

# Curriculum activity risk assessment

## Electrics and Electronics

clever • skilled • creative

### Activity scope

This document relates to student participation in Electrics and Electronics as a curriculum activity.

'Electrics and electronics' refers to electrical circuits, components and devices to make simple projects, experiments in direct and alternating current, parallel and series circuits and to the introduction of a variety of electronic components, such as:

- diodes
- transistors
- capacitors
- resistors
- integrated circuit devices.

This activity is confined to low-voltage use (i.e. 32 volts or less)



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?

Indicate the assessed risk level and undertake the actions required for that level of risk.

Inherent risk level		Action required / approval
<input type="checkbox"/>	<b>Medium</b>	Some chance of an incident and injury requiring first aid <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.
<input type="checkbox"/>	<b>High</b>	Likely chance of a serious incident and injury requiring medical treatment <input checked="" type="checkbox"/> A <i>Curriculum Activity Risk Assessment</i> must be completed. <input checked="" type="checkbox"/> Principal or delegated Deputy Principal or Head of Program (i.e. HOD, HOSES, HOC) to review and approve risk assessment. <input checked="" type="checkbox"/> Once approved, activity details are to be entered into the <i>School Curriculum Activity Register</i> . <input checked="" type="checkbox"/> Obtaining parental permission is recommended.

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. <a href="#">Blue Card</a> requirements <b>must</b> be adhered to.
<input type="checkbox"/> Registered teacher with minimum qualifications as outlined below <b>OR</b> <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

## Medium - Some chance of an incident and injury requiring first aid

### For a registered teacher:

- a registered teacher with experience (previous involvement) in the use of electrical components and equipment

### For a leader other than a registered teacher:

- an adult with experience (previous practical involvement) in the use of electrical components or an adult from the electrical and electronics trades, if a teacher with experience 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.

## High - Likely chance of a serious incident and injury requiring medical treatment

### For a registered teacher with qualifications in Industrial Technology Design (ITD):

- experience (previous involvement) in the use of electrical components and equipment

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.

### For a leader other than a registered teacher:

- an adult with experience (previous practical involvement) in the use of electrical components or an adult from the electrical and electronics trades, if a teacher with experience is not available.

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"/>
Maintenance and service of equipment to manufacturers' specifications; access to the Equipment maintenance registers	<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:		
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 working area should have sufficient lighting to enable comfortable working conditions.	<input type="checkbox"/>	<input type="checkbox"/>
Further information:		

Governing bodies/associations <i>If 'No' is ticked, provide further information.</i>
<a href="#">Industrial Technology and Design Teachers' Association</a>
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
<b>Breakages</b> <ul style="list-style-type: none"> <li>• Glass</li> <li>• Crockery</li> </ul>	<ul style="list-style-type: none"> <li>• Inspect equipment before use for cracks and other damage.</li> <li>• Do not heat or cool materials quickly.</li> <li>• Ensure students wear appropriate footwear.</li> <li>• Ensure appropriate clean up equipment (broom, dustpan and brush) is available.</li> <li>• Ensure that students handle materials and equipment carefully.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Confined spaces</b> <ul style="list-style-type: none"> <li>• Asphyxiation</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure that adequate ventilation is available. The use of fans is recommended.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Dust, gas or fumes</b> <ul style="list-style-type: none"> <li>• Smoke</li> <li>• Sawdust</li> <li>• Inhalation</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure appropriate personal protective equipment (e.g. facemask, breathing apparatus) is worn.</li> <li>• Ensure there is adequate ventilation.</li> <li>• Ensure extraction bags are fitted to equipment.</li> <li>• Ensure that a fume cupboard is used.</li> <li>• Note that fumes given off when soldering may be harmful if inhaled excessively.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Electricity</b> <ul style="list-style-type: none"> <li>• Burns</li> <li>• Electrocutation</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure <a href="#">Electrical Safety Guidelines</a> are adhered to.</li> <li>• Ensure that hot equipment does not make contact with leads.</li> <li>• Note that precautions to be observed in the general use of electricity include:</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	

Hazards/risks	Control measures	Yes	No	Implementation plan / Additional controls
	<ul style="list-style-type: none"> <li>○ never use an appliance with a cracked plug</li> <li>○ turn off switch before removing the plug</li> <li>○ do not touch live elements with any objects</li> <li>○ keep liquids away from electrical equipment and never use electrical equipment when hands are wet</li> <li>○ restrict all experiments and projects to a safe voltage level (non dangerous levels of voltage and amperage).</li> </ul>			
<b>Environmental conditions</b> <b>Workshop environment</b>	<ul style="list-style-type: none"> <li>• Complete the Curriculum Activity Risk Assessment – <a href="#">Managing a practical workspace</a>.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Hazardous substances</b> <ul style="list-style-type: none"> <li>• Corrosive chemicals</li> <li>• Flammable chemicals</li> <li>• Carcinogenic chemicals</li> <li>• Volatile chemicals</li> <li>• Heavy metals</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure hazardous substances guidelines are adhered to.</li> <li>• Ensure that, where students are engaged in the production of printed circuit boards, adequate protection is provided against chemical spillage, splatter or inhalation.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Heat sources</b>	<ul style="list-style-type: none"> <li>• Ensure that a safe storage receptacle is provided for hot soldering irons. Sufficient working space should be allowed for hot components.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Manual handling</b> <ul style="list-style-type: none"> <li>• Lifting equipment and materials</li> </ul>	<ul style="list-style-type: none"> <li>• Undertake a risk management process in order to prevent or minimise the risk of injuries caused by manual tasks.</li> <li>• Instruct students in correct manual handling techniques.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Sharp implements or objects</b> <ul style="list-style-type: none"> <li>• Knives</li> </ul>	<ul style="list-style-type: none"> <li>• Provide training and instruction in safe handling of equipment.</li> <li>• Ensure equipment is stored safely when not in use.</li> <li>• Increase supervision when necessary.</li> <li>• Follow safety guidelines.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	

Hazards/risks	Control measures	Yes	No	Implementation plan / Additional controls
	<ul style="list-style-type: none"> <li>Ensure that tools are used correctly to prevent personal injury from sharp knives, materials and wire.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Students</b> <ul style="list-style-type: none"> <li>Student numbers</li> <li>Special needs</li> <li>High risk behaviours</li> <li>Medical conditions</li> </ul>	<ul style="list-style-type: none"> <li>Obtain parental permission, including relevant medical information.</li> <li>When students with medical conditions are involved, ensure that relevant medical/emergency plans and medications are readily available (insulin, Ventolin, EpiPen, etc.)</li> <li>Refer to Individual education plan/Educational adjustment plan/Behaviour management plan and other student documents.</li> <li>Where necessary, obtain advice from relevant advisory visiting teachers or specialist teachers.</li> <li>Ensure there is adequate adult supervision.</li> </ul>	<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

<b>Submitted by:</b>	<b>Date:</b>
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.

<b>Monitor and review</b> <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-004: Infection Control and Management of Prescribed Contagious Conditions  
<http://education.qld.gov.au/strategic/epr/health/hlspr004/>
- HLS-PR-006: Managing Occupational Risks with Chemicals  
<http://education.qld.gov.au/strategic/epr/health/hlspr006/hs16.pdf>
- HRM-PR-010: Working with Children Check – Blue Cards  
<http://education.qld.gov.au/strategic/epr/hr/hrmpr010/>
- Infection Control Guideline:  
[http://education.qld.gov.au/health/pdfs/healthsafety/infection\\_control\\_guideline.pdf](http://education.qld.gov.au/health/pdfs/healthsafety/infection_control_guideline.pdf)
- Maintaining a Safe Design Technology Workspace  
<http://education.qld.gov.au/strategic/epr/health/hlspr012/pracitdworkspace.pdf>
- HLS-PR-005: Injury, Illness and Dangerous Event Recording and Reporting  
<http://education.qld.gov.au/strategic/epr/health/hlspr005/>
- [HLS-PR-003: First Aid for Schools and Non-school Locations](#)
- Industrial Technology and Design Teachers' Association  
<http://www.intad.asn.au/membensite.asp>

### 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.