## Remotely piloted aircraft (Drones)

**Notes:**

* Where a [CARA activity guideline](https://education.qld.gov.au/curriculum/school-curriculum/CARA/activity-guidelines) exists for the activity and the minimum requirements outlined cannot be met the activity must be modified or alternative controls implemented to ensure an equivalent level of safety for staff, students and others involved.
* Where a CARA activity guideline does not exist, and when considering any other risks relevant to an activity, the [Curriculum activity risk planner](http://ppr.det.qld.gov.au/education/management/Procedure%20Attachments/Managing%20Risks%20in%20School%20Curriculum%20Activities/Curriculum%20Activity%20Risk%20Planner.DOC) is to be used.

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| --- | --- |
| Activity Description: This guideline relates to the building and flying of remotely piloted aircraft1 (RPA) under 2kg, as a curriculum activity. Flying drones may involve other activities that have various risk levels (e.g. soldering). Refer to the relevant activity guideline (e.g. Industrial Technolology and Design activity guidelines) for mandatory requirements associated with these activities. Note: This guideline does not cover the flying of RPA of over 2kgs as part of a curriculum activity. A separate risk assessment should be undertaken for this activity. | |
| Teachers/Leaders: Mia Kitchener, Andrew Gill, Paul Kanters Eric Cech, Cathy Capearn | |
| Class groups: Varies | Number of students: Varies |
| Start date: 07/02/2023 | End date: 09/12/2023 |

*Use this risk assessment matrix as a guide to assess the* [*inherent risk level*](http://ppr.det.qld.gov.au/education/management/Pages/Managing-Risks-in-School-Curriculum-Activities.aspx)*. Refer to the* [*Curriculum activity risk planner*](http://ppr.det.qld.gov.au/education/management/Procedure%20Attachments/Managing%20Risks%20in%20School%20Curriculum%20Activities/Curriculum%20Activity%20Risk%20Planner.DOC) *for further details.*

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| --- | --- | --- | --- | --- | --- |
| **Likelihood** | **Consequence** | | | | |
| 1 - Insignificant | 2 - Minor | 3 - Moderate | 4 - Major | 5 - Critical |
| 5 - Almost Certain | Medium | Medium | High | Extreme | Extreme |
| 4 - Likely | Low | Medium | High | High | Extreme |
| 3 - Possible | Low | Medium | High | High | High |
| 2 - Unlikely | Low | Low | Medium | Medium | High |
| 1 - Rare | Low | Low | Low | Low | Medium |

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

| **Inherent risk level** | | | **Action required** |
| --- | --- | --- | --- |
|  | **Low** | Little chance of incident or injury | * Manage risk through regular planning processes. |
|  | **Medium** | Some chance of an incident and injury requiring first aid | * Document risks and controls in regular planning documents. * Manage risk through regular planning processes OR complete this *Curriculum Activity Risk Assessment*. |
|  | **High** | Likely chance of a significant incident and injury requiring medical treatment | * A *Curriculum Activity Risk Assessment* is required to be completed. * Principal or head of program (i.e. DP, HOD, HOSES) approval is required prior to conducting this activity. * Parent/carer consent is recommended. * Once approved, activity details are to be entered into the [School curriculum activity register](http://ppr.det.qld.gov.au/education/management/Procedure%20Attachments/Managing%20Risks%20in%20School%20Curriculum%20Activities/School-curriculum-activity-register.docx). |
|  | **Extreme** | High chance of a serious incident resulting in highly debilitating injury | * Consider conducting an alternative activity or modifications to the activity that could achieve comparable learning outcomes. * A *Curriculum Activity Risk Assessment* must be completed. * Principal approval is required prior to conducting this activity. * [Parent/carer](http://ppr.det.qld.gov.au/education/management/Procedure%20Attachments/School%20Excursions/Permission%20form%20template.DOC) consent must be obtained for student participation. * Once approved, activity details are to be entered into the  [School curriculum activity register](http://ppr.det.qld.gov.au/education/management/Procedure%20Attachments/Managing%20Risks%20in%20School%20Curriculum%20Activities/School-curriculum-activity-register.docx). |

**NOTE:** If the activity is to be held off-site, parent/carer consent is required irrespective of the inherent risk level. Refer to the [School Excursions](http://ppr.det.qld.gov.au/education/management/Pages/School-Excursions.aspx) procedure for the Excursion planner template.

Planning considerations

*Incorporate the following factors when planning risk management strategies for this activity.*

**Which students will be involved?**

* The number of participants, size of student groups and students' capabilities is considered e.g. age, experience, competence, fitness, maturity.
* Any individual participant needs e.g. personalised learning, support provisions is considered (including behaviour support plans), health management (including health plans and prescribed medication requirements) that may require additional supervision ratios or identification (including uniforms, hats and/or high visibility wrist bands).

**Where will the students be?**

* The location of the activity is considered e.g. remote/easily accessible, public /private, school/classroom/workshop or other.
* The number of participants is 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.
* The nature of the activity is considered to ascertain whether safety/exclusion zones or spectator zones are appropriate.
* 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?**

* The nature and duration of the activity is considered i.e. need for drinking water, food, rest, appropriate clothing, warm-up and warm-down.
* Instruction in rules, pre-requisite skills and safety procedures is provided to participants.
* 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 that include, but not limited to, 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, are not shared between participants.

**What will the students be using?**

* Instruction in safety procedures and safe handling of equipment is provided.
* All equipment (including protective equipment) is suitable for the activity, properly maintained, appropriately used and complies with the relevant safety standard.
* [Relevant department procedures and guidelines](https://education.qld.gov.au/curriculum/school-curriculum/CARA/activity-guidelines) are adhered to for the use of equipment, compliance of equipment and appropriate work processes.

**Who will be leading the activity?**

* A registered teacher will have 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 expertise (formal qualifications) or competence (knowledge and skills) to plan, induct, instruct and manage the activity safely for participants and others.
* There are sufficient supervisors present with current First Aid qualifications (including CPR) or ready access to qualified first aid personnel.
* A safety induction session (including designation of roles) is conducted with all supervisors prior to the commencement of the activity outlining risk management processes and emergency response strategies for the activity.
* Supervisors are active in their supervision, visible and are readily identifiable to participants.
* Blue Card requirements are adhered to for all supervising leaders/volunteers.

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

**Additional activity-specific requirements for participants with specialised learning needs are provided in the Other Details box below.**

| Other Details: |
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|  |

*Where a* [*CARA activity guideline*](https://education.qld.gov.au/curriculum/school-curriculum/CARA/activity-guidelines) *exists, ensure the minimum requirements are met.*

*Check if relevant Codes of Practice/Guidelines exist for each activity.*

*Consider any other information relevant to the safety of staff and students when conducting this activity and document below.*

***Where a CARA activity guideline exists:***

x I have met the minimum requirements specified in the attached CARA activity guideline/s;

***Where a CARA activity guideline does not exist:***

x I have identified the hazards and risks relevant to this activity and provided information below in the respective boxes about the risk management strategies that will be implemented to ensure the safety of students and others.

X The CARA activity guideline for Remotely Piloted Aircraft (Drones) was under review online at time of updated this risk assessment

Mandatory/Special Requirements

Where hazardous chemicals are used or generated by the activity (e.g. dust, gas, fumes), complete the [Chemical Hazards in the Curriculum template](https://education.qld.gov.au/curriculum/school-curriculum/CARA/activity-guidelines) and attach it to this risk assessment.

Note: Where the overall risk level conclusion for the use of a hazardous chemical is extreme, the activity must not proceed, as risks are not effectively controlled.

| Provide information about any mandatory or special requirements for each activity that is to occur: |
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| Mandatory requirements must be met for the activity to be conducted.  • Check with the local government authority for any permits required for the school to operate an RPA.  • Obtain parent/carer consent for high risk activities.  • When flying outdoors, comply with all regulations outlined by the Civil Aviation Safety Authority (CASA) at Commercial unmanned flight - remotely piloted aircraft under 2kg including all information, guidance and standard operating conditions found in the Advisory Circular AC 101-10. (Any person operating the RPA found in breach of CASA regulations may be issued with a large fine).  • Establish and implement procedures appropriate to the activity, location and conditions. This must include, but is not limited to emergencies (e.g. injury, first aid); communication (e.g. assistance); and supervision.  • Establish and implement safety procedures. This must include, but is not limited to: the Standard operating conditions; Emergency procedures and Personnel training found in the Advisory Circular AC 101-10 when flying outdoors; the location of exclusion and safety zones; instructions for launching, landing and collecting RPA in an exclusion zone; the role of the spotter and pilot; and the identification/control of injury hazards (e.g. from rotors, batteries, crashes).  • Induct students on procedures for emergency, safety procedures (e.g. remove propellors when testing motors) and correct technique (e.g. take-off and landing).  • Download and use Can I fly there? – Drone safety app (free) for standard operating conditions. Additional requirements for extreme risk activities  • Follow the Use of mobile devices procedure and Tips for protecting personal information guideline when using RPA fitted with mobile devices such as cameras or other image or sound capturing equipment. |

Supervision Requirements

| Provide information about supervision for each activity that is to occur: |
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| Provide sufficient adult supervision to manage the activity safely (including emergency situations). Consider age, size, ability and maturity of students in this decision. Principals make decisions about the supervision requirements. |

Qualification Requirements

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| Provide information about the leader/supervisor’s relevant qualifications and/or competence for each activity that is to occur: |
| • A registered teacher with competence (knowledge and skills) in constructing and controlling RPA, and having completed the online Remotely piloted aircraft (RPA) eLearning module available through CASA. OR  • An adult supervisor other than a registered teacher with competence (knowledge and skills) in constructing and controlling RPA, and having completed the online Remotely piloted aircraft (RPA) eLearning module and working under established safety procedures and the direct supervision of a registered teacher.  Note: while not mandatory for all circumstances, an RPA operator's certificate (ReOC) or a remote pilot licence (RePL) is recommended. CASA has further information on how to become a certified ooperator. |

Equipment/Facility Requirements

| Provide information about equipment/facilities for each activity that is to occur: |
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| • Location must be suitable to the activity being undertaken. That is, in a workshop when constructing/ repaing RPA, or at an appropriate outdoor site when flying.  • Designated exclusion zones for take-off/flying/landing and designated safety zones for pilots/spotters/observers. Inspect the flight path prior to starting the activity to identify potential obstructions (e.g. towers, overhead cables, trees, powerlines etc).  • A pre-flight check of battery, propellers and motor direction with the blades removed, signs of damage, calibrated compass, and connection to GPS signal to ensure RPA is safe and ready to fly. •  Personal protective equipment must include safety glasses with Australian Standard specification to protect pilots and observers from falling or flying parts.  • Constructions or repairs must comply with CASA regulations. Note that modifications or enhancements to commercially available RPA are not permitted.’   * First aid kit, UHF radio |

Hazards and Control Measures

Information on managing common hazards and risks in the school environment can be found at [Hazards and Risks](https://education.qld.gov.au/initiatives-and-strategies/health-and-wellbeing/workplaces/safety/hazards).

| Provide information about:   * Hazards: | * Planned control measures: |
| --- | --- |
| Before the activity: | |
| Considering environmental conditions | • Ensure the location, including the exclusion zone, is clear of obstacles and wildlife (e.g. snakes) that may pose hazards when flying outdoors. • Inform owners of neighbouring properties of flying times to reduce the likelihood of trespass and/or nuisance and/or noise complaints. • Ensure the school’s sun safety strategy is followed when flying outdoors. |
| Accessing facilities and using equipment | • Inspect the flight path or flying venue prior to starting the activity to identify potential obstructions (e.g. towers, overhead cables, trees, powerlines etc). • Erect signage on the perimeter of the flying zone to indicate that an RPA is flying in the area. • Ensure the exclusion zone for take-off and landing is level and stable and clearly defined. • Engage the GPS lock/failsafe mechanism (if fitted) prior to flying. |
| Managing student considerations | • Establish, induct participants on, then implement the correct operational procedures of all equipment including the safety indicators applicable to each RPA. Refer to the manufacturer user manual. |
| During the activity: | |
| Considering environmental conditions | Perform a hover test before flying. • Only fly during the day and in visual line-of-sight. Cease activities where conditions tend toward unfavourable (e.g. increased wind). • Do not fly over private property without permission. |
| Accessing facilities and using equipment | • Enforce safety guidelines during construction/repair of RPA (e.g. check for damage before using equipment, follow standard operating procedures for all equipment, ensure battery is fully charged). • Ensure all propeller guards are in place. • Do not allow the pilot to wear first person view (FPV) goggles to fly RPA (as per CASA regulations). They may only be worn by RPA crew to assist the pilot. • Keep the RPA battery maintained above 10 percent at all times to avoid crash injury. |
| Managing student considerations | • Use a transmitter with a connection to a supervisor’s training transmitter (if feasible) to allow the supervisor to take control at any time. • Ensure students do not pick up an RPA at any time that is armed and ready for flight. Always disarm the RPA before handling and disconnect the battery as soon as possible. • Enforce clothing/hair/jewellery rules to avoid entanglement. • Never allow students to catch-land an RPA. Have students use a controlled landing to descend the RPA slowly to the ground and land in the exclusion zone. |
| **After the activity:** | |
| Accessing facilities and using equipment | • Ensure RPA devices and lithium polymer (Li-Po) batteries are handled, charged and stored under supervision and in accordance with manufacturer instructions. |

| Submitted by: | |
| --- | --- |
| Name: Mia Kitchener | Position: Teacher |
| Email: mlkit0@eq.edu.au | |
| Signed: | Date: 28/01/2023 |

| Approval *(only required for high or extreme risk activities)* | | | |
| --- | --- | --- | --- |
| X | Approved as submitted | | |
| By: Andrew Gill | | Designation: Principal | |
| Signed: | | Date: 2/2/2023 | |
| Once approved, activity details should be entered into the *School curriculum activity register*. | | | Reference No. |

| Monitoring and Review *(to be completed during and/or after the activity.)* | **Yes** | **No** |
| --- | --- | --- |
| Have additional hazards been identified? |  |  |
| Were the control measures effective? |  |  |
| Are further or different actions required? |  |  |

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