

Curriculum activity risk assessment

Mechanics

clever • skilled • creative

Activity scope

This document relates to student participation in Mechanics as a curriculum activity.

Mechanics refers to the monitoring, maintaining, fastening, locking, testing, adjusting and repairing of running internal combustion engines. Activities could include tear-down, tolerance checking, repairs, replacement of components, and sequential rebuilding and testing of internal combustion engines.

Mechanics also refers to mechanical devices and systems that allow for transfer of power or give a mechanical advantage.



Teachers/leaders:		
Activity description:		
Start date:	Finish date:	No of students (approx.):
Class groups:		Supervision ratio (approx.):

Risk level

The actual risk level will vary according to the specific circumstances of the activity and these **must** be considered when assessing the inherent risk level and planning the activity. As a starting point, ask the following questions:

- Which students will be involved?
- What will the students be doing?
- What will the students be using?
- Where will the students be?
- Who will be leading the activity?

The risk levels in mechanics are divided into two categories, depending on:

- the complexity of the operation
- the degree of risk associated with the operation of the mechanical device
- the severity of the consequences of any potential accident.

The degree of risk will vary according to factors such as:

- the teacher's experience and expertise
- students' abilities and competence
- the location
- the availability of a variety of types of engines and devices.

Inherent risk level		Action required / approval	
<input type="checkbox"/>	Low	Includes all mechanical devices that are not motorised (i.e. not powered by electricity or internal combustion engines); Examples include pulleys and levers, and gear systems such as pinions and racks, gearboxes, hand-powered winch systems etc. Activities with these machines include testing and adjusting, dismantling and reassembling, and designing, constructing, testing and evaluating.	<input checked="" type="checkbox"/> Manage through regular planning processes.
<input type="checkbox"/>	Medium	Includes dismantling and reassembling small internal combustion engines, monitoring, adjusting, running and checking, replacing parts, rebuilding sections of engines, and starting and running engines	<input checked="" type="checkbox"/> Record controls in your planning documents and/or complete this <i>Curriculum Activity Risk Assessment</i> . <input checked="" type="checkbox"/> Consider obtaining parental permission.

Listed below are the minimum recommendations for this type of activity. For any items ticked 'No', provide further information regarding the additional or alternate controls to be implemented for the safe conduct of the activity.

Minimum supervision
Adequate adult supervision is to be provided. In determining what is adequate, consider the number of students, their individual needs, and the nature of the activity. If an adult other than a registered teacher is engaged for instruction, a teacher should be present to take overall responsibility. Blue Card requirements must be adhered to.
<input type="checkbox"/> Registered teacher with minimum qualifications as outlined below OR <input type="checkbox"/> An adult with minimum qualifications as outlined below, in the presence of a registered teacher
Further information:

Minimum qualifications

The qualifications listed in this section are minimums for each type of situation. Leaders are encouraged to seek training to raise their qualification level above the minimum listed.

Current first aid qualifications including Cardio Pulmonary Resuscitation (CPR) or ready access to first aid facilities, including qualified personnel.

[Blue Card](#) requirements met

Low — Includes all mechanical devices that are not motorised (i.e. not powered by electricity or internal combustion engines); Examples include pulleys and levers, and gear systems such as pinions and racks, gearboxes, hand-powered winch systems etc. Activities with these machines include testing and adjusting, dismantling and reassembling, and designing, constructing, testing and evaluating.

For a registered teacher:

knowledge (a good working knowledge of the activity) in the use of tools and equipment used in mechanics

For a leader other than a registered teacher:

an adult with relevant qualifications and with a mechanical background, if a teacher as described is not available

Medium — Includes dismantling and reassembling small internal combustion engines, monitoring, adjusting, running and checking, replacing parts, rebuilding sections of engines, and starting and running engines

For a registered teacher:

experience (previous involvement) in the use of tools and equipment used in motor mechanics

For a leader other than a registered teacher:

an adult with relevant qualifications and with a motor mechanic background, if a teacher as described is not available

A teacher could demonstrate their competency through their:

- knowledge of the activity and the associated hazards and risks
- experience (i.e. previous involvement) in undertaking the activity
- demonstrated ability and/or expertise to undertake the activity
- possession of qualifications related to the activity.

Further information:

Minimum equipment/facilities <i>If 'No' is ticked, provide further information.</i>	Yes	No
First aid kit suitable for activity	<input type="checkbox"/>	<input type="checkbox"/>
Communication system: <ul style="list-style-type: none"> <input type="checkbox"/> phone-line at location <input type="checkbox"/> mobile phone <input type="checkbox"/> walkie talkies/UHF radio <input type="checkbox"/> student/adult messenger Other:		
Sun safety equipment (hat, sunscreen, shirt etc)	<input type="checkbox"/>	<input type="checkbox"/>
Drinking water (students should not share drinking containers)	<input type="checkbox"/>	<input type="checkbox"/>
The location should have adequate ventilation and lighting.	<input type="checkbox"/>	<input type="checkbox"/>
A fire extinguisher and/or fire blanket should be in close proximity to the fuel and oil usage area.	<input type="checkbox"/>	<input type="checkbox"/>
Further information:		

Hazards and suggested control measures

All persons engaging in this activity should:

- identify the hazards, including any additional hazards not mentioned here
- assess their significance
- manage the potential risks.

Listed below are indicative hazards/risks and suggested control measures. They are by no means exhaustive lists. After checking these, add details of any other identified hazards/risks and additional controls you intend to implement.

Hazards/risks	Control measures	Yes	No	Implementation plan / Additional controls
Dust, gas or fumes <ul style="list-style-type: none"> • Inhalation 	<ul style="list-style-type: none"> • Note that through-ventilation or a mechanical ventilation system is essential when starting internal combustion engines in confined areas, as toxic gases are given off. Fumes from solvents and fuel may cause discomfort if inhaled. • Note that where the testing of equipment that may generate excessive fume levels is to be done on a temporary basis, temporary guards may need to be established to isolate the generating equipment in a safe zone. 	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	

Hazards/risks	Control measures	Yes	No	Implementation plan / Additional controls
Hazardous substances <ul style="list-style-type: none"> Corrosive chemicals Flammable chemicals Carcinogenic chemicals Volatile chemicals Heavy metals 	<ul style="list-style-type: none"> Ensure hazardous substances guidelines are adhered to. Adopt immediate and effective cleaning procedures to minimise potential hazards associated with fuel or oil spillage. 	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Manual handling <ul style="list-style-type: none"> Lifting equipment 	<ul style="list-style-type: none"> Undertake a risk management process in order to prevent or minimise the risk of injuries caused by manual tasks. Instruct students in correct manual-handling techniques if a machine is to be moved. 	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Physical Contact <ul style="list-style-type: none"> Cuts, grazes and abrasions 	<ul style="list-style-type: none"> Note that protective clothing, including gloves and/or goggles, may be necessary when using some fuels or solvents to prevent their being absorbed or reacting with the skin. 	<input type="checkbox"/>	<input type="checkbox"/>	
Students <ul style="list-style-type: none"> Student numbers Special needs High risk behaviours Medical conditions 	<ul style="list-style-type: none"> Obtain parental permission, including relevant medical information. When students with medical conditions are involved, ensure that relevant medical/emergency plans and medications are available (insulin, Ventolin, EpiPen, etc.) Refer to Individual education plan/Educational adjustment plan/Behaviour management plan and other student documents. Where necessary, obtain advice from relevant advisory visiting teachers or specialist teachers. Ensure there is adequate adult supervision. 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
Tools, plant or equipment	<ul style="list-style-type: none"> Ensure that correct tools are used when compressing springs and similar components. 	<input type="checkbox"/>	<input type="checkbox"/>	

Submitted by:	Date:
List the names of those who were involved in the preparation of this risk assessment.	

Approval	
<input type="checkbox"/>	Approved as submitted:
<input type="checkbox"/>	Approved with the following condition(s):
<input type="checkbox"/>	Not approved for the following reasons(s):
By:	Designation:
Signed:	Date:
Once approved, activity details should be entered into the <i>School Curriculum Activity Register</i> by administrative staff.	Reference no.

Monitor and review <i>To be completed during and/or after the activity and/or at the completion of the series of activities.</i>	Yes	No
Are the control measures still effective?	<input type="checkbox"/>	<input type="checkbox"/>
Have there been any changes?	<input type="checkbox"/>	<input type="checkbox"/>
Are further actions required?	<input type="checkbox"/>	<input type="checkbox"/>
Details:		

Important links

- HLS-PR-003: First Aid
<http://education.qld.gov.au/strategic/epr/health/hlspr003/>
- Managing a Practical ITD Workspace
<http://education.qld.gov.au/strategic/epr/health/hlspr012/resources/pracitdworkspace.pdf>
- Infection Control Guideline
http://education.qld.gov.au/health/pdfs/healthsafety/infection_control_guideline.pdf
- HLS-PR-005: Health and Safety Incident Recording and Notification
<http://education.qld.gov.au/strategic/epr/health/hlspr005/>
- HRM-PR-010: Working with Children Check – Blue Cards
<http://education.qld.gov.au/strategic/epr/hr/hrmpr010/>

Further information

For further information on incorporating risk management strategies into curriculum activity planning refer to [HLS-PR-012 Managing Risks in Curriculum Activities](#) and the associated list of [Curriculum Activity Risk Assessment Guidelines](#). (See: <http://education.qld.gov.au/strategic/epr/health/hlspr012/index1.html>)

For further support with risk management training and advice, contact trained staff in schools such as Workplace Health and Safety Officers (WHSOs) and Workplace Health and Safety Representatives (WHSRs), and regional staff such as Senior Health and Safety Consultants.