

# VCE Product Design and Technology and Systems Engineering: 2021 School-assessed Task (SAT)

Occupational health and safety  
and outsourcing work







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## Plant and Equipment Risk Management Form

1. Hazard Management Details – General		
Plant/Equipment Item:	Make/Model No.:	Serial No.:
School/Workplace Location:	Region:	
Name of Person(s) Conducting Activity:		Date Conducted:
Photograph	Description of Use:	Summary of Key Risks:

### Safe Work Procedure Template

NOTE: DO NOT use this machine/equipment unless you have been trained in its safe use and operation

<b>Description of Work:</b>	
<insert photo if applicable>	Potential Hazards
<b>Personal Protective Equipment (PPE) Required</b> (Check the box for required PPE):	
 Gloves	 Face Masks
 Eye Protection	 Welding Mask
 Appropriate Footwear	 Hearing Protection
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<b>Safe Work Procedure Checklist:</b>	
1. PRE-Operation/Task:	
•	
2. Operation/Task:	
•	
3. POST-Operation/Task:	
•	
<b>Competent Person(s)</b> -The following persons are authorized to operate, supervise and test students on the equipment (process):	
<b>Name:</b>	<b>Title:</b>
	<b>Contact Details:</b>

## Safe Use Plant and Equipment Competency Test

Only teachers who have completed the course in Safe Use of Machinery for Technology are permitted to assess and supervise a student using a Safe Use plant item. This form is to be completed for each item of safe use plant being assessed.

Date:			
Workplace:			
Student:			
Name of person conducting competency test:			
Select plant & equipment item being assessed for competency (circle):			
<b>CUTTING</b>	<b>SHAPING</b>	<b>JOINING</b>	<b>FINISHING</b>
Cold Metal Drop Saw	Wood Lathe	Welding	Linisher Belt / Disc Sander
Power Hacksaw	Metalworking Lathe	Biscuit Jointer	Sanders Belt / Orbital
Jig Saw	Portable Plunge Router (unsecured) i.e. with either a template or guide fence or, a ball-bearing profile cutter	Dowling or Horizontal Drill	
Scroll Saw	Milling Machine	Drill Press (Pedestal or Bench)	
Small Mitre Saw (with simple drop saw action and work piece secured similar constraint)	Angle Grinder		
Metal Cutting "Horizontal" Band Saw			

### Section 1

<b>Woodwork / Metalwork</b>		Checked
<b>Prepare for work</b>		
Work instructions are used to determine job requirements, including design, quality, materials, equipment and quantities	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Workplace health and safety requirements, including ventilation requirements and personal protection needs, are observed through the work	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Material for machining is selected and inspected for quality	Yes <input type="checkbox"/> No <input type="checkbox"/>	
Machines, cutting tools and jigs are identified and checked for safe and effective operation	Yes <input type="checkbox"/> No <input type="checkbox"/>	

<b>Woodwork / Metalwork</b>	
Procedures are determined for minimising waste material	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Set up machines</b>	
Safety equipment, including emergency stops, gauges, guards and controls are checked	Yes <input type="checkbox"/> No <input type="checkbox"/>
Machine settings and adjustments are made in accordance with job requirements and machine and tool manufacturer's instructions	Yes <input type="checkbox"/> No <input type="checkbox"/>
Trial runs are conducted to check machine operation, accuracy and quality of finished work	Yes <input type="checkbox"/> No <input type="checkbox"/>
Necessary adjustments are made to machine settings	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Operate machines</b>	
Machine start-up procedure is carried out in accordance with manufacturer's instructions and/or safe work procedures	Yes <input type="checkbox"/> No <input type="checkbox"/>
Material is fed into machine in accordance with manufacturer's instructions, safe handling procedures and standard workplace operating procedures	Yes <input type="checkbox"/> No <input type="checkbox"/>
Machine is operated in accordance with its designed capacity and purpose, tooling requirements and to manufacturer's recommendations	Yes <input type="checkbox"/> No <input type="checkbox"/>
Items that do not meet quality requirements are repaired, recycled or discarded according to workplace procedures	Yes <input type="checkbox"/> No <input type="checkbox"/>
Problems with the required work and/or the operation of the machine are identified and reported to appropriate persons	Yes <input type="checkbox"/> No <input type="checkbox"/>
Never leave the machine running unattended	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Clean up work area and maintain equipment</b>	
Material that can be reused is collected and stored	Yes <input type="checkbox"/> No <input type="checkbox"/>
Switch off equipment before removing waste material from table / work area	Yes <input type="checkbox"/> No <input type="checkbox"/>
Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures	Yes <input type="checkbox"/> No <input type="checkbox"/>
Operator maintenance is completed in accordance with manufacturer's specifications and site procedures	Yes <input type="checkbox"/> No <input type="checkbox"/>
Unserviceable equipment is tagged and faults identified in accordance with workplace procedures	Yes <input type="checkbox"/> No <input type="checkbox"/>
Equipment and tools are maintained in accordance with workplace procedures	Yes <input type="checkbox"/> No <input type="checkbox"/>

### Section 2

<b>Assessor Comments / Notes</b>

### Section 3

<b>SIGN OFF</b>			
	<b>Name</b>	<b>Signature</b>	<b>Date</b>
Student			
Teacher/Assessor			

#### Further assistance

If further advice or assistance is required in completing this Checklist, please contact the OHS Advisory Service on 1300 074 715 or e-mail [safety@edumail.vic.gov.au](mailto:safety@edumail.vic.gov.au).

## Plant and Equipment Management Procedure

Last Updated: 12 July 2019

### Plant and Equipment Management Procedure

#### 1. Purpose

The purpose of this procedure is to ensure that risks associated with plant and equipment within the Department of Education and Training (the Department) are identified and managed.

#### 2. Scope

This procedure applies to all plant and equipment which are used in Department workplaces, including schools and central and regional offices.

#### 3. Procedure

##### 3.1 Identify Plant and Equipment

The **Workplace Manager** and/or **Management OHS Nominee** must identify all plant and equipment within the workplace in consultation with the **Health and Safety Representative (HSR)** and employees and record this information in the **Plant and Equipment Register**. Examples of plant and equipment include:

- ladders
- table saws
- powered hand tools
- lifts.

Hazard identification should take place:

- when new plant and equipment is introduced into the workplace
- for all existing plant and equipment
- before any changes are made to the system of work for plant and equipment
- before the plant and equipment is used in a manner other than what it was designed for
- when new information regarding the safety of the plant and equipment becomes available.

##### 3.2 Risk Assessment of Plant and Equipment

The **Workplace Manager** and/or **Management OHS Nominee** are to ensure that a risk assessment is completed as per the requirements of the **OHS Risk Management Procedure** and documented in the **Plant and Equipment Risk Management Form**. A risk assessment should be completed for each identified hazardous item of plant and equipment in consultation with:

- HSR
- Employees
- Relevant standards, codes of practice or legislation.

When determining the level of risk of a hazard the **Workplace Manager** and/or **Management OHS Nominee** should also consider:

- the systems of work related to the use of the item of plant or equipment
- the layout and physical conditions of the workplace
- the range of methods by which the work can be completed
- the type of hazards involved with the method of use and item of plant or equipment proposed to be used

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### Plant and Equipment Management Procedure

- The competence of persons to undertake the work.

#### 3.3 Purchase or acquisition of Plant

The **Workplace Manager** and/or **Management OHS Nominee** must ensure that prior to the purchase or acquisition of plant and equipment, that the **OHS Purchasing Checklist** is completed in accordance with the **OHS Purchasing Procedure**. This should occur in consultation with:

- HSR
- Employees

#### 3.4 Controlling Plant and Equipment Risks

##### 3.4.1 Control Measures

The **Workplace Manager** and/or **Management OHS Nominee** in consultation with the HSR and employees are to ensure suitable controls, as outlined in the **OHS Risk Management Procedure** are selected and implemented where plant and equipment risks are identified. This is to be documented on the **Plant and Equipment Risk Management Form**.

Examples of plant and equipment controls (from most to least effective) could include:

- determining whether the task can be completed by an alternative method e.g. purchasing timber pre-cut to the correct length
- installing and maintaining fixed guarding on machinery
- training employees in appropriate courses to obtain the required competencies
- developing Safe Work Procedures
- providing Personal Protective Equipment (PPE) such as ear and eye protection.

Where the controls include development of procedures for the safe operation and/or use of plant and equipment, a **Safe Work Procedure Template** should be completed and displayed adjacent to all items of static plant and accessible to operators of portable plant.

Plant and equipment that is identified as being unsafe must be isolated and tagged as per the **Isolation and Tag Out Procedure**.

##### 3.4.2 Training and Education

The **Workplace Manager** and/or **Management OHS Nominee** are to ensure teachers are competent to use plant and equipment in their facilities.

Teachers are required to have the necessary qualifications as outlined in the Victorian Institute of Teaching (VIT) Qualification for Teacher Registration Qualification Policy to enable them to teach Materials Technology in schools. This shall be supplemented by successful completion of relevant modules of the Safe Use of Machinery in Technology Teaching course. Further information on this course is available from the Department's OHS Advisory Service on 1300 074 715.

Training records are to be maintained by the **Workplace Manager** and/or **Management OHS Nominee** as outlined in the **OHS Induction and Training Procedure**.

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## Plant and Equipment Management Procedure

### 3.4.3 Maintenance

A record of inspections and maintenance must be kept for each item of plant and equipment. This includes scheduled maintenance, breakdown maintenance and replacement of parts (e.g. blades and belts) outside the scheduled maintenance program. Maintenance requirements should be determined in accordance with the supplier or manufacturer recommendations. Details recorded for plant and equipment should as a minimum include:

- plant and equipment name
- location
- serial or identification number
- description of work performed
- completion date of repairs/maintenance
- who the work was performed by.

If the workplace does not have an existing recording system, the *Plant and Equipment Risk Maintenance Form* may be used. When items of plant are being maintained or repaired they must be isolated and tagged as per the *Isolation and Tag Out Procedure*.

The **Workplace Manager** and/or **Management OHS Nominee** should ensure that contractors engaged to undertake maintenance are managed as per the *Contractor OHS Management Procedure*. The frequency of the maintenance program will depend on:

- legislative requirements
- manufacturer recommendations and requirements
- results of the *Plant and Equipment Risk Management Form*
- plant and equipment breakdown/failure rates.

### 3.5 Reviewing Controls

The **Workplace Manager** and/or **Management OHS Nominee** are responsible for reviewing the effectiveness of risk controls in consultation with the HSR and employees.

The **Workplace Manager** and/or **Management OHS Nominee** should review the completed *Plant and Equipment Risk Management Form*, *OHS Risk Register* and any other relevant sources of information (e.g. operating manual) to determine if the current controls are appropriate for individual items of plant and equipment. Any changes to the risk controls must be documented on the relevant *Plant and Equipment Risk Management Form* and the *OHS Risk Register*.

*Plant and Equipment Risk Management Forms* are to be reviewed and revised whenever there is evidence to indicate that the controls may no longer be valid, for example:

- when the system of work for plant and equipment changes
- if the plant and equipment is used in a manner other than what it was designed for
- when an incident occurs involving an item of plant
- when new information regarding the safety of the plant and equipment becomes available.

## Plant and Equipment Management Procedure

### 3.6 Licensing Requirements

WorkSafe Victoria requires the operator of certain items of plant and equipment to hold a relevant licence. Licencing requirements can be found in Schedule 3 of the Victorian *Occupational Health and Safety Regulations-High Risk Work Licence Classes*.

The **Workplace Manager** and/or **Management OHS Nominee** should ensure that all operators of plant and equipment required to be licenced are identified as per the *Induction and Training Procedure*.

A photocopy of the current licence must be collected by the **Workplace Manager** and/or **Management OHS Nominee** and retained in the training records. The licencing requirements for contractors are to be managed as per the *Contractor OHS Management Procedure*.

### 3.7 OHS Risk Register

The **Workplace Manager** and/or **Management OHS Nominee** are to ensure that the *OHS Risk Register* is kept up to date and is reviewed when plant and equipment hazards are identified, assessed, controlled and reviewed. Communication of any changes to the hazards associated with plant and equipment is to occur as per the *OHS Consultation and Communication Procedure*.

### 4. Defined terms

Terms defined within this Procedure can be located on the Department's [Defined Health, Safety Terms](#) website. Defined roles will appear in **bold**.

### 5. Related references:

*Occupational Health and Safety Act 2004*  
*Occupational Health and Safety Regulations 2017*  
*Safe Use of Machinery in Technology Teaching*  
*School Policy and Advisory Guide – Curriculum*

### 6. Related documentation:

*Contractor OHS Management Procedure*  
*Isolation and Tag Out Procedure*  
*OHS Consultation and Communication Procedure*  
*OHS Induction and Training Procedure*  
*OHS Purchasing Procedure*  
*OHS Purchasing Checklist*  
*OHS Risk Management Procedure*  
*OHS Risk Register*  
*Plant and Equipment Register*  
*Plant and Equipment Risk Management Form*  
*Plant and Equipment Maintenance Form*  
*Safe Work Procedure Template*  
*Testing and Tagging of Electrical Equipment Procedure*

## Plant and Equipment Management Procedure

### 7. Further assistance

Further information, advice or assistance on any matters related to plant and equipment management is available by contacting the OHS Advisory Service on ph. 1300 074 715 or email [safety@edumail.vic.gov.au](mailto:safety@edumail.vic.gov.au).

# Plant requiring completion of a Student Safe Use Test

Cutting	Shaping	Joining	Finishing
<ul style="list-style-type: none"><li>• Cold Metal Drop Saw</li><li>• Power Hacksaw</li><li>• Jig Saw</li><li>• Scroll saw</li><li>• Cold Metal Saw</li><li>• Small mitre saw (with simple drop saw action and work piece secured by clamps or similar constraint)</li><li>• Metal Cutting 'Horizontal' Band Saw</li></ul>	<ul style="list-style-type: none"><li>• Wood Lathe</li><li>• Metalworking Lathe</li><li>• Plunge Router – where used with either a template or guide fence or, a ball-bearing profile cutter</li><li>• Milling Machine</li><li>• Angle Grinder</li></ul>	<ul style="list-style-type: none"><li>• Welding</li><li>• Biscuit Jointer</li><li>• Dowling or Horizontal Drill</li><li>• Drill Press (Pedestal or Bench)</li></ul>	<ul style="list-style-type: none"><li>• Linisher (belt &amp; Disc sander)</li><li>• Sanders (Belt &amp; Orbital)</li></ul>



# Safety and wellbeing

It is the responsibility of the school to ensure that duty of care is exercised in relation to the health and safety of all students undertaking the study. This study may involve the handling of potentially hazardous substances and the use of potentially hazardous equipment. Teachers should refer to the Hazards substances information within the OHS Management System on the Department of Education and Training's advice about [Chemical Management](#) and [Use of machinery in technology teaching](#). For additional information about risk assessment, refer to the WorkSafe website [www.worksafe.vic.gov.au](http://www.worksafe.vic.gov.au) and the Safe Work Australia website <http://safeworkaustralia.gov.au>.

In Victoria, the relevant legislation for electrical safety is the *Electricity Safety Act 1998* and associated regulations.

Only persons who hold an appropriate current electrical licence are permitted to carry out electrical work on products or equipment that require voltage greater than 50 volts AC or 120 volts ripple-free DC.

This requirement means that students are not permitted to carry out any electrical work on electrical products or equipment that operate above 50 volts AC or 120 volts ripple-free DC.

Students are permitted to work with approved apparatus, appliances and testing equipment that operate at mains power, including appliances such as electric drills or electric soldering irons. However, they must not access or modify any component on such apparatus or appliance.

9. Any use of external support and/or equipment must be documented in the student's record of investigation, design, planning and production (for example, if a student uses equipment sourced from outside the school or uses prefabricated material, such as a powder coated steel frame or a complex circuit board, as part of their integrated controlled system). This is to ensure that any use of external support and/or equipment is appropriately limited and that the student does not receive undue assistance. All use of external support must be planned and documented in the student's record of investigation, design, planning and production and teachers must certify that such support does not constitute undue assistance.

# For further information

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