



OUTDOOR
OUTREACH

Rock Climbing

LESSON PLAN

**Risk Management
&
Emergency Protocols**

Rock Climbing Lesson Plan

Introduction, Name Game, Rules & Boundaries

Why is this important?

- Establishes a tone for the day
- Sets goals and expectations for a fun and safe experience
- Clearly lays out rules & boundaries for good risk management

Key Points

- **Greet Participants** - Greeting the participants is an important part of the day! It sets a tone for the trip, opens the door for relationship building and provides an opportunity to make an initial baseline assessment of participants' comfort level and needs
- **Name Game** - Pick an icebreaker that is both fun and short and will help leaders connect with the participants and get to know their names
 - Example 1: "Say your name and your favorite food, animal, etc."
 - Example 2: "Memory" 1st person says name, 2nd person repeats 1st person's name and then says his or her name, 3rd person repeats 2nd and 1st person's name and so on ...
- **Trip Overview** - Share a general goal for the day and basic overview so participants know what to expect throughout the day
- **Rules & Boundaries**
 - **"4 R's"** - respect self, others, equipment & environment (LNT)
 - **"Rule of 3"** - groups of 3 with one instructor when leaving boundaries for (emphasize communication)
 - **"Challenge by Choice"** - instructors will respect a participant's choice regarding his or her level of participation in the activity
 - **Site boundaries** - (covered in detail once you reach the climbing site)
 - **Bathroom** - location and procedure (varies based on site)
 - **Sun protection** - the sun does not discriminate! Teach the importance of applying sunscreen for ALL participants regardless of skin color and regardless of cloud cover. Wear hats with a visor and seek out shade when possible
 - **Hydration** - 60% of the human body is made up of water! Drinking water is one of the most important ways we take care of ourselves. Replenishing fluids throughout the day prevents dehydration which makes people feel tired and agitated.

Teaching Tips

- This lesson is best delivered in a circle. Strive to keep it concise, fun, and interactive. Avoid distractions and establish "buy-in" to keep participants from tuning out.

Gear Fitting

Why is this important?

- Introduces participants to the essential climbing safety equipment they will be using
- Provides a baseline standard and expectation to ensure participants are using equipment correctly throughout the day

Key Points

- **Helmets** - Protect our heads from anything that might fall from up above such as rocks or carabiners and also in case we bump our heads on the wall while climbing
 - Helmets must be worn by everyone at all times within the designated helmet zone
 - Helmets should be sized and fitted correctly: Blue helmets fit Small to Medium and Orange helmets fit Medium to Large. Helmet size can also be adjusted by twisting the dial located at the back of the helmet.
 - Chin straps should be strapped all times and tightened so the helmet is secure but still comfortable. Check that the harness is secure by shaking head gently back and forth.
 - If you are going to set a helmet down, make sure to set it with the dome facing up so that it does not roll away. (No unhappy turtles!)
- **Harnesses** - are made from super strong materials and are specially designed to catch us and keep us safe while rock climbing
 - Loosen the the buckles fully before trying to put the harness on
 - Step through the leg loops making sure the webbing is not twisted and pull the harness up so the waist strap is above the hip bones. (You should be able to poke your belly button through the orange belay loop.)
 - Pull to tighten the waist strap. (It should be tight enough that you are not able to fit more than 2 fingers between your body and the harness)
 - Tighten the leg loops so they are comfortable and not loose
- **Climbing Shoes** - are specially designed with high friction rubber on the bottom to provide maximum traction on the wall
 - Climbing shoe sizes are approximately the same as normal street shoes. Participants should try shoes on to make sure they fit well prior to approaching the climbing site. Shoes should fit tight but not be painful to stand or walk in.
 - Participants may choose to wear socks or go without
 - Shoes must be sprayed with disinfectant spray after every use and strapped or tied together to ensure they do not get separated in the storage bag.
 - Climbing shoes are not designed for normal walking or hiking. On indoor climbing trips, everyone must remove their climbing shoes prior to entering the restroom.

Teaching Tips

- This lesson is best delivered in a circle near the gear van. Keep it concise with more time for sizing gear and double checking everyone's harness. Gear that is not used should be stored away and locked in the gear van.
- Remind participants to leave electronics in the van, to remove bulky objects from their pockets (cell phones, iPods, wallets) as well as big earrings, necklaces, bracelets, anything that can get caught in rope or belay device while climbing. Girls with long hair should pull their hair back so that they do not get it caught in the ATC.

Climbing Site Intro & Boundaries

Why is this important?

- Draws awareness to site hazards and communicates expectations for participants and staff regarding basic risk management and self care

Key Points

- **Organization** - As participants arrive designate a spot for personal belongings and shoes. Strive to maintain a tidy and organized site throughout the trip.
- **Site boundaries** - Identify boundaries that mark the area around the climbs where participants may hang out when not climbing. Point out any hazard areas that are “out of bounds.” Remind participants there is no running or horseplay allowed at the climbing site. Participants must be tied into a rope in order to climb.
- **Helmet Zone** - Designate the area where everyone must be wearing a helmet -- within 30 ft of the climbing wall or anywhere there is potential to be hit by falling rocks. If anyone sees a rock or any other object falling, let others know by yelling “ROCK!” If you hear someone yell “ROCK” do NOT look up! Stay still and let the helmet do its job.
- **Communication** - Communication is an important part of rock climbing. If at any time an instructor says the word “STOP” -- everyone must stop, because it means the instructor sees something happening that is unsafe and needs to correct it.
- **Edge safety** - instructors, volunteers and participants within 3 feet of the edge of a climb/cliff/rappel **MUST** be clipped in to an anchor.
- **Site Orientation** - Point out the climbing routes based on relative difficulty and the rappel station. Explain what rappelling is. Explain briefly how the anchors are set to ensure safety and that they are made to be strong enough to hold a car.
- **Rappel Approach** - varies from location, but generally involves some level of scrambling. Participants must be accompanied by a competent adult when approaching the rappel station
- **Ropes** - Explain how dynamic ropes work to absorb energy and that it is important to not step or stand on ropes because this grinds dirt into the rope causing them to wear out more quickly. (Some instructors like to set a rule that if you step on the rope you have to kiss it. May not be appropriate for every group.)
- **Self Care** - Remind participants to be drinking water, re-applying sunscreen and practicing good self care
- **LNT** - Remind participants the importance of respecting the climbing site and also other users
- **Overview of the Day** - Give a general overview of the lesson progression and flow of the day’s activities

Teaching Tips

- Ask questions to keep participants engaged and to check for comprehension

Figure 8 Knot & Belay Lesson

Why is this important?

- Introduces participants to the basic technical skills required for rock climbing and provides a visual demonstration of how climbing and lowering works
- Empowers participants to support one another and engage the activity at a deeper level
- Establishes common rules for safe climbing and belaying

Key Points

NOTE: This lesson is co-taught by 2 instructors.

One instructor introduces and demonstrates how to tie in. The other instructor teaches the belay lesson. The instructors then demonstrate safety check and run through the whole progression. [On some trips it may be appropriate to condense portions of this lesson if students are not belaying.]

- **Trust and Communication** - climbing is a team activity that requires trust and communication. Both the climber and belayer are responsible for a safe and successful experience.
- **Tying in** - The climber ties into the side of rope that is closest to the route. Check to make sure the ropes are not twisted near the anchor. Climbers tie into the climbing rope using a knot called the "Figure 8 follow-through." It's an incredibly STRONG knot that is easy to identify.
 - **Tie the Figure 8** - Form a loop in the rope about 3 feet from the rope's end -- Approximately the distance from a person's horizontally extended hand to their opposite shoulder. Wrap the tail of the rope around the loop and pass it through forming the shape of an 8. [It might be helpful to pretend the loop is an "alien head". Twist the tail of the rope around to "choke the alien" and pass through the loop to "Poke it in the Face."]
 - **Follow it Through** - Pass the end of the rope through your harness tie-in point bringing the knot all the way to your harness. Trace the knot through again with the end of the rope. [It might be helpful to imagine the Figure 8 is a racetrack and the end of the rope is a car following the track.]
 - **Check the Knot**
 - 1) Check the knot is tied correctly by counting 5 sets of parallel lines.
 - 2) Check the tail of the knot is at least 6 inches long -- the length of a fist and a thumb.
 - 3) Check that the knot is no more than a fist's length away from from the harness.
- **Belay Set-up** - The belayer attaches into the other side of the rope.
 - **Position belayer** - Make sure you are safely positioned with both feet on stable ground.
 - **Connect the belay device**
 - 1) Pass a bite of rope through the belay device and orient the device so the rope going up to the anchor is on top and the rope going to the ground is on bottom.
 - 2) Twist and push the carabiner gate to open it and clip it through both the rope and belay device.
 - 3) Attach the carabiner to the harness belay loop and double check that the device is oriented correctly for the belayer's dominant hand

4) Check that the carabiner is locked

- **PLUS Belay Method** - It is the belayer's job to take slack and ensure the climber is protected at all times. We use a specific method for belaying that follows the acronym PLUS. This method ensures that the belayer's dominant hand never lets go of the brake line.
 - **Pull** → Both hands work together to pull slack through the belay device (Approx. 1 foot of slack at a time)
 - **Lock** → Most important! Bring the dominant hand with brake line below the device to prevent the rope from sliding through freely. The lock position should be the default "resting" position while belaying.
 - **Under** → The belayer's "non-dominant hand" reaches under to grasp the brake line below their "dominant hand"
 - **Slide** → **Without letting go of the rope**, slide the dominant hand up until it is about an inch away from the belay plate. Too close could pinch their hand if climber falls.
- **Backup Belayer** - For additional security, **ALL** participant belayers must have a backup belayer. The backup belayer is position behind and if possible below the belayer. He or she holds the brake line and takes out slack, leaving just enough slack so as to not impede the belayer's ability to manage the belay. In the event that the belayer loses control of the belay, the backup belayer holds the rope in the brake position to prevent the climber from falling.
- **CRASH Safety Check** - Before climbing, the team must perform a safety check of all critical points. One simple way to do this is follow the acronym CRASH
 - **Carabiner** → Squeeze the carabiner to ensure the gate is locked
 - **Rope** → Check that the rope is tied correctly into the climber's harness, running freely to the masterpoint of the anchor & oriented correctly through the belay device
 - **Attitude** → Assess the team's mental readiness for the climb
 - **Shoes & Stuff** → Check for any extraneous stuff on the climber that should be removed. Check that they are wearing properly fitted climbing shoes.
 - **Harness & Helmet** → Check that all harnesses are secure and correctly buckled. Check that helmets are on and correctly fitted.
- **Opening Commands** - the verbal contract or communication between a climber and a belayer.
 - **Climber:** "ON BELAY?"
 - **Belayer:** "BELAY ON"
 - **Climber:** "CLIMBING?"
 - **Belayer:** "CLIMB ON"
- **While climbing** - the following commands can be used, although there are other ways to communicate this. Whatever commands are chosen should be used consistently throughout the day.

- “TAKE” : for a tighter rope.
- “SLACK” : for a looser rope.
- **When climber is finished climbing**
 - **Climber:** “TAKE”
 - **Belayer:** takes any slack, puts both hands on the brake line and acknowledges the climber, “I’VE GOT YOU”
 - **Climber:** when tension is provided the climber weights the rope, gets in the lowering position (feet flat on rock, wide feet, body forms “L” shape, head up, shoulders back, leaning back) and says: “LOWER ME”
 - Show the participants what happens when feet are too close together, body is not away from the wall, etc.
 - **Belayer:** “LOWERING”
- **Closing Commands** - once the climber is safely on the ground the team can close the contract
 - **Climber:** “OFF BELAY?”
 - **Belayer:** “BELAY OFF”
 - Thank you’s and high fives
- **Climbing groups** - once the climbing demonstration is complete, students are divided into groups of 2 or 3. Instructors may designate groups or allow students to choose for themselves. Instructors may be assigned to stay with a particular group of participants or manage a particular belay station throughout the activity time.

Teaching Tips

- Ensure all participants are seated and in a position where they can see and hear the lesson
- Assure participants that they will receive individual instruction to go over the information covered in the lesson
- Use slightly exaggerated motions that can be easily seen
- Make it fun! Your confidence and demonstrated expertise will create the foundation of trust needed for nervous participants to have a positive experience climbing

Climbing Movement & Coaching

Why is this important?

- Rock climbing is hard! The movements often feel counter-intuitive, especially for those who are new to it. Learning some basic techniques can significantly help a struggling participant achieve more success on a climb.
- Instructors should have an awareness of how to teach basic climbing movement and technique to help coach participants.

Key Points

- **Participant Awareness** - before trying to coach a participant, take a moment to observe and establish awareness. Consider age, maturity level, climbing experience, level of confidence, level of fitness, personality, etc. Not every participant wants to be coached on the wall. Very few participants want to be put on the spot with multiple people shouting unhelpful and confusing directions from below.
- **Route Awareness** - there are many different types of climbing routes that each require different techniques. Climbing a chimney is very different from climbing slab, which is very different from climbing a hand crack, etc. Focus on techniques that will be relevant to the route the participant will be climbing.
- **Balance & Weight Transfer** - Humans are bipedal creatures. We learn from an early age how to walk by using the strong muscles in our core and legs to maintain balance while transferring weight between our feet. Climbing is no different! Climbing movements are essentially a series of weight transfers performed while maintaining a state of balance.
- **Muscle Efficiency** - our legs are much stronger than our arms. Arms get tired more quickly when the muscles are engaged in a bent position. Keeping arms straight and weight on the feet is a much more efficient way to climb.
- **Footwork** - participants who are new to climbing shoes will not know how to utilize their advantages. Generally speaking the toe edge of a climbing shoe provides the most precision and versatility when standing on small holds. Keeping heels pointed out away from the wall and hips in line with feet often helps maximize friction on the rock.
- **Hand holds** - while some holds like jugs will be intuitive, other holds like cracks or crimpers require more specific technique. Encourage new climbers to explore holds and try different ways of holding them.
- **Oxygen** - Don't forget to breathe
- **Confidence** - learning to trust the rope and the belayer is a key step to unlocking the confidence needed to attempt challenging moves. It may be helpful to have a participant practice "falling" from a few moves off the ground and feeling what it's like to be caught by the rope. This is also important for lowering back to the ground.

Teaching Tips

- Try not to over-coach participants or yell at them from the ground. Be specific and thoughtful in your directions. If they don't make it to the top that's ok! Take the opportunity to offer more specific constructive feedback when they are back on the ground.

Rappelling

Why is this important?

- Rappelling can be a fun and empowering experience for anyone, regardless of physical condition or climbing ability. **Instructors MUST be trained and evaluated before facilitating a rappel for participants.**

Key Points

- **Anchor Set-up** - The anchor must be built to industry safety standards with a single rappel line fixed at the masterpoint using a “Münter Mule Overhand” knot. Ideally, the anchor’s masterpoint should be elevated off the ground and back away from the edge. Participants will use a standard tube style belay device such as an ATC attached directly to the belay loop, or extended with a sling. An additional belay line attached to the participant’s belay loop will be managed by the instructor from the top of the rappel directly off the anchor.
- **Edge Awareness** - Instructors, volunteers, and participants must be attached to an anchor with a full strength tether anytime they are near the edge. In some instances it might make sense to set up a safety line to protect the approach to the rappel anchor.
- **Ratio** - The student : instructor ratio for rappelling should not exceed 3:1
- **Approach** - Often times accessing the rappel station requires some level of scrambling. Participants must always be accompanied by an instructor when approaching the rappel. In some instances it might make sense to belay participants through the approach (consider risk of a fall, exposure, participant physical condition, climbing ability, confidence, etc.). Any 4th or 5th class approach should be protected by a belay.
- **Safety checks** - Before removing the tether to allow a participant to rappel, the instructor should do a thorough safety check:
 - **C - Carabiner:** ensure all carabiners are locked (Rappel device, Belay line @ participant harness, Carabiners @ anchor)
 - **R - Rope:** ensure the rappel device is oriented correctly on fixed rappel line. Ensure the belay line is oriented correctly.
 - **A - Attitude:** check-in to see if participant is ready. Do they have any questions?
 - **S - Shoes & Stuff:** participant should be wearing climbing shoes for security on the rock. Any loose items should be put away. Hair should be tied back to ensure it does not get caught in the belay device.
 - **H - Harness & Helmet:** check that harness & helmet are secure and correctly buckled
- **Assistance** - The instructor managing a rappel must first be assessed on their the ability to assist a stuck participant by transferring load between the belay and rappel lines as well as the ability to safely lower a participant to the ground.
- **Completing Rappel** - Upon finishing the rappel an instructor, volunteer, or other experienced participant will help the rappelling participant unclip from the system and attach all gear to the belay line so that the instructor managing the rappel can haul it up for the next participant.

Teaching Tips

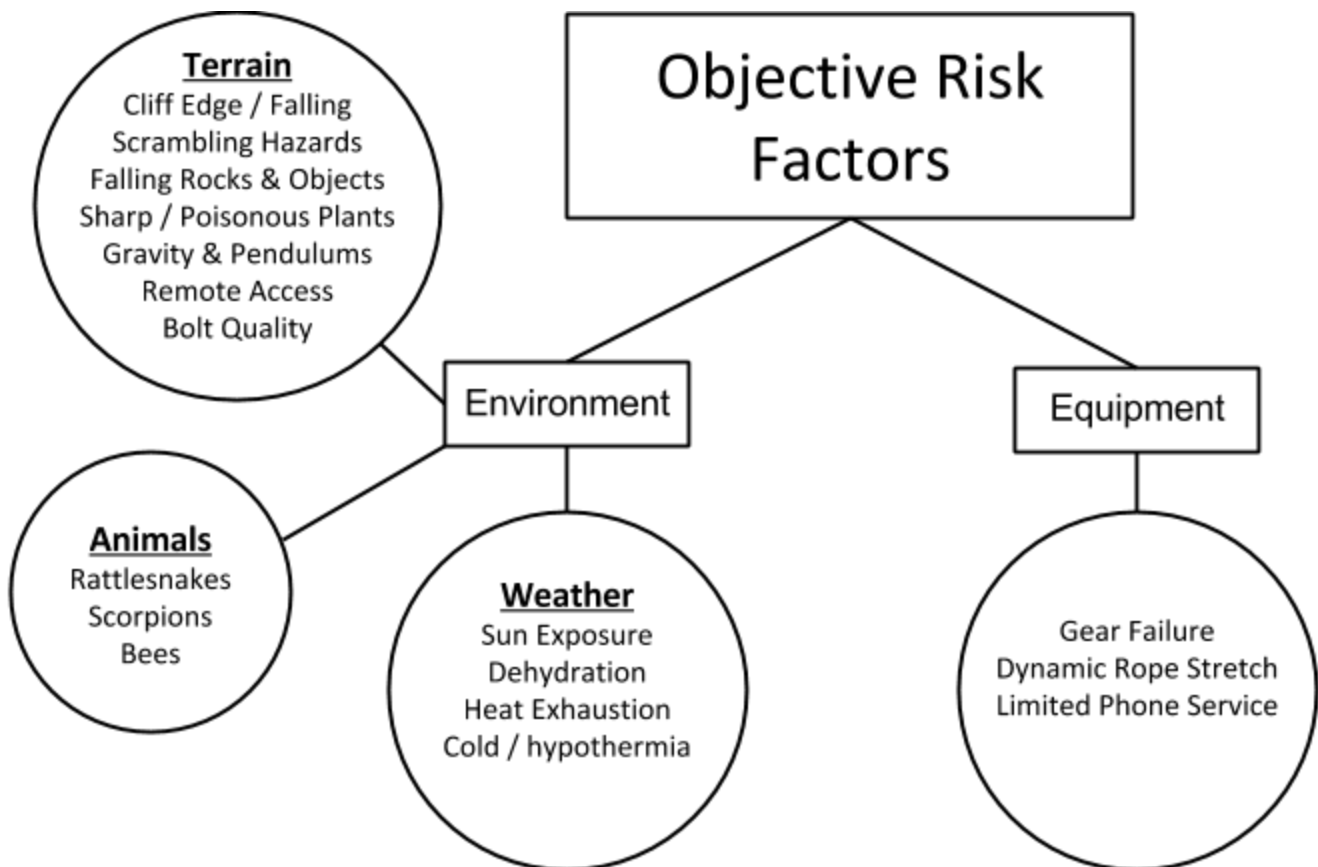
- The crux of rappelling for most participants is leaning on the anchor and transitioning over the edge. Confident instruction, reassurance, position and coaching are a key to good facilitation.

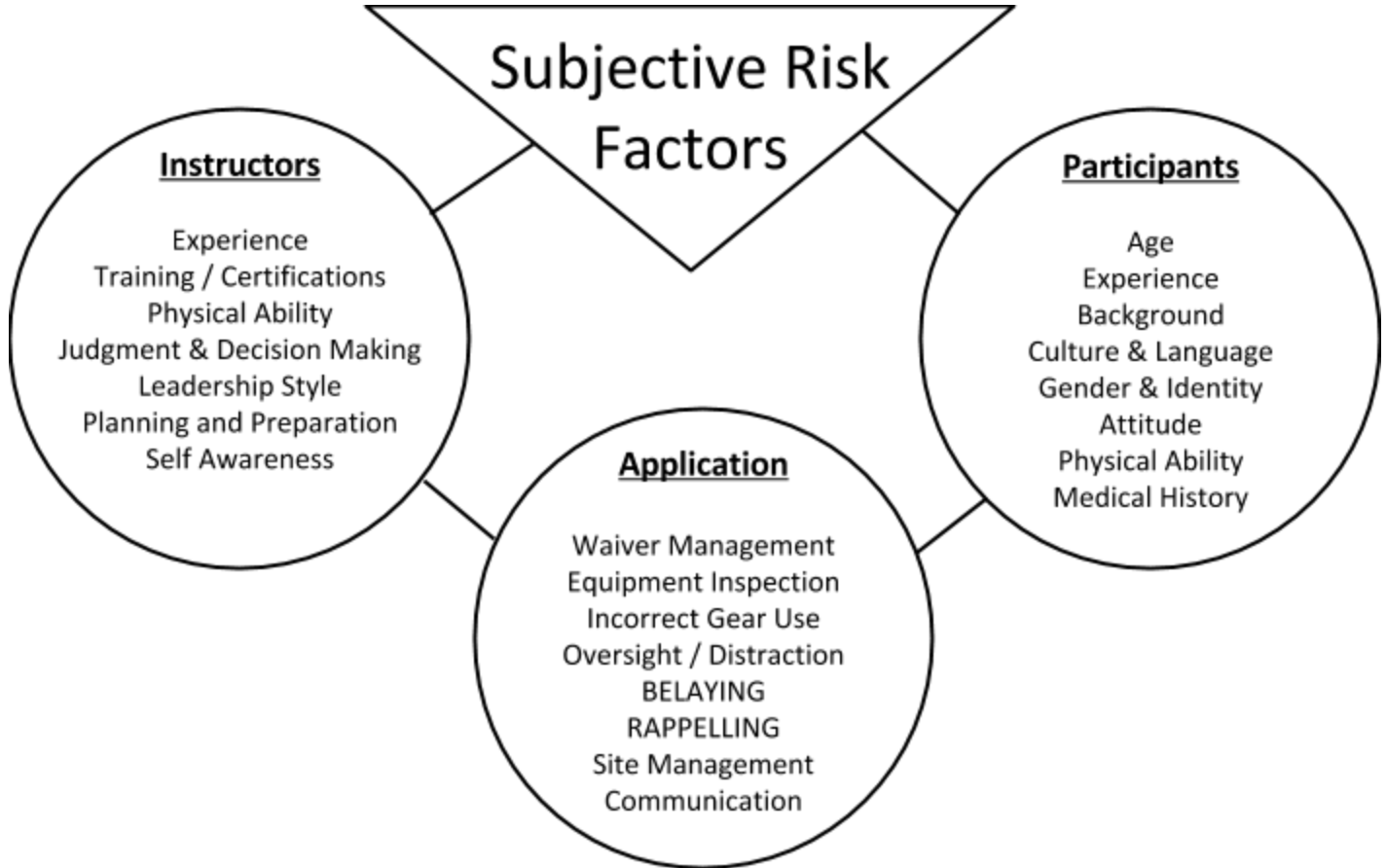
Risk Management

Rock climbing has large inherent risks. Without good Risk Management it is impossible to create the “safe and joy-filled environment” that Outdoor Outreach seeks to offer every participant. Managing risk involves using good judgement to make sound decisions in a dynamic environment. This section contains a general overview of common risk factors on rock climbing trips as well as an outline of expected RM practices for OO rock programs. Additionally you will find the OO Emergency Action Plan detailed step by step on what to do if you are faced with some common injuries while rock climbing and also for emergency situations at the climbing site.

Objective vs. Subjective Risk Factors

It is often helpful to framework risk management in terms of **Objective vs. Subjective** risk factors. Objective Risk Factors exist inherently in the activity itself. Subjective Risk Factors exist as a result of human engagement in the activity. Imagine a scenario where a top rope climber takes a fall while being belayed from the ground. An **objective** equipment risk might be the 7 - 12% rope stretch inherent in a dynamic rope that could result in the climber hitting the ground if they fall near the bottom on a long climb. A **subjective** risk factor in this same scenario would be the belayer’s level of experience and attentiveness in the moment to taking out slack which would minimize the fall distance.





Risk Management Practices

- **Ratios:** Instructors should maintain a 3:1 student to adult ratio for all rock climbing activities
- **Training:** Outdoor Outreach offers annual rock climbing trainings for field instructors led by experienced senior rock instructors. Additional training and evaluation opportunities are available for instructors seeking to become Senior Rock Instructors.
- **Gear Maintenance:**
 - **Ropes:** Dynamic ropes should be stored and transported in rope bags. Instructors should utilize the tarps at belay stations to keep ropes from getting excessively dirty. Instructors should be vigilant to ensure participants are not standing on the ropes. Ropes should be washed biannually.
 - **Gear Inspection:** Instructors should be in the habit of inspecting gear in the field as part of standard safety checks. Any gear that shows signs of wear should be pulled out and tagged for the Logistics Coordinator. All rock gear should be formally inspected

biannually. Gear that shows signs of excessive wear or that has reached its recommended age of retirement should be retired.

- **Planning & Preparation:** Good risk management begins with good planning and preparation. Program coordinators and senior rock instructors will select appropriate site and route selection that takes into account (among other things) expected weather, terrain, timing, other users, group size, background, experience, physical condition, and goals for the day. Trip logs, waivers, and checklists will all be utilized in the pre-trip meeting to ensure the team is prepared before each trip.
- **Site Set-up:** While setting up the climbing site instructors must observe safe practices. Helmets should be worn at all times. Harnesses should be put on at the base of the climb before approaching the anchors. Anchor stations should be approached by the safest way possible. Instructors should be tethered to a full strength anchor point at all times when working near an edge.
- **Anchors:** All anchors must be built to industry standards before bearing a human load.
 - S - solid points of protection
 - E - equalization
 - R - redundancy
 - E - efficiency
 - NE - non-extension
 - Toprope masterpoints should be extended over the edge to minimize rope drag. The masterpoint should connect to the climbing rope with two opposite and opposed locking carabiners.
 - Anchors should be built in line with the routes to minimize potential for pendulum swings. Directionals should be employed if the route varies from being inline with the anchor.
- **Assistance & Rescues:** In the event that a student requires assistance on a climb, seek first to find the simplest and safest solution available. Begin by offering reassurance and coaching. If possible try to lower the participant safely and slowly to the ground. If the participant is injured or unconscious, the Senior Rock Instructor should take control and perform a counterbalanced ascension and lower (i.e. Pick-off). If the participant is afraid and unwilling to weight the rope after coaching and reassurance, the Senior Rock Instructor may also need to perform a counterbalanced ascension and lower. Senior Rock Instructors should carry on their harness all necessary equipment to perform basic assistance & rescue techniques if called upon to do so.

Emergency Protocols

In the event that an injury is minor (minor scrape, sprain, etc.) the instructor assigned as the medic will administer first aid while the group manager manages the rest of the group. The affected participant should be kept calm and comfortable. An instructor, volunteer or partner staff should remain with the injured participant until they are able to return to the rest of the group.

In the event that an injury is more severe, the medic will stay with the participant and assist while the group manager manages the rest of the group. The instructor assigned to incident command (if available) will make phone calls to the appropriate number below.

Communication in a Life/Limb Emergency or Property-threatening emergency

DO THIS FIRST:

1. Try the park-specific emergency numbers (refer to Local Emergency Resource Guide)
2. If no park-specific numbers exist, call **911**
3. If 911 does not work, check through below list for an appropriate number.

In ALL Emergency Situations, after care has been secured:

1. Work your way down the phone tree, calling each number three times in succession.
 - 1) Program Operations Manager
 - 2) Outdoor Outreach Office - 619.238.5790
 - 3) Director of Operations
 - 4) Executive Director
2. If no one answers the three phone calls, wait 15 minutes, and move on to next person.
3. Director of Operations is your contact for Media Relations (in the case of a large incident)

If the incident ends participation in the activity, an incident and witness report should be completed. Take clear photos of any wounds or injuries when it is convenient.