



Department of  
**Education**

## **APPENDIX N: ROPES COURSES AND BOULDERING**

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## ROPES COURSES AND BOULDERING

**This document contains specific requirements related to ropes courses and bouldering activities and must be read in conjunction with *Appendix A: General Requirements in the Recreation and Outdoor Education Activities for Public Schools Procedures*.**

### 1. BACKGROUND

A ropes course is an activity which usually consists of a series of challenges completed along tensioned ropes with high and/or low elements.

Bouldering is a free solo climbing activity of short duration used to foster perseverance and resilience.

Separate advice provided in the *Abseiling and Climbing* activity specific document must also be consulted if these activities are included as a part of the ropes course program.

### DEFINITIONS

#### ASSISTANT SUPERVISOR

Assists the Qualified Supervisor and or Department teacher-in-charge. May or may not have relevant qualification or experience.

#### BELAY

Controlling a safety rope attached to people or equipment as a back-up in the case of primary system failure or climber fall. Belaying may be done from above or below, depending on the nature of the activity and/or the environment.

#### TOP BELAY

A belay system established above the active participant.

#### BOTTOM BELAY

A belay system established below the active participant.

#### AUTO BELAY

A device that acts independently from human involvement taking up slack as the participant ascends a surface. When the device is placed under tension (e.g. in the event of a fall) the device catches and then slowly lowers the participant to the ground.

#### BOULDERING

A form of rock climbing performed at low heights on small rock formations or artificial surfaces without the use of harnesses or ropes.

#### LOW ROPES COURSE

A tension roped course usually constructed less than one metre above the ground in trees or in artificial settings.

**HIGH ROPES COURSE**

Usually constructed at heights in trees or in artificial settings, often requiring a belay for safety.

**HARNESS HANG SYNDROME (SUSPENSION TRAUMA)**

Can occur when a participant is suspended within a harness for a prolonged period of time causing blood to pool. This has the potential to lead to shock, unconsciousness and/or death.

**SLACKLINING**

The act of walking or balancing along a suspended length of flat webbing tensioned between two anchor points.

**TEACHER-IN-CHARGE**

The member of the teaching staff who is authorised by the Department of Education to manage the school activity

**2. ENVIRONMENT**

The suitability of the site is established after considering the students' capacity, skills and experience, the planned ropes course/bouldering activity and the supervision required.

The design and proportion of the ropes course and equipment needs to be suitable for participants.

Challenge ropes courses must not be used in excessive winds, wet conditions, during lightning and electrical storms or in extremely hot or wet conditions.

The weather forecast must be checked before, and also regularly throughout the activity, as it might be necessary to cancel, modify or relocate the activity at any time.

**Guidance**

*The qualified supervisor should have first-hand knowledge of the venue. Other sources of information regarding the venue may include:*

- *the venue manager;*
- *the local ranger or land manager;*
- *other schools that have conducted similar activities at that location;*
- *external providers; and/or*
- *Outdoors WA.*

**3. CAPACITY OF STUDENTS**

High ropes courses that include abseiling and climbing may be offered for students from Year 5 as part of a logical and sequential, documented program of instruction (refer also to *Abseiling and Climbing*).

Prior to commencing a ropes course, bouldering, or slacklining activity, the qualified supervisor must confirm that each student has the capacity and maturity to participate safely and can manage safety systems.

### *Primary school students*

Ropes courses that include abseiling and climbing activities are generally not considered suitable for primary students in Pre Primary to Year 4 because:

- younger students generally do not possess the necessary degree of responsibility and maturity;
- their stages of physical growth and development are usually not suitable; and
- the equipment used is often inappropriate for younger, lighter and smaller individuals.

Students in primary school generally do not have the ability or maturity to belay others.

Students may participate in the controlled environments if:

- the selected ropes course or bouldering activity is deemed educationally appropriate;
- students have been determined to have the capacity to safely participate by the qualified supervisor; and
- a supervising adult is controlling any belaying systems.

Alternative, modified or adjusted activities should be provided for students who have limited capacity to participate.

Students with an impairment may participate in bouldering and ropes courses provided adequate safety and control measures are implemented. Specific consideration is given to:

- the type and level of impairment;
- location and access; and
- curriculum adjustments so that the student can access the curriculum activity on the same basis as their peers.

Students who have a medical condition that may impact on their safety must be cleared by a medical practitioner before they can participate

Alternative activities are to be provided for students who do not have the capacity to participate.

## 4. STUDENT HEALTH CARE

Refer to *Appendix A: General Requirements in the Recreation and Outdoor Education Activities for Public Schools Procedures* for further requirements.

## 5. ACTIVITIES

The full ropes course program is assessed by the qualified supervisor and/or teacher-in-charge before the final selection of an appropriate course is determined.

A low ropes course, bouldering or slack lining activity must not include climbing activities where any part of a person's body is above 2.4m in height. If a participant is required to climb above 2.4 metres or if abseiling is required to complete any ropes course, refer to the *Abseiling and Climbing* procedures for appropriate qualifications and supervision ratios.

Facilities that include use of auto belay devices are required to produce certificates of inspection for the devices as follows:

- Indoor facilities: A current Certificate of inspection (every 12 months).
- Permanent external facilities: A current Certificate of inspection (every 6 months).

Auto belay devices used with mobile climbing walls or structures are prohibited.

Use of body belays are not permitted.

The maximum number of students permitted to perform on each element at any one time must be clearly communicated to both staff and students.

Students and supervisory staff must be briefed, prior to the start of the activity, about the activity requirements and safety aspects (see *Briefing* section in this document).

Activities must be carefully chosen to suit the age and capacity of the students, and where necessary, individual students.

### **Guidance**

*Students should be progressively introduced to:*

- *belaying on high ropes and spotting on low ropes;*
- *working together as a small team;*
- *ascending and descending from the high ropes course;*
- *procedural instructions for the specific ropes courses; and*
- *the use of safety equipment.*

### *Low ropes courses and Slacklining*

Low ropes courses and Slacklining are often incorrectly perceived as having a lower risk than high ropes courses because of the absence of a roped safety system and their proximity to the ground. However, safety on low ropes courses and when slacklining is directly dependent on the participants' maturity, capacity and concentration; as well as the quality of instruction and appropriate level of supervision.

Spotters on low ropes elements need to be in a position to support the upper part of the participant's body (specifically the head) to minimise potential impact with the ground. Specific techniques for spotting should be instructed prior to commencement of the activity by a qualified supervisor.

Spotters should actively watch the participant in order to anticipate their movements.

Stable floor cushioning or mats/crash mats specifically designed for the purpose should be used for landing areas where spotters are not used and participants are more than 1 metre above the ground.

### *Bouldering*

Individuals involved in the spotting of participants who are bouldering or traversing require a thorough briefing, demonstration of the procedures to follow, and a high level of supervision.

When climbing with any part of the body above 2.4 metres, all participants must be on a top rope belay, except where lead climbing is being taught. Refer to the *Abseiling and Climbing* procedures for relevant activity specific information.

Participants can only solo or traverse unroped if all parts of their body remain below a clearly marked line that has been painted or taped 2.4 metres above the floor. Unroped activities must not be conducted unless the facility has this line in place.

The floor, walls and area within 3 metres of any part of the climb should be free and clear of sharp hazards (see more information on cushioning below).

### *High ropes courses*

Before using high ropes courses where safety harnesses will be used, students must be trained, monitored as they practise how to clip on and lock carabiners to harnesses, and taught how to belay (if applicable).

Climbers participating on a high ropes course must be attached to the belay line with:

- a direct tie-in, using a follow through figure eight knot; and/or
- two reversed and opposed locking carabiners.

A qualified supervisor must complete a visual check of the belay and personal safety checks before allowing each student to proceed.

Participants on a high ropes course must be on a top belay system and adequately supervised at all times.

In the case of a static belay position, the belayer must be attached to the belay system, which is anchored to the floor or a wall. Back-up belayers do not have to be anchored.

Mobile or dynamic belay systems require the belayer to be attached to the belay system.

The back-up belayer is permitted to move independently to allow freedom of movement and flexibility of position (i.e. whichever is considered to be safer in these circumstances) than connecting the two belayers. There must be a minimum of three hands on the brake side of the belay at all times.

## 6. EQUIPMENT

All equipment must be fully inspected by qualified instructors and all participants prior to use, at critical times throughout the activity, and immediately after use.

A transition belay system and adequate supervision on each platform between high elements is essential for the safety of participants who are between element safety belays.

Purpose designed equipment that meets appropriate Standards must be used for all activities that involve abseiling, climbing and the use of ropes.

Advice relating to the planning, approval and construction requirements for ropes courses can be found in the activity specific document of *Abseiling and Climbing*.

All roping equipment must meet the international standards

Manufacturers equipment specifications must also be taken into consideration.

Ropes, tapes, cords, harnesses, helmets, hardware and slacklines must be retired after five years (unless the manufacturer specifies a longer service life). They must not be used if there is any doubt about their integrity.

Each participant must wear appropriate clothing, a correctly fitting harness and hardware (i.e. other specialist equipment specific to the activity) as well as:

- a hard-shell climbing or roping helmet with a secure chinstrap, that meets the relevant Standard for all ropes courses (i.e. currently CE-EN12492, UIAA106, AS2316 or
- AS 2316.2, an adaption of the EN 15567-1 and -2 Standard), including when low ropes course activities are in progress, or when at the base of a cliff or cliff face;
- gloves of an appropriate size worn on each hand while handling moving rope to prevent overheating of the hands and possible loss of rope control. Exemptions can apply where *Slow Go* pulleys are used; and
- fully enclosed footwear.

Emergency and rescue equipment (e.g. rope slings, spare carabiners, access ladder, etc.) must be readily accessible.

Appropriate first aid equipment must be readily accessible. The first aid kit must include items appropriate for the activity, environment, size and needs of the group, and duration of the activity.

Temporary elements must be erected by qualified personnel who are competent in the erection and supervision of climbing and challenge ropes courses.

Steel carabiners are recommended for use on ropes courses.

Annual safety inspections of ropes courses must be conducted by a competent person. This can be undertaken by a qualified rigger, independent industry expert or independent organisation that is able to inspect the whole facility (i.e. as required by the relevant Australian Standard - currently (AS) 2316.1-2009: Artificial climbing structures and challenge courses).

Regular maintenance checks are conducted by the school, logged and records maintained. Facility and equipment maintenance logbooks should include:

- copies of maintenance inspection and construction conformance paperwork;
- date of purchase and/or date of manufacture;
- date and the details of maintenance; and
- the history of use.

### *Cushioning*

It is recommended where participants are not attached to a belay system and their feet are in excess of one (1) metre from safe ground, that cushioning or crash mats are provided and positioned so that there is no possibility of contacting the floor surface if a participant falls. This is part of a multi-barrier approach and other risk management options such as types of pulleys should also be considered.

Stable floor cushioning or mats/crash mats specifically designed for the purpose are used for landing areas when soloing, bouldering and/or traversing, and where spotters are not used.

### **Guidance**

*For further information, refer to Australian Adventure Activity Good Practice Guide: Challenge Courses.*

*A broad spectrum, water resistant sunscreen should be applied as per manufacturer's recommendations.*

*Drinking water should be available at all times.*

## **7. THE SUPERVISORY TEAM**

Refer to *Appendix A: General Requirements in the Recreation and Outdoor Education Activities for Public Schools Procedures* for further requirements.

## **8. EXTERNAL PROVIDERS**

Refer to *Appendix A: General Requirements in the Recreation and Outdoor Education Activities for Public Schools Procedures* for further requirements.

## **9. MINIMUM QUALIFICATIONS AND COMPETENCIES**

The Department teacher-in-charge must confirm that the supervisory team members possess skills in ropes courses and bouldering activities and have the appropriate experience, knowledge and skills to identify and manage potential risks at any stage during activities.

Refer to *Appendix A: General Requirements in the Recreation and Outdoor Education Activities for Public Schools Procedures* for mandated:

- first aid qualifications; and
- evidence requirements for all qualifications of competencies.

At all times, ropes courses and bouldering activities must be supervised by specifically qualified and inducted personnel who are experienced and competent in the erection and supervision of the climbing or ropes apparatus.

At least one member of the supervisory team must be able to effect a support and rescue for all climbing activities offered within the program.



*Recommended minimum qualifications and/or formal training requirements:*

| <b>The qualified supervisor must have:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b><u>AND</u> proof of experience:</b>                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The qualified supervisor must hold a current, activity-specific qualification and/or have attained current, activity-specific competencies through a recognised tertiary institution or Registered Training Organisation (RTO) including:</p> <ul style="list-style-type: none"> <li>• relevant units in Challenge Ropes Courses or Bouldering completed as a part of a Certificate III (or higher) in Outdoor Recreation; or</li> <li>• an activity-specific, relevant, nationally agreed set of competencies that were previously registered through the National Outdoor Leaders Registration Scheme (NOLRS); or</li> <li>• an equivalent qualification, as recognised by the Director General.</li> </ul> | <ul style="list-style-type: none"> <li>• Relevant, logged evidence that confirms that they have regularly updated their in-service training on the supervision of ropes courses.</li> </ul> |

Where any part of a participant's body is more than 2.4 metres from the ground, the minimum qualification/s outlined above apply.

**Guidance**

*For current information about recreation industry training, refer to the Department of Education, skills and Employment.*

*Skills and experience*

The Department teacher-in-charge must confirm that the supervisory team:

- has experience in the activity at the level being offered to students;
- has the relevant qualifications;
- has current First Aid and CPR qualifications; and
- understands the emergency responses and supervision responsibilities.

Supervisors should have relevant, logged evidence that confirms that they have regularly updated their in-service training on the supervision of ropes courses.

For challenge ropes courses, each qualified supervisor should have:

- recent logged experience in single-rope techniques and rescue training (including individual and partner belay systems and self-rescues);
- familiarity with the hazards of ropes courses;
- the understandings and skills required to identify and manage potential risks at any stage of the activity;
- competency in dealing with emergencies that are consistent with the type of activity and equipment being used; and
- working knowledge in the selection, use, maintenance and storage of course equipment.

All qualified supervisors must have training and experience in checking belay systems.

## 10. MINIMUM LEVELS OF SUPERVISION

Supervisory requirements must take into consideration the:

- purpose of the activity;
- age, experience and capacity of each student;
- students' medical conditions or disabilities;
- supervisors' competence and experience;
- competence of supervisors at the venue;
- type of activity to be undertaken;
- nature of the environment; and
- location of the activity.

Greater supervision must be provided:

- for beginners, primary aged, or less able students who are participating in activities outside the school grounds;
- if the design and position of the course requires higher supervision levels; and/or
- where difficult elements are included on the course.

### **LOW ROPES COURSES AND BOULDERING**

Participation in high ropes courses is not recommended for students in Kindergarten - Year 4.

Year K - 4

There must be two supervisors at all times:

- one qualified supervisor for every 24 students or part thereof; and
- one supervisor for every eight students or part thereof (including the qualified supervisor).

### **LOW ROPES COURSES, HIGH ROPES COURSES AND BOULDERING**

Year 5 and Year 6

There must be two supervisors at all times:

- one qualified supervisor for every 24 students or part thereof; and
- one supervisor for every 16 students or part thereof (including the qualified supervisor).

Year 7 -12

There must be one supervisor at all times:

- one qualified supervisor for every 24 students or part thereof; and
- one supervisor for every 16 students or part thereof (including the qualified supervisor).

Students must be within the qualified supervisors line of sight at all times. If activity goes outside of line of sight, a second supervisor is required to maintain adequate supervision.

The table below illustrates the supervision requirements for common group sizes. Groups may be larger than those indicated here but must remain within the prescribed supervision ratios and any limits set out earlier in this document.

| <b>Year</b>   | <b>Activity</b>                                             | <b>Number of Students</b> | <b>Qualified Supervisor</b> | <b>Experienced Assistant Supervisor</b> | <b>Total Supervisory team</b> |
|---------------|-------------------------------------------------------------|---------------------------|-----------------------------|-----------------------------------------|-------------------------------|
| <b>K - 4</b>  | <b>Low Ropes Courses and Bouldering</b>                     | 1 - 16                    | 1                           | 1                                       | 2                             |
|               |                                                             | 17 - 24                   | 1                           | 2                                       | 3                             |
| <b>5 - 6</b>  | <b>Low Ropes Course, High Ropes Course &amp; Bouldering</b> | 1 - 24                    | 1                           | 1                                       | 2                             |
|               |                                                             | 25 - 32                   | 2                           | 0                                       | 2                             |
| <b>7 - 12</b> | <b>Low Ropes Course, High Ropes Course &amp; Bouldering</b> | 1 - 16                    | 1                           | 0                                       | 1                             |
|               |                                                             | 17 - 24                   | 1                           | 1                                       | 2                             |
|               |                                                             | 25 - 32                   | 2                           | 0                                       | 2                             |

## 11. SUPERVISION STRATEGIES

Supervision strategies must be confirmed by the Department teacher-in-charge to ensure the safety and wellbeing of students is maintained at all times.

The appropriate number of supervisors directly monitoring the students must be maintained at all times.

The supervisory team should have a clear view of all students at all times.

Supervisors conduct safety checks on all participants and equipment prior to the commencement of, and during the transition between various elements of the course.

Students not directly involved with the ropes courses must be supervised. The area underneath the course must be kept free from bystanders.

Spotters must keep their eyes on participants at all times in order to anticipate their moves.

Spotters on low ropes should be in a position to support the upper part of the participants' body (specifically the head) in order to minimise potential impact with the ground.

Individuals involved in the spotting of participants who are bouldering or traversing should be provided with a specific briefing, demonstration of the procedures to follow, and a high level of supervision.

Belayers must be directly supervised when lowering participants.

A buddy or team system is established so that students can check the safety and wellbeing of their partner(s).

Participants who do not display a responsible attitude or behaviour are to be removed from the activity. Alternative activities are provided for students who do not have the capacity to participate.

## 12. IDENTIFICATION OF PARTICIPANTS

Refer to *Appendix A: General Requirements in the Recreation and Outdoor Education Activities for Public Schools Procedures* for further requirements.

## 13. COMMUNICATION STRATEGY

Refer to *Appendix A: General Requirements in the Recreation and Outdoor Education Activities for Public Schools Procedures* for further requirements.

## 14. RISK MANAGEMENT PLAN

Refer to *Appendix A: General Requirements in the Recreation and Outdoor Education Activities for Public Schools Procedures* for further requirements.

Risk management plans must include possibility of harness hang syndrome and an appropriate action plan for when harness hang syndrome is suspected.

## 15. EMERGENCY RESPONSE PLAN

Refer to *Appendix A: General Requirements in the Recreation and Outdoor Education Activities for Public Schools Procedures* for further requirements.

## 16. BRIEFING STUDENTS AND SUPERVISORS

The Department teacher-in-charge must confirm that all participants are briefed about the educational purpose and the cooperative nature of the activity;

- the activity itinerary;
- required skills appropriate to the activity;
- participants' roles and responsibilities, including standards of acceptable behaviour and activity rules;
- the role and location of supervisors;
- the system for identifying students and supervisors;
- food and water requirements;
- procedures that will be followed if members of the party are overdue, or become lost or separated from the group;
- potential hazards and safety procedures appropriate to the activity and venue;
- buddy practices and lost buddy procedures;
- areas demarcated and identified specifically for student groups;
- conditions associated with hypothermia, sunburn and dehydration;
- communication strategies that will be used throughout the activity, including a signal to gain the attention of the whole group; and a signal to be used if assistance is required;
- emergency and evacuation procedures, signals and location of emergency equipment;
- appropriate clothing for the activity and weather conditions, including thermal and sun protection;
- minimal impact principles for that location (see *Leave No Trace* principles);
- aspects of the environment and expected weather conditions; and
- the route to be followed including pre-determined stops and/or meeting points along the way (if applicable).

Individuals involved in the spotting of participants who are bouldering or traversing should be provided with a thorough briefing and demonstration of the procedures to be followed.

Special information sessions must be arranged for students who were absent from preparatory briefings.

## 17. INFORMED CONSENT

Refer to *Appendix A: General Requirements in the Recreation and Outdoor Education Activities for Public Schools Procedures* for further requirements.