

# TECHNOLOGY EDUCATION LAB SAFETY INSPECTION CHECK LIST

School \_\_\_\_\_ Lab \_\_\_\_\_ Date \_\_\_\_\_

Instructor \_\_\_\_\_ Inspection Team \_\_\_\_\_

## PURPOSE

A safe environment is an essential part of the Technology Education safety education program. The safe environment will exist only if hazards are discovered and corrected through regular and frequent inspections by school personnel, administrators, safety coordinators, teachers and students. Safety inspections are to determine if everything is satisfactory.

A safety inspection checklist for Technology Education is an objective tool for helping improve working conditions in the area where used. Using a safety checklist for the inspection has some advantages over other methods of safety inspection. This list is intended to accomplish the following:

1. Inform, educate and remind people of what to look at.
2. Train personnel to be observant and aware of their environment.
3. Provide a source of feedback information to teachers and administrators. This allows them to determine the effectiveness of their safety program and training.
4. Provide a record of safety items and safety activity.

## INSTRUCTIONS FOR USE

1. A safety inspection team should complete the checklist for each Tech Ed lab. (The building principal should be a member of the team.)
2. The inspection team may arrange for additional assistance from outside agencies for the regular safety inspections.
3. As a minimum, safety inspections should be made at the beginning of every school term or semester. More frequent inspections may be advisable.
4. Inspections should be planned in advance, preferably for times when students will be using the facility.
5. The current inspection report should be compared with previous reports and records to determine progress. The report should be studied in terms of accident situations so that special attention can be given to these conditions and locations which are accident producers.
6. In all cases where unsatisfactory responses are indicated it is important that corrective actions be noted and copies forwarded to the proper authorities.
7. Each unsafe condition should be corrected as soon as possible in accordance with accepted local procedures.
8. A conference of the inspection team and the teacher should be held shortly following the inspection.

## CHECKING PROCEDURE

Draw a circle around the appropriate letters, using the following code. Respond to all items:

**S Satisfactory** (needs no attention)

**U Unsatisfactory** (needs immediate attention)

**NA Not applicable**

Recommendations should be made in all cases where a “U” is circled. Space is provided at the end of the form for such comments. Designate the items covered by the recommendation, using the section letter and number applicable (e.g. B-2).

### A. SCHOOL ADMINISTRATION

1. The school principal and school safety officer visit all laboratories to check for hazardous conditions and to make provisions for corrections.....S U NA
2. The school principal requires that standardized written reports on hazardous conditions be submitted and distributed to the proper individuals to assure corrective action.....S U NA
3. A written procedure has been established for reporting defective equipment immediately to assure prompt repair .....S U NA
4. The school principal keeps records of all inspections and these records are readily available for reference .....S U NA
5. The school district has defined “an accident” and has available employee and student accident reporting forms which fulfill the state statistical requirements .....S U NA
6. All accidents are promptly reported and analyzed. Immediate steps are undertaken to correct causes of accidents and copies of all reports are kept in a school file until it is determined they are no longer necessary.....S U NA
7. The school has readily available all necessary information in order to reach parents or guardians in case of emergency.....S U NA
8. The school has an effective standardized district safety policy.....S U NA
9. The school has an effective policy and procedure to follow in case of accidents .....S U NA
10. The school has a policy and procedure for the administration of first aid .....S U NA
11. The instructor is notified of all student disabilities (physical and mental) .....S U NA
12. The instructor has direct communication with the school nurse and outside telephone lines available.....S U NA
13. First aid personnel or nurse is available at all times.....S U NA
14. The school principal accepts the responsibility for keeping class sizes appropriate for activities, student age, facility size, and the ,number of work stations available.....S U NA

**A. SCHOOL ADMIN (CONTINUED)**

- 15. The school principal is aware of his responsibility and liability in regard to students' protection .....S U NA
- 16. The school principal requires that the shop areas be maintained and cleaned, and provided with the same custodial services available to other general education programs .....S U NA
- 17. The school principal will make sure that a Tech Ed certified instructor is in attendance when student work takes placeS U ..... NA
- 18. A policy exists for dealing with the removal of students who consistently violate safety regulations .....S U NA

**B. INSTRUCTOR**

- 1. Tech Ed teacher supervision is provided at all times when classes are in session. S ..... U NA
- 2. The instructor continuously inspects his facility to discover needed repairs and corrections.....S U NA
- 3. The instructor utilizes an inspection checklist when making formal inspections and maintains file copies...S U NA
- 4. The instructor reports all hazardous conditions to the proper administrator .....S U NA
- 5. The instructor keeps records of all inspections and has copies of inspection reports readily available for reference .....S U NA
- 6. The instructor keeps records of all maintenance problems and the disposition of requests for corrections.....S U NA
- 7. The instructor keeps records of all accidents, and analyzes them immediately for corrective measures.....S U NA

- 8. The instructor keeps records of all safety instruction and evaluation.....S U NA
- 9. The instructor selects student activities, keeping in mind the maturation level and ability of the students involved .....S U NA
- 10. Instructor-owned tools are not used by students unless a district policy has been established to cover their use and the school principal has been informed .....S U NA
- 11. The instructor makes sure that students wear protective equipment when needed .....S U NA
- 12. The instructor is responsible to see that personal protective equipment has been sterilized.....S U NA
- 13. Instruction is reinforced by continuous proper example through deeds and actions of the instructor, such as wearing protective equipment in all situations deemed necessary .....S U NA
- 14. The instructor is knowledgeable in the use of the various fire extinguishers in his/her facility .....S U NA
- 15. When classes are not in session, the instructor makes sure that all main power switches are in the "off" position. ....S U NA
- 16. The instructor makes sure that all machines are off and tagged when they are being cleaned or adjusted.....S U NA
- 17. A system for handling hot materials has been established .....S U NA
- 18. Routine preventative maintenance is practiced to assure against breakdown of equipment and safety .....S U NA

**C. INSTRUCTION**

- 1. The student's sense of responsibility is promoted, developed and periodically evaluated.....S U NA
- 2. Students receive instruction in the use of all tools and equipment they are expected to operate.....S U NA
- 3. Students are tested and permission is granted before machines are operated .....S U NA
- 4. Ground rules are established and enforced for safe, efficient shop operation .....S U NA
- 5. Students are instructed and alerted to possible hazardous operations and are monitored in these activities .....S U NA
- 6. Horseplay and practical jokes are dangerous and are not tolerated.....S U NA
- 7. Proper instruction and warning are given in the use and handling of toxic, caustics and volatile materials.....S U NA
- 8. In order to provide continuous safety instruction, questions on safety are included in all phases of the instructional program.....S U NA
- 9. Students are instructed in the proper methods of handling and lifting materials.....S U NA
- 10. Students are given the responsibility to see that they and other students are clear of machines when turning them on, never to leave a machine in a running position, or stop one with their hands or a piece of material.....S U NA
- 11. Students are instructed to stay clear of others operating machines and if necessary to approach an operator, to do so in such a manner as not to annoy or alarm him/her.....S U NA

- 12. All work undertaken is approved through some established method before proceeding.....S U NA
- 13. Materials being worked are secured when the operation being conducted so demands .....S U NA
- 14. A class personnel organization is used including a student safety engineer .....S U NA
- 15. Safety bulletin boards, posters and student reports are part of the total safety program.....S U NA
- 16. Students are instructed as to how to report hazards and fires.....S U NA

**D. PERSONNEL PROTECTION**

- 1. In compliance with State Law, eye protection devices will be worn and appropriate signs posted.....S U NA
- 2. Eye-wash baths and showers are available when using caustic materials .....S U NA
- 3. After use, eye-protective devices are cleaned and returned to properly designed storage rack .....S U NA
- 4. In all areas needing special body-protective clothing, such clothing is provided and used. (Example: aprons, shoes, gloves).....S U NA
- 5. In all areas needing respiration devices and noise suppression devices, such devices are provided and used...S U NA
- 6. Students are cautioned on the danger of loose clothing, jewelry, ties, long hair, etc. (Regulations in regard to their dangers are enforced.) .....S U NA
- 7. All injuries are reported to the instructor for immediate attention.....S U NA

## E. GENERAL FACILITY

1. One instructor has the overall responsibility for each major shop facility.....S U NA
2. Each major shop facility can be locked separately .....S U NA
3. Provision has been made for keeping inappropriate garments and other materials out of activity areas.....S U NA
4. Good housekeeping standards are observed.....S U NA
5. The student educational cleanup program is backed up daily with complete custodial services .....S U NA
6. Waste (shavings, sawdust, paint, and oil rags) is collected daily and disposed of by the custodian .....S U NA
7. Floors are maintained in a condition conducive to safe practices with nonskid surfaces provided around machines .....S U NA
8. Designated safety zone areas are provided around all dangerous areas of work .....S U NA
9. Aisles are clear of protruding materials .....S U NA
10. Room furniture and equipment are arranged for optimum safety .....S U NA
11. Non glare lighting is provided for all work areas according to State Board of Health regulation .....S U NA
12. Stairways within existing laboratories have safe tread and rise with unobstructed access and with approved railings.....S U NA
13. Railings and treads are color coded .....S U NA
14. Two widely separate marked exits are available from each major laboratory area.....S U NA
15. Facilities are light, pleasant, clean and conducive to good instruction....S U NA
16. Machine operation regulations and safety procedures are posted conspicuously near areas of operation .....S U NA
17. Parts of machines and equipment needing special attention or caution are painted brightly with correct color code .....S U NA
18. Machine and work stations are located in relationship to the amount or supervision required .....S U NA
19. Machine location has been determined by needed operator space requirements and process compatibility .....S U NA
20. Health hazards were considered in plant design to minimize injuries from excess heat, noise, fire and fume conditions .....S U NA

## F. STORAGE

1. Storage racks and shelves are designed and constructed to meet storage requirements.....S U NA
2. Materials are stored in a safe manner .....S U NA
3. Students and instructors are protected from protruding materials and sharp edges .....S U NA
4. All flammable and combustible liquids, toxic and caustics are stored securely in proper containers, identified by name and degree of hazard.....S U NA
5. Fire-approved storage cabinets are provided for, all flammable and combustible liquids .....S U NA
6. Provision has been made for a fire-approved bulk storage area. (Refer to local fire Marshall) .....S U NA

**G. ELECTRICAL**

- 1. All power wiring is installed and maintained in accordance with national electric code and:
  - (a) Switches are enclosed.....S U NA
  - (b) Circuits are identified .....S U NA
  - (c) All power cords are of proper length as determined by gauge and load .....S U NA
  - (d) Power supplies are provided with overload protection.....S U NA
  - (e) Lockouts are provided.....S U NA
- 2. All outlets and machines are grounded .....S U NA
- 3. All extension cords are three-wire with proper connections.....S U NA
- 4. All portable power tools are provided with three-prong plugs, except those which are double insulated .....S U NA
- 5. Readily accessible individual “off” and “on” controls are installed on all machines as well as in the room power-control panel .....S U NA
- 6. On machines where injury might result if motors were to restart after major power shutoff, provision is made to prevent such restarting. (Magnetic switches).....S U NA
- 7. A master-control “Panic Stop System” is available and conveniently located in each laboratory to shut off power .....S U NA
- 8. Each laboratory area has its own master-control switch and power panel located for easy access .....S U NA
- 9. Laboratory power panels have clearly identified individual power switches for each machine .....S U NA

- 10. Extension cords are not used for permanent installation.....S U NA
- 11. All hand-held portable power tools are equipped with “dead man” controls only .....S U NA
- 12. Regulator, stands and pilot lights are provided for all electrical soldering irons .....S U NA
- 13. All electrical apparatus in areas of concentrated vapors are vapor proof .....S U NA

**H. EQUIPMENT**

- 1. Safety instructions for the use of each machine is posted.....S U NA
  - 2. Machines are in safe operating condition at all times.....S U NA
  - 3. “Out-of-order” signs are secured to machines not in working order and power panel switch is in “off” position S U NA
  - 4. All machines are securely fastened in place according to good industrial practice.....S U NA
  - 5. Machines and equipment are provided with guards meeting industrial standards and guards are in proper position for safe machine operation .....S U NA
- Items requiring special consideration:
- (a) Squaring shears finger guard S U NA
  - (b) Foot treadle stops on squaring shears .....S U NA
  - (c) Jointer knife guards-left and right .....S U NA
  - (d) Abrasive wheel safety eye shields .....S U NA
  - (e) Abrasive wheel tool rests.....S U NA
  - (f) Abrasive wheel guards .....S U NA

## H. EQUIPMENT (CONTINUED)

- (g) Table saw guard including anti kick-back .....S U NA
- (h) Radial saw guard. ....S U NA
- (i) Radial saw forward stop and positive saw return .....S U NA
- (j) Radial Saw anti kickback device .....S U NA
- (k) Machine belt and pulley guards .....S U NA
- (l) Air compressor belt guards....S U NA
- (m) Compressed air is not used for cleaning purposes until it has been reduced to less than 30 psi .....S U NA
- (n) Compressed air is not used for cleaning purposes where possibility of eye injury exists.....S U NA
6. Equipment control switches are readily accessible to the operator while he/she is in a normal operating position ...S U NA
7. A positive “off” position switch is located on each machine .....S U NA
8. Proper tools and materials are available for machine cleaning.....S U NA
9. Hand-tool equipment is stored with sharp cutting edges protected....S U NA
10. Hand tools are properly maintained and kept sharp.....S U NA
11. Bench tops are in keeping with the activities planned (Example: electrical bench tops are made of non-conductive materials) .....S U NA
12. Properly designed and constructed auto stands and roll blocks are used. (A sufficient supply is available to meet the needs of the power mechanics areas.) .....S U NA
13. Engine stands are properly designed and constructed.....S U NA
14. All hoists and A-frames are properly constructed, designed for the job undertaken, labeled as to capacity and fitted with a safety block .....S U NA

## I. Fire

1. When available, only U.L. approved equipment will be used.....S U NA
2. A sufficient number of proper fire extinguishers (periodically, inspected, dated and recharged is readily accessible in all activity areas .....S U NA
3. A fire blanket is available for clothing fire. (Special caution should be taken with polyester clothing.).....S U NA
4. Area behind fire extinguisher is color coded.....S U NA
5. Extinguishers are hung at approved heights.....S U NA
6. Adequate exit doors and open aisles are available for prompt evacuation .....S U NA
7. Fire-approved storage and waste containers are readily accessible, used and emptied daily .....S U NA
8. Parts (solvent) wash tanks are fire fused .....S U NA
9. Finish and spray room doors swing out and cannot be locked from the inside .....S U NA
10. Filters in spray booths are replaced regularly .....S U NA

**J. WELDING**

- 1. Proper protective clothing is worn when needed.....S U NA
- 2. Goggles with the proper lenses are used when torch welding.....S U NA
- 3. An arc-welding helmet with correct lenses is used when electric welding (Min. Shade #12-MIG & TIG) (Min. Shade #10-STD. ARC) .....S U NA
- 4. Observers use acceptable protection .....S U NA
- 5. Welding is done only in areas free of combustible materials .....S U NA
- 6. Cylinders are secured upright, clear of passageways, and stored in ventilated areas .....S U NA
- 7. Extra cylinders are properly stored, meeting regulations, of the Department of Labor and Industry .....S U NA
- 8. Gas pipelines have been installed and are maintained according to code .....S U NA
- 9. Pipelines are checked each year by persons knowledgeable with code requirements.....S U NA
- 10. Piped welding-systems will have back pressure valves in both lines and conveniently located shutoff valves which will not be quick opening.....S U NA