | ❑ | ❑ |

Describe in detail how the accident happened.

_____

_____

_____

_____

Did the students receive outside medical attention? If yes, where?

_____

_____

Were the parents notified of the student's injury?

_____

# Teacher's Record

Name of Student: _____ Grade: _____

Lab/Facility: _____ Date: _____

Home of School: _____ School: _____

Teacher: _____ Date of Accident: _____

| Name of Injured Student | Date of Injury | Where Incident Happened | Nature of Injury | Part of Body | Source of Injury | Tools/ Equipment Used | Hazardous Condition | Cause of Accident |
|---|---|---|---|---|---|---|---|---|
| Bart Simpson | 1/18/05 | Shop Class (Room 18) | Cut requiring 10 stitches | Right hand | Saw blade | Band saw | Unguarded blade | • Failure to adjust guard properly.<br>• Failure to use push stick. |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

# Instructor Safety and Health Checklist

**For Industrial Arts Facilities**

School: _____ Date: _____

Instructor: _____ Facility: _____

Circle the appropriate rating

S = Satisfactory, U = Unsatisfactory, N/A = Not Applicable

## A. General Physical Condition

| | | | |
|---|---|---|---|
| S | U | N/A | 1. Tables, machines, and equipment are arranged to allow safe working conditions. |
| S | U | N/A | 2. Aisles are unobstructed. |
| S | U | N/A | 3. Surfaces are clean. |
| S | U | N/A | 4. Exhaust fans are in working condition. |
| S | U | N/A | 5. Fire extinguishers are fully charged. |
| S | U | N/A | 6. Exit doors are clear and unobstructed. |

Comments: _____

## B. Housekeeping

| | | | |
|---|---|---|---|
| S | U | N/A | 1. General appearance is neat and orderly. |
| S | U | N/A | 2. Tools are located easily at the tool panel. |
| S | U | N/A | 3. Tables are clean. |
| S | U | N/A | 4. Corners are clean and clear. |
| S | U | N/A | 5. Materials are stored in an orderly and safe condition. |
| S | U | N/A | 6. Dangerous materials such as paints and chemicals are stored in metal cabinets. |
| S | U | N/A | 7. An approved metal container is provided for waste and oily rags. |
| S | U | N/A | 8. Floors are clean of oil, water, and other foreign material. |
| S | U | N/A | 9. Floors, walls, and windows are cleaned periodically. |

Comments: _____

## C. Equipment

| | | | |
|---|---|---|---|
| S | U | N/A | 1. Machines are arranged so that students are protected from hazards of their own machines, other machines, passing students, etc. |
| S | U | N/A | 2. Danger zones are properly indicated/or guarded. |
| S | U | N/A | 3. Enclosure guards protect all moving belts and gears. |
| S | U | N/A | 4. All guards for blades and belts are in use. |
| S | U | N/A | 5. All equipment control switches are easily accessible to the student. |
| S | U | N/A | 6. All machines and power tools can be powered off when the instructor is out of the room. |
| S | U | N/A | 7. Machines are in safe working condition. |
| S | U | N/A | 8. Hand tools are kept clean, their handles in good condition, and they are in safe working order. |

Comments: _____

# Instructor Safety and Health Checklist (continued)

## D. Electrical

| | | | |
|---|---|---|---|
| S | U | N/A | 1. All switches and outlets are in good condition. |
| S | U | N/A | 2. Emergency stop switches are located throughout the room and are easily accessible. |
| S | U | N/A | 3. Male ends of electrical cords have their proper ground blades in place. |
| S | U | N/A | 4. A master control switch is in use for all equipment and tools. |

Comments: _____

## E. Personal Protective Equipment

| | | | |
|---|---|---|---|
| S | U | N/A | 1. Appropriate safety glasses are provided and are in good condition. |
| S | U | N/A | 2. Hearing protectors are available. |
| S | U | N/A | 3. Appropriate gas welding goggles and welding helmet are available. |
| S | U | N/A | 4. Proper wearing apparel is available for the job being done. |
| S | U | N/A | 5. Respirators are available for dusty or toxic atmospheres such as spray painting or using toxic solvents. |
| S | U | N/A | 6. Other students are protected from electric welding by curtains. |
| S | U | N/A | 7. First-aid kit is adequate and easily located. |
| S | U | N/A | 8. Eyewash station is clean and functioning properly. |

Comments: _____

## F. WHMIS

| | | | |
|---|---|---|---|
| S | U | N/A | 1. WHMIS centre is up and placed in an easily accessible location. |
| S | U | N/A | 2. Material safety data sheets are available for every applicable item in the facility. |
| S | U | N/A | 3. All applicable items as above are labelled. |
| S | U | N/A | 4. Students are made aware of WHMIS and its purpose. |
| S | U | N/A | 5. Students are tested on their WHMIS understanding. |

Comments: _____

# Student Safety and Health Checklist

## For Industrial Arts Facilities

School: _____ Date: _____

Students: _____ Facility: _____

_____ _____

_____ _____

Circle the appropriate rating

S = Satisfactory, U = Unsatisfactory, N/A = Not Applicable

### A. General Physical Condition

| | | | |
|---|---|---|---|
| S | U | N/A | 1. Tables, machines, and equipment are arranged to allow safe working conditions. |
| S | U | N/A | 2. Aisles are unobstructed. |
| S | U | N/A | 3. Surfaces are clean. |
| S | U | N/A | 4. Exhaust fans are in good working condition. |
| S | U | N/A | 5. Fire extinguishers are fully charged. |
| S | U | N/A | 6. Exit doors are clear and unobstructed. |

Comments: _____

### B. Housekeeping

| | | | |
|---|---|---|---|
| S | U | N/A | 1. General appearance is neat and orderly. |
| S | U | N/A | 2. Tools are located easily at the tool panel. |
| S | U | N/A | 3. Tables are clean. |
| S | U | N/A | 4. Corners are clean and clear. |
| S | U | N/A | 5. Materials are stored in an orderly and safe condition. |
| S | U | N/A | 6. Dangerous materials such as paints and chemicals are stored in metal cabinets. |
| S | U | N/A | 7. An approved metal container is provided for waste and oily rags. |
| S | U | N/A | 8. Floors are clean of oil, water, and other foreign material. |
| S | U | N/A | 9. Floors, walls, and windows are cleaned periodically. |

Comments: _____

### C. Equipment

| | | | |
|---|---|---|---|
| S | U | N/A | 1. Machines are arranged so that students are protected from hazards of their own machines, other machines, passing students, etc. |
| S | U | N/A | 2. Danger zones are properly indicated/or guarded. |
| S | U | N/A | 3. Enclosure guards protect all moving belts and gears. |
| S | U | N/A | 4. All guards for blades and belts are in use. |
| S | U | N/A | 5. All equipment control switches are easily accessible to the student. |
| S | U | N/A | 6. All machines and power tools can be powered off when the instructor is out of the room. |
| S | U | N/A | 7. Machines are in safe working condition. |
| S | U | N/A | 8. Hand tools are kept clean, their handles in good condition, and they are in safe working order. |

Comments: _____

## Student Safety and Health Checklist (continued)

### D. Electrical

| | | | |
|---|---|---|---|
| S | U | N/A | 1. All switches and outlets are in good condition. |
| S | U | N/A | 2. Emergency stop switches are located throughout the room and are easily accessible. |
| S | U | N/A | 3. Male ends of electrical cords have their proper ground blades in place. |
| S | U | N/A | 4. A master control switch is in use for all equipment and tools. |

Comments: _____

### E. Personal Protective Equipment

| | | | |
|---|---|---|---|
| S | U | N/A | 1. Appropriate safety glasses are provided and are in good condition. |
| S | U | N/A | 2. Hearing protectors are available. |
| S | U | N/A | 3. Appropriate gas welding goggles and welding helmet are available. |
| S | U | N/A | 4. Proper wearing apparel is available for the job being done. |
| S | U | N/A | 5. Respirators are available for dusty or toxic atmospheres such as spray painting or using toxic solvents. |
| S | U | N/A | 6. Other students are protected from electric welding by curtains. |
| S | U | N/A | 7. First-aid kit is adequate and easily located. |
| S | U | N/A | 8. Eyewash station is clean and functioning properly. |

Comments: _____

### F. WHMIS

| | | | |
|---|---|---|---|
| S | U | N/A | 1. WHMIS centre is up and placed in an easily accessible location. |
| S | U | N/A | 2. Material safety data sheets are available for every applicable item in the facility. |
| S | U | N/A | 3. All applicable items as above are labelled. |
| S | U | N/A | 4. Students are made aware of WHMIS and its purpose. |
| S | U | N/A | 5. Students are tested on their WHMIS understanding. |

Comments: _____

# Safety Inspection Report

School: _____ Date of Inspection: _____

Facility: _____ Time of Inspection: _____

| Item | Hazards Observed | Repeat Item | | Recommended Action | Follow Up | | |
|---|---|---|---|---|---|---|---|
| | | Yes | No | | Corrective Action Taken | Date Completed | Authorized Signature |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Copies to:<br>(for action) | | | | | Inspected by: | | |
| Copies to:<br>(for information) | | | | | | | |

# Hazardous Material Inspection

Circle the appropriate rating

| | | | | Comments |
|---|---|---|---|---|
| | | | **Product Information** | |
| Yes | No | N/A | 1. Containers are labelled to meet legal requirements? | |
| Yes | No | N/A | 2. Labels are easy to read? | |
| Yes | No | N/A | 3. Material safety data sheets (MSDSs) are available and current? | |
| | | | **Preventative Measures – Ventilation** | |
| Yes | No | N/A | 4. Ventilation adequate? (Evidence of dust, fumes, etc., may be caused by inadequate or malfunctioning ventilation.) | |
| | | | **Handling Procedures and Equipment** | |
| Yes | No | N/A | 5. Handling procedures are explained thoroughly and followed? | |
| | | | **Leaks and Spills** | |
| Yes | No | N/A | 6. Any evidence of leaks or spills? | |
| Yes | No | N/A | 7. Cleaning procedures are explained thoroughly and followed? | |
| Yes | No | N/A | 8. Waste disposal procedures are adequate and followed? | |
| | | | **Storage** | |
| Yes | No | N/A | 9. Storage conditions are adequate? | |
| Yes | No | N/A | 10. Safety containers for flammable liquids (i.e., gasoline)? | |
| | | | **Personal Protective Equipment** | |
| Yes | No | N/A | 11. Personal protective equipment available and used? | |
| Yes | No | N/A | a) Gloves | |
| Yes | No | N/A | b) Eye protection | |
| Yes | No | N/A | c) Aprons | |
| Yes | No | N/A | d) Footwear | |
| Yes | No | N/A | e) Respirator/Dust mask | |
| Yes | No | N/A | f) Others | |

## Equipment Maintenance Log

**Equipment description:** _____

**Serial Number:** _____ **Model Number:** _____

| Date: | Action Taken/Comments: | Initals |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

# Student Assignment

## General Safety Concerns in the School Environment

### Purpose

To gain an understanding that everyone must play a role in safety and health education. Although it depends on the age group, safety and health should be taught in all settings, including the home, workplace, school, and/or playground.

- Garbage should not be on the floors in the hallways.
- Shoes and boots should not be scattered along the floor.
- Students should not run in the hallways.
- The smell of cleaning solutions should be kept to a minimum.
- Students should keep the area clean and neat.
- Students should exercise caution when opening doors.
- Students should exercise caution when going to and from school (bus, car, walking, bike).
- Students should exercise caution when using classroom tools and products (scissors, stapler, glue, markers, et cetera).
- Fire drills and exits should be clear and well marked.
- Students should dress appropriately (inside and outside).
- Students should wear appropriate protective equipment.

### Procedure

Students create, individually or in small groups, health and safety promotional posters for the rest of the school.

Students may begin by brainstorming health and safety issues and concerns they face within their age groups in terms of injury prevention and safety in the workplace, home, and/or school.

Students design and create posters to display safety and health issues and concerns with the goal of promoting safety and health to others.

Posters can be created for various parts of the school, subjects, or activities.

## Student Activity:
## Lasting Effects of Incidents—Hand Injury

### Purpose

Understand the impact of incidents on physical abilities.

Prompt awareness and knowledge of people who have lost fingers as a result of an incident.

### Procedure

1. Your entire class has been injured on the job. You have all lost three fingers (index, middle, and ring fingers) on the hand that you write with.
2. Using masking tape, all group members must tape the three fingers of their writing hand down towards the palm to represent the injury.
3. While your fingers are taped, you and each of your groups' members attempt the following tasks using only the injured hand.
   - Drop a pencil on the floor and pick it up.
   - Write your full name and address on paper.
   - Take your shoe off and put it on.
4. Remove the tape from your hands. Discuss as a group the challenges you found doing the above tasks.
   - Remember: hands are used in most things we do every day, which makes them prone to injury.
5. As a group, create posters to help teach others about keeping fingers and hands free from injury on an off the job.

## Student Assignment:
## Lasting Effects of an Incident – CAD Assignment

### Purpose

Understand the impact of the incident on physical abilities; promote awareness and knowledge of people restricted to wheelchairs.

### Explanation

Injuries as a result of incidents can have a long-lasting effect on an individual and his/her family. Lifestyles that we take for granted can change dramatically.

There are many supports that help people in wheelchairs go about their normal routine. However, more can be done to educate people on the prevention of accidents.

### Activity

In groups, students are responsible for designing a home for a young person who has been recently confined to a wheelchair as a result of a workplace injury.

Students then brainstorm ideas of how a house may have to be changed in order to make it suitable for increased comfort and accessibility.

Students may then draw the house using traditional drafting instruments or using a suitable CAD program. Floor plans and elevations should be included.

# Notes