

ROCK SCRAMBLING

CLIMBING CODE

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OFF-TRAIL TRAVEL

GETTING TO THE SUMMIT

DOWNCLIMBING

FRICTION CLIMBING

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CLIMBING CODE



The Mountaineers Climbing Code is not a step-by-step formula for reaching summits, but rather a guideline to safe and sane mountaineering. The code provides safeguards and helps to prevent misjudgment. Many serious mountaineering accidents could have been avoided or their effects minimized if these simple principles had been followed:

- Have a party of sufficient size to handle an accident. Minimum is three.
- Keep the party together and obey the leader or majority rule.
- Never climb beyond your ability and knowledge.
- Never let judgment be overruled by desire when choosing a route or deciding whether to turn back. It is better to get back safely, than not at all.
- Carry proper clothing, food and equipment at all times.
- Leave a trip schedule with a responsible person.
- Follow sound mountaineering practices as set forth in textbooks of recognized merit.
- Behave at all times in a manner that reflects favorably upon mountaineering.

Rock scrambling differs from actual rock climbing in two ways: ropes are not used in scrambling, and exposure (danger) to falls is typically limited to minimal and survival distances in scrambling. There will be little exposure on this field trip. Therefore, we encourage you to test yourself and try more and more challenging moves and techniques. You may be surprised at the types of things you really can climb.

Ice axe - Mandatory on all scrambles. A necessity on snow, and helpful on steep heather, scree, or when crossing difficult terrain where good balance is most important like streams or wet, slippery slopes. When you buy your ice axe, follow these guidelines:

- The spike of the axe should reach the top of your ankle when carrying it in your hand by the adze, with your arm fully extended downwards. If the shaft is too long, you will waste energy raising your arm high enough to pull it up out of the snow when traveling on steep slopes. If too short, you'll have to stoop to use it.
- The ax should be heavy enough to be plunged into the snow without your having to jab it in.
- The ax head (adze) should be comfortable enough to carry in your hand for several hours.

Climbing helmet – Students **must** have a climbing helmet during Rock Field Trip and may wish to bring it on all field trips. Helmets for bicycling or other sports are not acceptable, as they are not designed to protect against falling rocks or other scrambling hazards. Scramble leaders will require helmets for all party members on scrambles with known exposure to loose rock.

Rock Scrambling & cross-country travel

Opens up a whole new world of opportunity.

1. **Climb With Your Eyes**

- Visually study the route in advance - from a distance

- Seek a continuous route
 - **Most important - know your own limits**
 - Always re-evaluate conditions/route
 - Take notes
 - Watch for campsites, wood, water, return routes, and escape routes
2. **Key Is Balanced Scrambling** - Main points to remember:
 - Keep weight over your feet
 - Learn to trust your boots
 - Develop a smooth rhythm
 - 3-point suspension
 - Keep hands below eye level
 - Test all holds
 3. **Trail Finding** - All sorts of tracks such as fishing, game, hikers, can be found. Keep alert, it's very easy to miss a turn.
 4. **Fragile Meadows** - Always stay on the trail, if possible. Use rocks/talus slopes to avoid vegetation. If crossing without a trail, spread out so as not to make a new track. Rest on rocks or logs, not flowers.
 5. **Scree & Talus** - Talus is the sloping areas of loose rocks at the foot of a cliff or slope. Stay out of the fall line of the hikers/climbers above you in case a rock is dislodged. **YELL, "ROCK"**, if you start one down the hill -warn the others. When a rock is falling toward you, watch it carefully. Be careful of sudden movements so as not to lose balance or knock over another party member. You may have to jump behind a tree or rock. Scree are the smallest fragments. Tough to climb uphill, but you can do a standing glissade coming down. Watch out for plants.
 6. **Side Hilling** - Twists ankles, contorts hips, and destroys balance. Switch now and then to shift strain.
 7. **Heather & Moss** - Although vegetation may appear to be a sign of easier terrain, on higher alpine slopes, it can be slippery, footing may be insecure and it is more difficult to find solid, stable ground
 8. **Gullies & Ridges** - Gullies begin less steep, but often end in a vertical wall. Generally, the ridges are safer and the most direct route - harder rock. Less chance of rock falls. Better view of route.
 9. **Streams** - Crossing safely. Most often, there are bridges to cross. If not, try to get a view of the stream from high above to spot cross points and/or log jams.
 10. **Etiquette** - Really a matter of how to be good company when travelling with others.
 - Don't follow too close/or too far back. Keep others in sight.
 - Release brush carefully.
 - When stopping to rest, take picture, enjoy view, and get off the trail to let others pass.
 - When passing, ask permission.

- When travelling downhill, step aside to let the uphill hikers continue without breaking stride.
- Set pace for everyone. Let the last person catch-up on a regular basis.
- Don't let one member of the party hike alone. They might get lost or get very discouraged.
- Be sure to have pre-determined meeting places, particularly, if there are trail options where one could take a wrong turn.

Getting to the Summit

1. **Types of Rock:**
 - * Talus - mountain debris
 - * Scree - tiny pebbles/rock/slate
 - * Large boulders - loose rocks
- 1A. **Quality of Rock:**
 - * Crumbly
 - * Loose
 - * Moss coverage - icy, muddy

YELL, "ROCK", when even the smallest rock is loosened - small rock can hit larger rocks.

2. **Handholds, Footholds & Other Techniques** - Select the particular hold based on solidness, convenience, and size. Visual inspection may tell what you need to know, but be sure to test all holds. Plan ahead - be sure a good hold leads in the right direction.

Use of Holds. Footholds. Once a foot is placed on hold it should not be moved or rotated. For small footholds try to use inside edge of boot because it is stiffer than outside edge. For large footholds use only as much boot as necessary. Sticking foot too far in can place you in an awkward position. Flex ankle to allow boot sole to come in contact with rock. Handholds. Cling holds, fingertips form to fit rock. Handle holds, entire hand conforms to rock.

3. **Use of Knees.** It is best to avoid scrambling on your knees for two reasons. First it can get you in cumbersome positions. Second, sharp rocks can easily damage knees.
4. **Three Point Suspension** - Move one hand or foot at a time, while three (3) remain stationary. Be in balance before letting go. Feel your center of gravity.
5. **Traversing.** When walking across a series of small holds, pointing both feet in direction of travel offers good visibility of the route, but may force the body out of balance. If rock is steep and ledge narrow, the feet should be shuffled along.
6. **Low Angle Slab Scrambling.** For maximum surface friction, body weight must be directly over the ball of the foot. The steeper the slab, the more upright the body. On higher angle slab hands are used for handholds or to increase friction.
7. **Boulder Fields, Scree and Talus.** Go up on the big rocks, and come down on the small ones. Older slopes with vegetation and soil are safer. Newer slopes have rocks that are unstable. "Screeing" is starting a small slide of pebbles and riding it

down. This is good sport but is permissible only where vegetation is totally non-existent.

8. **Party Position.** Avoid the "fall line" whenever possible. When ascending or descending steep slopes it is best not to travel directly behind someone. If you must travel behind closer is better. The more scramblers above you, the more alert you must be. On long steep slopes periodically plan an escape route. If a rock is dislodged directly above, cover your head. If a rock is dislodged far above, plan your protection.
9. **Look Back Often.** The return route will always look different. Even sun position impacts appearance. Take mental photos, **or written notes of junctures and critical turns.** **Keep track of the passing time.**

Downclimbing - Getting back Down

Harder to see foot holds. Harder to anticipate consequences of a fall.

1. **Face out** - Best on low angle rock. Careful of backpack. Keep hands low, use down pressure. On slabs, keep weight over feet. Center of gravity low, knees bent.
2. **Face Sideways** - When rock gets steeper. Lean away from rock for better visibility and footing.
3. **Face In** - when real steep. Hands low, lean away from rock to look for holds below. May need to have the climber below help the one above. Or, another with a better view can spot holds.

Rope Use

Scrambling, as taught in this class, does not usually involve the use of ropes and other climbing devices. But, it is a good idea to have some knowledge in case of emergencies. On the rock field trip, you will learn to use two- (2) simple rappel techniques. Handy if you are stuck and a rope has to be dropped to you.

1. **Arm Rappel** - (Pg. 198) - Used for a quick descent on a low angle slope. Lay the rope behind your back, under your armpits, and then wrap it once around each arm, holding in your hands. With a pack, be sure it goes behind the pack. Control the descent with hand pressure.
2. **Dulfersitz** - (Pg. 198) – A technique that should be mastered by all climbers. For emergency use with no seat harness or carabiniers. Face the anchor and step into the dulfersitz by straddling the rope. Bring it from behind, around one hip, up across your chest, over the opposite shoulder, then down your back to be held by the braking hand on the same side as the wrapped hip. Drawbacks are that the rope can come off of your leg. Also the rope can burn hands and neck. Use very carefully.
3. **Anchoring the Rope** - Set as close to the edge of rappel route as safely possible for longest possible rappel. Also, easier to pull rope down. Think about possible effects on the rope, being pulled into a crack, over sharp rocks, etc. Need to be able to free rope.

Natural Anchors - Best is good-sized tree (well rooted). Rappel rope goes through a runner attached to anchor. Higher on branch to avoid ground contact, but watch for too much leverage on tree.

Rock features, large boulders also used. You may often find runners left by others. Examine carefully and add one if you aren't sure. Test all anchors.

Artificial - Use at least two (2). Often put in by previous climbers. Be sure to test. Pitons, bolts, etc.

Friction Climbing

One of the techniques that you will learn on the field trip is how to climb (using friction) on sloping rock slabs. Important points include:



- Use the ball of foot, not the toes; as soon as your weight is on your toes, you'll slip.
- Keep heels down to increase friction (more boot sole will be on rock).
- Keep your weight over your feet because it increases friction. Stand straight, or if you need to for balance, bend at the waist -but keep your legs straight and keep your butt over your feet. Use your hands for balance. If you doubt that keeping your weight over your feet works, try leaning into the rock until your feet slip.
- Use your eyes to climb - - to find projections, knobs, dishes, etc. for feet and fingers.
- On very steep slabs, keep weight on one foot at a time. Put weight on one foot, then when you're ready, move the other foot carefully forward and transfer weight to the front foot; don't put weight on both feet (less friction) - - keep weight on one foot, and keep your body centered over that foot. Move only one hand or one foot at a time.
- **You want to keep 3 points of contact on the rock at all times.**
- Move your body forward, transferring your weight to your front foot, then move your body up. This method is very efficient and works well anytime you are moving uphill.

Rock Fall

On field trips and scrambles, you will become acquainted with one of the more serious hazards of rock scrambling -- rock fall. Whether dislodged by yourself, a fellow scrambler, or by natural forces, if you see or hear a falling rock, you should **immediately shout** a loud warning, **"ROCK!"** Remember to repeatedly shout a warning, regardless of the possibility that someone may be below you.

- If a warning of **"ROCK!"** is shouted from above, look up and locate the rock. If necessary,

you can dodge the rock or get behind any projection at hand, being sure to relay the warning to other scramblers. **Remember:** Although it may at first appear that the rock will miss hitting you, the rock may bounce and split into pieces which may abruptly change their direction of fall. If you should dislodge a rock, do not wait to see whether it is going to roll far enough to hit someone. Shout "ROCK!" immediately!

- The best solution to the rock fall problem is for each scrambler to practice an extreme form of self-discipline to avoid dislodging a rock. This discipline should be practiced 100 percent of the time, whether on the trail or rock scrambling. The rewards in rock scrambling are primarily of a personal nature for the greatest number of participants. One of these rewards should be the personal pride you take in your ability to scramble through an area where loose rock is present without causing a rock fall, even though other scramblers may not be below you. You will find that you can increase your rock scrambling skills at a faster rate if you make-up your mind early to avoid coming into contact with loose rock. Avoiding loose rock, most often forces the scrambler onto more challenging, but also more rewarding, scrambling routes. A final, more sober incentive to preventing rock fall is the thought that a rock you dislodge may cause a serious, possible fatal, injury to a fellow scrambler.

What to read prior to class

Freedom of the Hills 8th edition:

Chapter 6 Wilderness Travel pages 111--120

Chapter 20 Fixed Line pages 466--471

OR

Freedom of the Hills 7th edition:

Chapter 6 Wilderness Travel pages 111--120

Chapter 20 Fixed Line pages 452--455

ROCK SCRAMBLING FIELD TRIP

DATE: See the Alpine Scrambling course page on the [Olympia branch website](#)

DURATION: Approximately eight (8) hours

LOCATION: TBA

REVIEW: Rock and Off-Trail Reading and Lectures

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EQUIPMENT REQUIRED:

1. Ten Essentials
2. Standard day trip equipment and pack
3. USGS quadrangles - TBA at the previous Snow lecture
4. Rain gear
5. Sunscreen and lip protection
6. Ice ax with the adze taped
7. Pack fitted with loops and straps to secure ice ax

PURPOSE:

The purpose of this field trip is to gain practical knowledge and experience in cross-country travels and rock scrambling.

NOTE:

Ten (10) essentials will be evaluated. Students will then be divided into teams and assigned to an instructor.

Each team and their instructor will proceed to the activity areas of the day as a group, rotating through a continuous course, and will be checked out at the end of the day as a group, so stay together. Stations along the course will allow students to practice specific skills in rock scrambling.

OBJECTIVES:

This trip is designed to provide you with an opportunity to assess your abilities and limitations in rock scrambling, arm rappelling, handling exposure, and your knowledge of cross-country traveling techniques. By the end of the practice, you will not only have acquired new skills, but just as important, you will have matured your rock scrambling and cross-country travel judgment by learning more about your capabilities. The following skills will be demonstrated and practiced during this field trip:

A. **Cross-country Travel**

1. **Effects of Terrain**

- a) Thick brush
- b) Stream-crossing -- fording, logs and rock-hopping
- c) Heather -- may require ice axe arrest when slippery

2. **Rate of Travel**

- a) Pace
- b) Rest step

3. **Scree/Talus Travel**
 - a) Momentum on loose rock slopes
 - b) "Screening"
4. **Route Finding/Navigation**
 - a) Pre-trip study
 - b) Observations during trip
 - c) Map and compass techniques

B. **Scrambling Techniques**

1. **Balanced Scrambling**
 - a) Weight over your feet
 - b) Learn to trust your boots
 - c) Rhythm, scramble smoothly
 - d) Three-point suspension--practice keeping hands below eye level
 - e) Test holds
2. **Climbing With Your Eyes**
 - a) Study the route from a distance and short-range
 - b) Judging Class 2 limit.
3. **Evaluating Rock Quality**
4. **Holds**
 - a) **Handholds:**

| | |
|-----------------|----------------------|
| . Down pressure | Arm/Finger/Hand jams |
| . Friction | . Cross pressure |
| . Nubbin | . Stemming |
| . Undercling | . Lay-back |
 - b) **Footholds:**

| | |
|------------|---------------|
| . Foot jam | . Toeing-in |
| . Edging | . Leaning out |
5. **Down Scrambling**
 - a) Easy, low-angle rock
 - b) Moderate rock
6. **Traversing**
 - a) Steep and narrow
 - b) Low angle
 - c) Very steep
7. **Slabs/Friction**
8. **Bouldering**
9. **Rope Use**
 1. Fixed rope/anchors
 2. Arm rappel

C. **Rock Fall**

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rock scrambling -- rock fall. Whether dislodged by yourself, a fellow scrambler, or by natural forces, if you see or hear a falling rock, you should **immediately shout** a loud warning, **"ROCK!"** Remember to repeatedly shout a warning, regardless of the possibility that someone may be below you.

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In addition to rockfall, exposure, ticks and heat are safety concerns on this field trip. Being in proper physical condition and being properly equipped is very important. The following areas will be addressed during this practice section:

1. Prevention
2. Avoiding falling rock
3. Group positioning

D. **Map and Compass** Time will be allotted to work with the map and compass. Students should practice ahead of time.