

Curriculum activity risk assessment

Safe Operation of Laboratory Equipment

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Activity scope

This document relates to student participation in Safe Operation of Laboratory Equipment as a curriculum activity.

Laboratory equipment used for school activities might include:

- glassware used for heating and/or mixing substances
- instruments for measuring mass, volume, size, temperature or other physical and/or chemical parameters
- electrical equipment that might be involved in heating/cooling or used to produce motion via motors, belts, cogs and other mechanically mobile components
- special dedicated-purpose apparatus that might be relocatable or might be part of a permanent fixture or facility.

Laboratory equipment may be used within specialised science facilities such as school laboratories or agricultural sections, or in general classrooms, playgrounds or on school excursions. The use to which the equipment is put influences the nature and extent of the risks involved. Refer to the related risk assessments for details.

Only lasers of Class One continuous, Class Two continuous and Class Three A are to be used in schools. Laser pointers are to be Class One or Two only.

(See the [Australian code of practice for the safe use of lasers in schools, 1995](#)).



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?

Inherent risk level		Action required / approval
<input type="checkbox"/>	Low	Includes low-voltage electrical equipment, microscopes, telescopes, magnetic equipment, simple machines, data loggers and probes and static electricity equipment
<input type="checkbox"/>	Medium	Includes equipment operating under some pressure or vacuum, fragile equipment, equipment producing low levels of radiation, producing gasses or fine particulates, some high-voltage electrical equipment, Class One lasers, and equipment generating heat or cold
<input type="checkbox"/>	High	Includes high-voltage, high current (typically greater than 20 milliamps) electrical equipment, radiation-emitting sources, lasers (Class Two and Three), equipment generating very high or very low temperatures, equipment using very high or very low pressure

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

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	
<i>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.</i>	
<input type="checkbox"/>	Current first aid qualifications including Cardio Pulmonary Resuscitation (CPR) or ready access to first aid facilities, including qualified personnel.
<input type="checkbox"/>	Blue Card requirements met
For <i>Low Risk</i> activities, the leader should be:	
<input type="checkbox"/>	a registered teacher with knowledge of the activity and its potential hazards
OR	
<input type="checkbox"/>	an adult with knowledge of the activity and its potential hazards, if a teacher with knowledge of the activity is not available.
For <i>Medium Risk</i> activities, the leader should be:	
<input type="checkbox"/>	a registered teacher with experience (i.e. previous involvement) in the activity
OR	
<input type="checkbox"/>	an adult with experience (i.e. previous involvement) in the activity, if a teacher with the relevant experience is not available.
For <i>High Risk</i> activities, the leader should be:	
<input type="checkbox"/>	a registered teacher with competence (i.e. demonstrated ability) in the activity
OR	
<input type="checkbox"/>	an adult with competence (i.e. demonstrated ability) in the activity, where a teacher as described is not available.
A teacher could demonstrate their competency through their:	
<input type="checkbox"/>	knowledge of the activity and the associated hazards and risks
<input type="checkbox"/>	experience (i.e. previous involvement) in undertaking the activity
<input type="checkbox"/>	demonstrated ability and/or expertise to undertake the activity
<input type="checkbox"/>	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:	<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:		
Protective equipment appropriate for the particular activity, such as safety glasses and laboratory coats or aprons, must be worn by all persons involved in the activity.	<input type="checkbox"/>	<input type="checkbox"/>
Sun safety equipment (hat, sunscreen, shirt etc)	<input type="checkbox"/>	<input type="checkbox"/>

Minimum equipment/facilities <i>If 'No' is ticked, provide further information.</i>	Yes	No
Drinking water (students should not share drinking containers)	<input type="checkbox"/>	<input type="checkbox"/>
Access to a fume cupboard	<input type="checkbox"/>	<input type="checkbox"/>
Further information:		

Governing bodies/associations <i>If 'No' is ticked, provide further information.</i>	Yes	No
A reference manual has been established for this activity. See Aspects of Science Has this been considered during the planning and performance of this activity?	<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
Electricity <ul style="list-style-type: none"> • Burns • Electrocution • Fire 	<ul style="list-style-type: none"> • Ensure Electrical Safety Guidelines are adhered to. • Ensure that any electrical equipment not connected to a certified safety switch has a current test certification. All participants should be aware of the location of the electrical isolation switch. Electrical leads should not pass from bench to bench, suspended in the air. Where 	<input type="checkbox"/>	<input type="checkbox"/>	

Hazards/risks	Control measures	Yes	No	Implementation plan / Additional controls
	<ul style="list-style-type: none"> Ensure there is adequate adult supervision. 	<input type="checkbox"/>	<input type="checkbox"/>	
Tools, plant or equipment <ul style="list-style-type: none"> Moving parts or objects Breakage (e.g. glass) 	<ul style="list-style-type: none"> Note that equipment which needs or produces heat should be insulated or placed so that accidental access to it is restricted. Ensure that any electrical equipment not connected to a certified safety switch has a current test certification. All participants should be aware of the location of the electrical isolation switch. Electrical leads should not pass from bench to bench. Ensure that operators of equipment (whether students or staff) are given sufficient instruction in the safe operation of the equipment. 	<input type="checkbox"/>	<input type="checkbox"/>	

Additional control measures	
<i>These would relate to the specific student needs, location and conditions in which you are conducting your activity.</i>	
Hazards/Risks	Control Measures

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 reason(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 for Schools and Non-school Locations
<http://education.qld.gov.au/strategic/epr/health/hlspr003/>
- HLS-PR-005: Injury, Illness and Dangerous Event Recording and Reporting
<http://education.qld.gov.au/strategic/epr/health/hlspr005/>
- HLS-PR-013: Developing a Sun Safety Strategy
<http://education.qld.gov.au/strategic/epr/health/hlspr013/>
- HRM-PR-010: Working with Children Check – Blue Cards
<http://education.qld.gov.au/strategic/epr/hr/hrmpr010/>
- HLS-PR-006: Managing Occupational Risks with Chemicals
<http://education.qld.gov.au/strategic/epr/health/hlspr006/hs16.pdf>
- HLS-PR-006: Managing Occupational Risks with Chemicals
<http://education.qld.gov.au/strategic/epr/health/hlspr006/hs16.pdf>
- HLS-PR-005: Health and Safety Incident Recording and Notification
<http://education.qld.gov.au/strategic/epr/health/hlspr005/>
- Handling of Live Animals
<http://education.qld.gov.au/strategic/epr/health/hlspr012/resources/liveanimals.pdf>
- Biological Activities
<http://education.qld.gov.au/strategic/epr/health/hlspr012/resources/biolactivities.pdf>
- Chemical Hazards
<http://education.qld.gov.au/strategic/epr/health/hlspr012/resources/chemhazards.pdf>
- Managing and Storing of Hazardous Materials in Science
<http://education.qld.gov.au/strategic/epr/health/hlspr012/resources/hazsciencematerials.pdf>
- Maintenance and Operation of a Safe Laboratory
<http://education.qld.gov.au/strategic/epr/health/hlspr012/resources/safelab.pdf>
- Maintenance and Operation of a Safe Work Area Outside the Laboratory
<http://education.qld.gov.au/strategic/epr/health/hlspr012/resources/safework.pdf>
- [Safe Work Practices Conducting Science Experiment Activities](#)
- Aspects of Science Management (Reference Manual for Schools)
<http://education.qld.gov.au/health/pdfs/healthsafety/aspects-science-mgmt.pdf>

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.

Uncontrolled copy. Refer to *HLS-PR-012: Curriculum Activity Risk Management* at <http://education.qld.gov.au/strategic/epr/health/hlspr012/> for master.