Holloways Beach Environmental Education Centre

Curriculum Activity Risk Assessment

Activity Details

	CARA Creation Date: 20-Oct-2025		
Activity:	**Biological activities**		
Activity Scope:	Guideline review date: 24 September 2025 This guideline demonstrates the minimum safety standard for student participation in biological activities (e.g. studying animal tissues, live specimens, invertebrate organisms, microorganisms, plant material, fungi or tasting food samples grown in the school garden) to support curriculum delivery within, and external to, a science laboratory. This activity may also involve the use of a range of laboratory equipment, e.g. glassware, heating and digital equipment and chemicals. The Department of Education is committed to ensuring that curriculum activities are planned for and managed in accordance with the Work Health and Safety Act 2011 (Qld), to ensure, as far as is reasonably practicable, the safety of students, staff and others. Depending on the scope of this activity, other risk assessments may be required when planning. Curriculum activities encompassing more than one CARA guideline (e.g. marine organism activities when conducting fieldwork to investigate microorganisms) must comply with the requirements of all CARA guidelines appropriate to the activity. For curriculum activities involving the introduction of agents or conditions that may contaminate food, consult the food experimentation activity guideline. For curriculum activities involving observing and handling animals and animal remains, consult the animal observation and handling activity guideline. For curriculum activities involving observing and handling marine animals and organisms, consult the marine organism activities activity guideline. For activities conducted at a non-Department of Education venue, and/or when engaging external expertise, request written risk assessment advice and attach it to this CARA record. For activities conducted off-site, schools must comply with the school excursions procedure.		
Guidelines:	https://education.qld.gov.au/curriculum/stages-of-schooling/CARA/activity-guidelines/biological-activities		
Activity Description:	Conduct mangrove transects and collect biotic and abiotic data.		
Inherent Risk Level:	Low		
Inherent Risk Level Description:	Activities involving low risk equipment and non-hazardous biological material (e.g. pre-prepared microscope slides, pond water, silkworms, foodstuffs).		
Start Date:	Tuesday, 28 January, 2025	End Date:	Friday, 12 December, 2025
On School Grounds:	No	Is parental permission required for this activity?	Yes

Activity Requirements

• A registered teacher must be appointed to maintain overall responsibility for the activity. • Teachers, in collaboration with other adult supervisors of the planned activity, determine additional risks, hazards and control measures relevant to the activity and the specific school/group circumstances in order to lift the safety standard above the minimum identified in the CARA guideline. Consult review comments from previous CARA records to improve safety standards based on the advice from the previous supervisors of the activity at the school. • Prior consultation and collaboration with local expertise (e.g. lab manager) is required for local advice, emergency support mechanisms and additional supervision requirements to ensure participant and public safety. • The following activities are **prohibited**: ◦ taking human blood samples or using human blood products ◦ collecting samples from areas likely to pose risk of contamination by human pathogens including, but not limited to, human or animal body fluids, waste on toilets, carcasses, diseased tissue (plant or animal), hand basins, door handles, phones or computer keyboards ◦ swabbing raw poultry or surfaces used to prepare raw poultry ◦ sub-culturing swabs taken from food preparation surfaces ◦ incubating body fluids or other tissues in broths, plates or cultures ◦ incubating microbial cultures at temperatures higher than 30ºC. • Schools **may** sample human saliva, urine, cheek cell and/or DNA, however, students must only collect/handle their own samples. • All biological material is to be considered contaminated and potentially hazardous. • Schools must prevent and manage infection control in accordance with the infection control procedure and/or relevant Australian Standards (e.g. AS 2243.3—Safety in laboratories: Microbiological safety and containment). Utilise the infection control guideline for practical implementation advice. • Unfamiliar activities (e.g. from online sources) must be trialled without students to identify foreseeable hazards and plan safety processes. Do not proceed if risks of the activity outweigh educational outcomes. • Attach any additional information used to support safety in the activity to the CARA record (e.g. resources from Australian Science Teachers Association, published experiments or online risk assessment tools).	☑
Students • Schools must consider age, maturity and skill level of students when planning curriculum activities. Adjustments are required for students with disability to support access and participation in the curriculum. Consult with the parents/carers of students with disability, or when appropriate the student, to ensure risks related to their child's participation in the activity are identified and managed. • Schools must consult current student medical information and/or health plans in accordance with the managing students' health support needs at school procedure. Record information about any student condition (e.g. physical or medical, such as epilepsy) that may inhibit safe engagement in the activity and include specific support measures within emergency procedures. • For activities with students with a medical condition or disability that may impact on safety during the activity, consultation with parents is required prior to allocating supervision to determine the impact of students' medical condition or disability on safety during the activity. • For participants with known allergies, schools must comply with the supporting students with asthma and/or at risk of anaphylaxis at school procedure and the school's anaphylaxis risk management plan, including an adult supervisor of the activity with anaphylaxis training.	☑

Emergency and first-aid
 	
• Emergency plans and injury management procedures must be established for foreseeable incidents (e.g. raising alarm, , provision of CPR and first aid) and incorporate the advice from local authorities (e.g. location of AED).
• Adult supervisors must have:
  ◦ emergency contact details of all participants
  ◦ a medical alert list and a process for administering student medication
  ◦ communication equipment suitable to conditions (e.g. mobile phone) and a process for obtaining external assistance and/or receiving emergency advice.
• Safety procedures must be determined for the location (e.g. using equipment, managing broken glass), incorporate advice from the facility, if relevant. and are to be informed by details provided on manufacturer's instructions, product labels, vendor SDS, SOP and published experiments as relevant.
• Access is required to first aid equipment and consumables suitable for foreseeable incidents.
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Induction and instruction • Induction is required for all adult supervisors on emergency procedures (e.g. location of first aid support and equipment, location and use of eye wash) and safety procedures (e.g. identifying ingestion hazards, disposal of wastes/sharps). If the activity is conducted at an off-site facility, induction is to be informed by advice provided in consultation with expertise at the venue. • Instruction is required for students and adult supervisors on correct techniques (e.g. managing spills, correct set-up and operation of equipment). Teacher demonstrations are recommended to exemplify safe and hygienic practices and techniques. Rule-reminders are to be provided throughout the activity. • When conducting fieldwork, participants must receive prior instruction on potential hazards (e.g. thorned flora, steep slopes), basic first aid procedures for biological hazards (e.g. ticks, leeches), appropriate behaviours to help keep themselves safe during the activity (e.g. observe wildlife from a safe distance, keep to the path) and the process if lost or separated from the group.	☑
Consent Parent consent is required for all activities conducted off-site and all extreme risk level activities conducted onsite. It is strongly recommended that parent consent is obtained for high risk level activities conducted on-site.	☑

Risk Management Details

Supervision	
Principals, in consultation with the qualified adults, make final supervision decisions* for the activity that considers the local context.	
Appropriate adult supervision must be provided to manage the activity safely i.e. prevent an incident from occurring and manage an incident if one were to occur, including managing emergency situations. The principal must give active consideration to the minimum standards set in the CARA guideline for the activity, the CARA planner and the risk assessment when determining the appropriate level of supervision. *See Number of adult supervisors (below).* Participants must adhere to all rules and advice communicated by the facility operator/owner and any safety signage at the facility/location. Before the • activity, all adult supervisors: • must be familiar with the contents of the CARA record, including the Emergency and Supervision Plans. During the activity, all adult supervisors: • must provide active and direct supervision – be constantly vigilant, attentive and rescue ready • must comply with control measures from the CARA record and adapt as hazards arise • must not rely on students to recover a person in difficulty at any time • must suspend the activity if the conditions become unfavourable (e.g. extreme temperatures). The activity must be suspended if the conditions become unfavourable (e.g. uncontrollable hazards arising) Do not allow experiment products from the laboratory, e.g. reactant products, food products to be removed by students or taken home. **Number of adult supervisors** Principals, in consultation with the qualified adults of the activity, determine the final number of supervisors to fulfil instructional, emergency and supervision roles for the local context that consider, the nature of the activity, students' ages, abilities and specialised learning, access and/or health needs. In some instances, the final supervision ratio may be 1:1. If the minimum safety standard cannot be met, modify the activity (or elements of it) and use the hierarchy of controls to implement alternative control measures to meet or exceed the minimum safety standard (e.g. reduce the number of students participating at any one time).	☑
*See FAQ's for further support.	

Supervisor Qualifications	
Qualifications support the minimum safety standard for this activity. Principals make final decisions* in determining supervisor capability (competence, relevance and currency) and whether the activity leader meets an appropriate teaching standard. *See FAQ's for further support.	
All adult supervisors must comply with the working with children authority—Blue Cards procedure.	☑

Qualified adults for the activity **Recovery/emergency – CPR, First aid, Rescue**	
An adult with current emergency qualifications is required to be quickly accessible to the activity area. Emergency qualifications include: • HLTAID009 Provide cardiopulmonary resuscitation (CPR) • HLTAID011 Provide first aid	☑
At least one adult supervisor is:	
A registered teacher with knowledge of the activity and its potential hazards; or	☑
An adult supervisor working under the direct supervision of a registered teacher, with competence (knowledge and skills) in the activity.	☑
*See FAQ's for further support.	

Facilities and Equipment	
Consult chemicals in curriculum activities for support in assessing the risks of chemicals used with/by students in curriculum activities.	☑
If a CARA record is required in OneSchool, a summary of chemicals, plant, equipment and/or materials used in the activity must be provided by entering directly onto the CARA record in OneSchool or by attaching a summary. Sample templates are provided on chemicals in curriculum activities and plant, equipment and materials in curriculum activities.	☑
Location must be suitable for the activity being undertaken, including sufficient space, adequate lighting and ventilation to ensure safe participation and that safety rules and procedures can be followed. This may be in a specialised facility (e.g. laboratory) or other suitable location (e.g. school stockyard). Undertake a reconnaissance of new or infrequently used locations to ascertain suitability.	☑
All emergency equipment and processes (e.g. shut-off switches, eye wash unit) must be functional.	☑
Schools must source biological specimens (e.g. animals bred for scientific purposes) from commercial suppliers.	☑

Schools must maintain, store, transport and dispose of biological material appropriately (e.g. use SDS and clinical and related waste guideline). Such materials include, but are not limited to, live animals (e.g. silkworms, fish), biological material (e.g. specimens, manure, foodstuffs), wastes (e.g. paper towel, gloves) and used instruments (e.g. dissection boards, probes). Comply with animals in Queensland state schools requirements when handling live animals.	☑
Participants must wear personal protective equipment including non-porous enclosed footwear and apron/coat. Other personal protective equipment appropriate to the activity may include lab standard eye protection, gloves, appropriate face protection (e.g. mask to protect against airborne organisms in potting mix).	☑
First aid equipment and consumables, as required.	☑
Equipment and tools must be well-maintained, transported safely (e.g. using a protective cover) and stored appropriately. Conduct a visual inspection of equipment (including portable electrical equipment) to identify damage and remove from use.	☑
Clean up equipment as necessary e.g. dustpan, breakages bin, spill kit, disinfectants for microorganisms.	☑

Hazards and Control Measures

Environmental hazards	

Animal bites/stings
• If participating outside:
  ◦ Respond appropriately to approaching wildlife.
  ◦ Use insect repellent, as outlined in insect viruses and allergies.
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Environmental conditions • Assess weather conditions prior to undertaking the activity, inspecting the intended location in order to identify variable risks, hazards and potential dangers. • Follow the school's sun safety policy, including appropriate clothing, sun protection (e.g. sunscreen) and shade facilities when outside. • Follow the managing excessive heat in schools guidelines when participating in very hot or extreme heat conditions. • Ensure drink breaks occur regularly. Make water available for individual participants between drink breaks. • Monitor participants for cold related illness (e.g. hypothermia) in cold weather conditions.	☑

Biological material • Avoid contact with plant and animal material (e.g. saps, tissue matter). Include protection and handling processes with student safety procedures (e.g. rinsing equipment after use). • Use only the smallest quantity of biological material that will guarantee the viability of the experiment. • If swabs are taken from food preparation surfaces, keep petri dishes closed to reduce the risk of transmission of foodborne illness (e.g. Salmonella and E.coli). • Wash hands and other contaminated areas of the body with soap and water before leaving the activity site. • Sterilise biological material (e.g. microbial, genetic, enzymatic) and tools appropriately before disposal. Note: If unsure, seek advice from an institution proficient in disposal techniques, such as a university. • Clean tools following use to reduce the risk of contamination or accidental exposure. Sterilise equipment in contact with microbial and genetically modified organisms. • Dispose of hazardous biological materials using a double-bagging technique. • Label and date all specimens and samples for storage. Refrigerate as necessary. Dispose within appropriate timeframes.	☑
Facilities and equipment hazards	
Electricity • Electrical or extension leads must not pose a tripping hazard. Secure (e.g. tape down) and cover for protection. • Consider the placement of technology devices (e.g. tablets, laptops) and the peripherals (e.g. cords, mouse) during activities to avoid contamination by chemical/biological materials or contact with water.	☑
Faulty or dangerous equipment • Check equipment for damage before and during the activity. • Comply with control measures provided on the SOP or manufacturer's instructions. See the plant, equipment and materials in curriculum activities template for details of specific risk management practices. • Restrict student access to any equipment that requires thermal insulation (e.g. liquid nitrogen, incubator).	☑
Hazardous chemicals • Comply with control measures for preparation, use and disposal of chemicals provided on the vendor SDS in the school Chemwatch manifest and/or safety instructions on the product label. See the chemicals in curriculum activities template for details of specific risk management practices for each Chemwatch hazard colour rating. • All chemicals required for the decontamination processes must be arranged in advance and be readily available. • Manage spills immediately.	☑

Heat sources and radiation • Only appropriately-qualified adult supervisors may handle radiation sources and equipment (e.g. UV lamps). Establish and implement an exclusion zone away from equipment that may produce radiation. • Clearly sign/label equipment with hot surfaces and allow to cool before being returned to storage. • Manage heat sources and/or combustible substances safely. This includes, but is not limited to: keeping burners on low heat or orange flame while not directly in use, using small quantities of combustible substances only, keeping combustible or toxic substances away from naked flames and using appropriate water-bath techniques.	☑
Waste • Dispose of waste according to established safety procedure as soon as possible after the activity.	☑
Student considerations	
Manual handing • Use correct manual handling processes when lifting, lowering, pushing, pulling or carrying. Use aids for safe handling, lifting and carrying (e.g. guards, safety steps and mobile trolleys), as appropriate.	☑
Student issues • Where individual experimental investigations are undertaken, students must have complete and appropriate procedures in place that identify and manage hazards associated with their activity. • Remove accessories (e.g. necklaces, lanyards) before participating. • Ensure fingernails and hair and clothing (e.g. long hair, loose shirts) do not interfere with the activity. • Monitor and enforce the correct use of equipment and materials and safe movement around the area. • Account for all equipment, chemicals and resources (e.g. matches, unused samples) after the activity. • In addition, for off-site activities: • Implement procedures (e.g. buddy system, roll marking mechanisms) to account for all participants before, during and after the activity. • Ensure staff can easily recognise those students with health support needs and are familiar with their needs when participating off-site.	☑
Additional links Australian school science information support for teachers and technicians Office of the Gene Technology Regulator Creating Healthier Workplaces - Equipment and machinery resources	

Staff/Other Participants			
Family Name	**Given Name**	**Type**	**Other Participants Role**
Cunningham	Meredith	Staff Member	N/A
Francis	Timothy	Staff Member	N/A
Hamlyn	Sarah	Staff Member	N/A
Milne	Lance	Staff Member	N/A
Perham	Phil	Staff Member	N/A
Rohan	Cindy	Staff Member	N/A

Seed	Stephanie	Staff Member	N/A
Stephenson	Belinda	Staff Member	N/A
Woolcock	John	Staff Member	N/A

Planning Considerations

Which students will be involved?

- Consider the number of students, size of student groups and students' capabilities e.g. age, experience, competence, fitness, maturity.
- Consider any individual student needs e.g. personalised learning, support provisions (including behaviour support plans), health management (including health plans and prescribed medication requirements).

Where will the students be?

- Consider the location of the activity e.g. remote/easily accessible, public /private, school/classroom/workshop/other.
- Is the number of students appropriate for the available space?
- If outdoors – sunsafe strategies are implemented; weather and environmental conditions are assessed before and during activity (e.g. temperature, storms, water currents, tides); and strategies to reduce the likelihood of viruses, allergies and skin infections caused by insects (e.g. ticks, mosquitoes, spiders) and other animals are applied.
- The site is checked for hazards (e.g. poisonous plants, dangerous animals, uneven terrain, barbed wire,) and necessary controls implemented.
- Activities are appropriately situated in relation to buildings, pedestrians, members of the public, vehicles and other activities e.g. designated areas for activity, spectators and vehicles are established.

What will the students be doing?

- Consider the nature and duration of the activity i.e. need for drinking water, food, rest, appropriate clothing, warm-up and warm-down.
- Instruction in rules and pre-requisite skills is provided.
- Student skills are developed in a progressive and sequential manner.
- First aid and emergency medical treatment provisions are appropriate for the type of activity and location e.g. first aid kit, first aid trained personnel, Ventolin®, Epipen®, and students' personal prescribed medications as required in health plans are available.
- Emergency response strategies are in place e.g. communication plans (e.g. mobile phone, walkie talkie), safety induction, evacuation plans.
- Hair, clothing, footwear and jewellery are worn in a manner that is appropriate and safe for the activity.
- Personal items, e.g. drink bottles, towels and mouthguards, will not be shared between students.

What will the students be using?

- Instruction in safety procedures and safe handling of equipment is provided.
- Equipment is suitable for the activity, properly maintained, appropriately used and complies with the relevant safety standard.
- Relevant department procedures and guidelines are adhered to for the use of equipment and work processes.

Who will be leading the activity?

- A registered teacher has overall responsibility for the activity.
- Sufficient adult supervision is in place to manage the activity safely (including in emergency situations).
- The activity leader has the competence (knowledge and skills) to plan, induct, instruct and manage the activity safely for students and others.
- There are sufficient adults present with current First Aid qualifications (including CPR) or ready access to qualified first aid personnel.
- Blue Card requirements are adhered to for leaders/volunteers.

☑ I have incorporated the above factors when planning my risk management strategies for this activity.

☑ Additional activity-specific requirements for students with specialised learning needs are provided in the Other Details box below.
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Monitor and Review

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