



Boy Scout Climbing Merit Badge Supplemental Information Booklet

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The Various Disciplines of Climbing

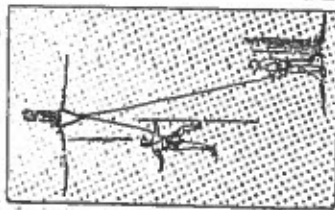
BOULDERING

- Low height climbing without a rope
- Climbing only as high as one is willing to jump back down
- Spotting or crashpads add safety



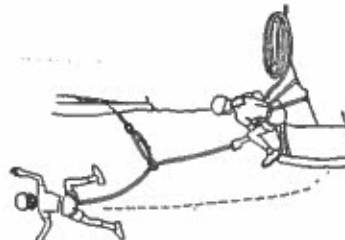
TOP-ROPING

- Belay anchor above the climber
- Typically set up in *zinghof* or *redirect* configuration (belayer positioned at the base)



TRADITIONAL (OR TRAD) LEAD CLIMBING

- Lead climbing (from the ground up), placing one's own temporary protection (nuts, cams, natural features); the second climber removes the gear
- Tends to follow natural lines (cracks, corners, etc.)
- Can be multi-pitch or multi-day



SPORT LEAD CLIMBING

Lead climbing (from the ground up) clipping quick-draws (double carabiner sets) into pre-placed bolt hangers for protection. Can be over blank faces where natural protection is not available, or where the rock is too soft to support nuts and cams.



9. Belaying. Do the following:

- Explain the importance of belaying climbers and rappellers and when it is necessary.
- Belay three different climbers ascending a rock face or climbing wall.
- Belay three different rappellers descending a rock face or climbing wall using a top rope.

10. Climbing. Do the following:

- Show the correct way to tie into a belay rope.
- Climb at least three different routes on a rock face or climbing wall, demonstrating good technique and using verbal signals with a belayer.

11. Rappelling. Do the following:

- Using a carabiner and a rappel device, secure your climbing harness to a rappel rope.
- Tie into a belay rope set up to protect rappellers.
- Rappel down three different rock faces or three rappel routes on a climbing wall. Use verbal signals to communicate with a belayer, and demonstrate good rappelling technique.

12. Demonstrate ways to store rope, hardware, and other gear used for climbing, rappelling, and belaying.

Scout's Name _____

Date _____

Approval _____

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- a. Climbers
- b. Rappellers

c. Belayers

d. Boulderers and their spotters

6. Rope. Do the following:

- a. Describe the kinds of rope acceptable for use in climbing and rappelling.
- b. Show how to examine a rope for signs of wear or damage.
- c. Discuss ways to prevent a rope from being damaged.
- d. Explain when and how a rope should be retired.
- e. Properly coil a rope.

7. Knots. Demonstrate the ability to tie each of the following knots. Give at least one example of how each knot is used in belaying, climbing, or rappelling.

- a. Figure eight on a bight
- b. Figure eight follow-through

c. Water knot

d. Double fisherman's knot (grapevine knot)

e. Safety knot

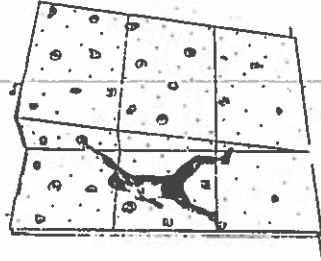
8. Harnesses. Correctly put on at least ONE of the following:

- a. Commercially made climbing harness
- b. Tied harness

Disciplines of Climbing (Cont.)

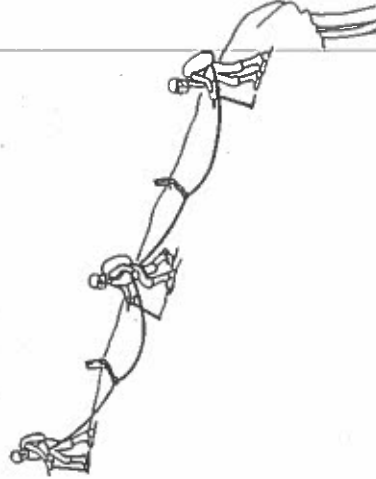
ARTIFICIAL CLIMBING

- Climbing on artificial surfaces (rock gyms, climbing towers, indoor walls)
- Tend to be top-rope belayed, but can include sport leading walls (pre-placed bolt hangers) or ropeless bouldering



MOUNTAINEERING

- Combination of techniques to ascend to a mountain summit
- Can include backpacking, rock climbing, ice climbing, snow and glacier travel, and aid climbing



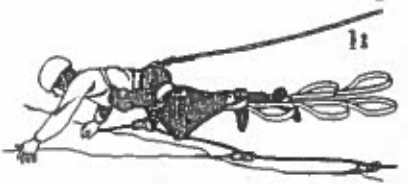
FREE SOLOING

- Climbing alone without the benefit of a belay rope or partner
- Accidents can be fatal



AID CLIMBING (CLASS VII)

- Climbing by placing artificial protection, and then standing and hanging in slings and carers
- Tends to be on steep overhanging rock or blank faces where free climbing (hand and foot to rock) is not possible



Types of Climbing Ropes:

- Static: low stretch, for fixed rope applications and long hangs (fixed rope ascents, rappelling, anchor building)
- Dynamic: high stretch/high shock absorption (top-roping, and lead climbing)

Climbing Rope Sizes

Lengths: usually 50m (165') or 60m (200')

Diameters:

- 7mm: haul line
- 8-10mm: lightweight (alpine) mountaineering, or used in pairs for technical rock climbing
- 10.2, 10.5, 11mm: single ropes for technical climbing

Rope Care: ropes have three enemies:

1. Physical abuse: sharp edges, rough surfaces, sustained exposure to weather extremes (sun, cold, moisture, snow)
2. UV Rays: prolonged exposure to direct sunlight
3. Chemicals: solvents, vehicle battery acid, carbide (caving headlamps), radiator coolant, etc.

Inspecting a rope:

1. Visually inspect the sheath for any wear-through in which the core is visible
2. Squeeze check the length for flat or mushy spots (internal rupture)
3. Curve check: work through the length holding it up to see if it maintains an even bend

Climbing Merit Badge Requirements

1. Do the following:

- a. Show that you know first aid for and how to prevent injuries or illnesses that could occur during climbing activities, including heat and cold reactions, dehydration, stopped breathing, sprains, abrasions, fractures, rope burns, blisters, snakebite, and insect bites or stings.
- b. Identify the conditions that must exist before performing CPR on a person.

2. Learn the Leave No Trace principles and Outdoor Code, and explain what they mean.

3. Present yourself properly dressed for belaying, climbing, and rappelling (i.e., appropriate clothing, footwear, and a helmet; rappellers and belayers must also wear gloves).

4. Location. Do the following:

- a. Explain how the difficulty of climbs is classified, and apply classifications to the rock faces or walls where you will demonstrate your climbing skills.

- b. Explain the following: top-rope climbing, lead climbing, and bouldering.

- c. Evaluate the safety of a particular climbing area. Consider weather, visibility, the condition of the climbing surface, and any other environmental hazards.

- d. Determine how to summon aid to the climbing area in case of an emergency.

5. Verbal signals. Explain the importance of using verbal signals during every climb and rappel, and while bouldering. With the help of the merit badge counselor or another Scout, demonstrate the verbal signals used by each of the following:

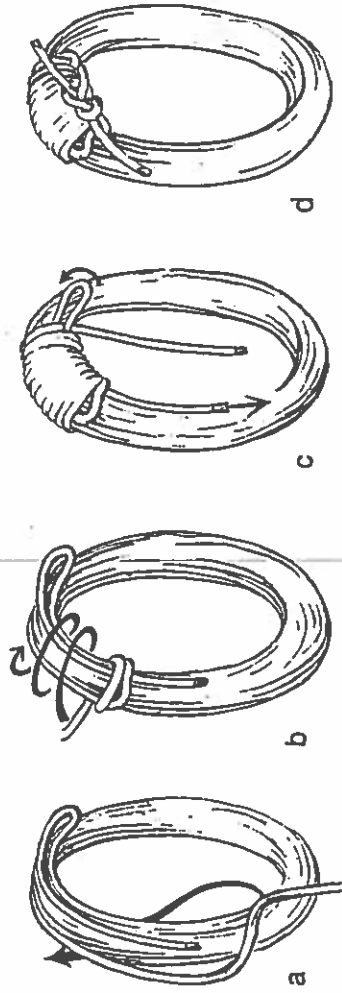
Belay signals:

- On belay Philbert – Belay on Otto
 - Climbing Philbert – Climb on Otto
 - Up Rope Philbert
 - Slack Philbert
 - Falling!
 - Dyno Philbert
 - Lock up Philbert
 - Lower me Philbert
 - Off belay Philbert – Belay off Otto
- Thank you Otto
- Locked here Philbert

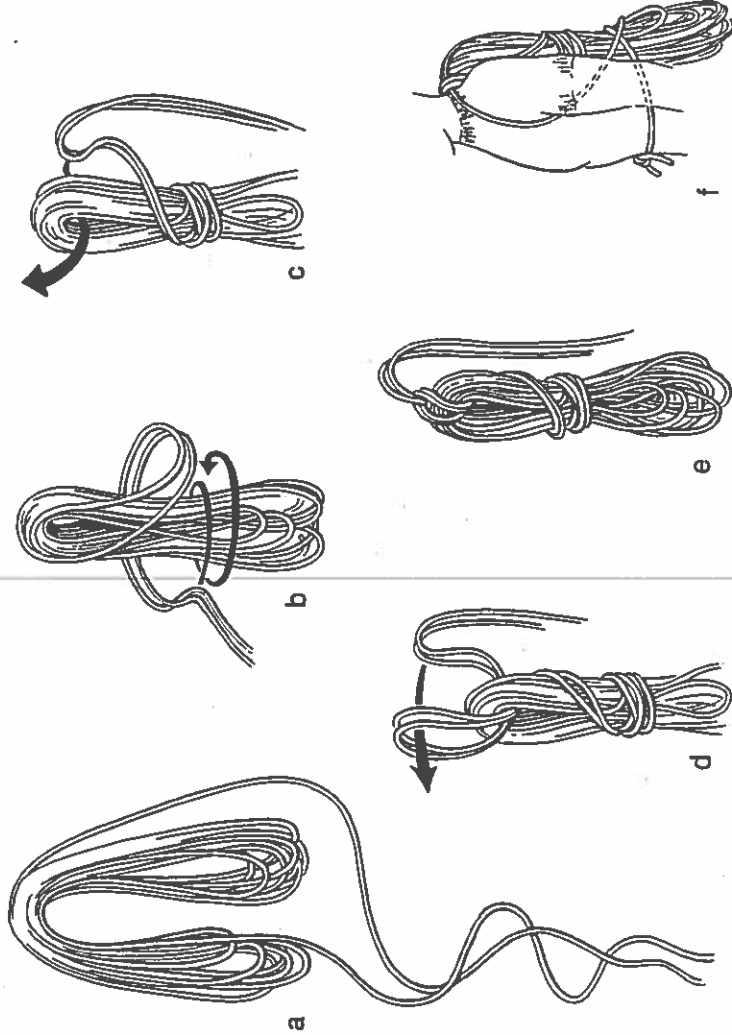
Terrain classification and climbing route difficulty:

Class 1:	Level walking
Class 2:	Trail terrain
Class 3:	Scrambling, using hands for balance occasionally
Class 4:	Unroped trail scrambling on steep terrain; hands essential
Class 5:	Technical rock climbing with a rope belay
5.0 – 5.3	Easy, featured, plentiful holds
5.4 - 5.7	Moderately challenging
5.8 – 5.9	Challenging
5.10 (a, b, c, d) – 5.12 (a, b, c, d)	Very difficult
5.13 (a, b, c, d) – 5.14 (a, b, c, d)	National class
5.15	The hardest in the world; steep and sustained
Class 6:	Aid climbing; hanging in slings; no longer hand to rock

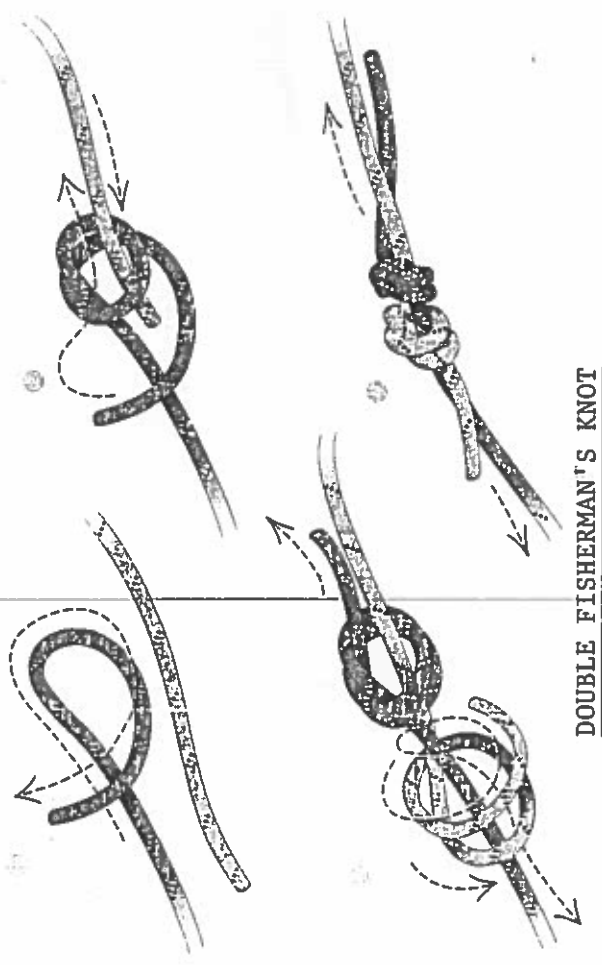
Coiling the Climbing Rope



Mountaineer's coil

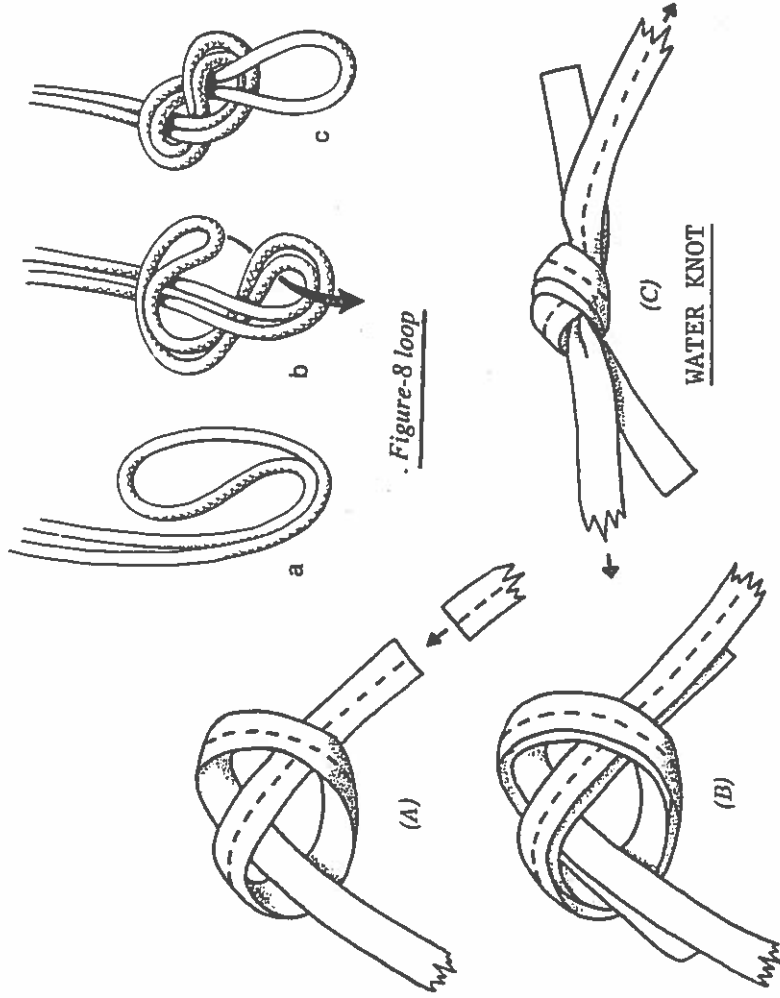


Butterfly coil



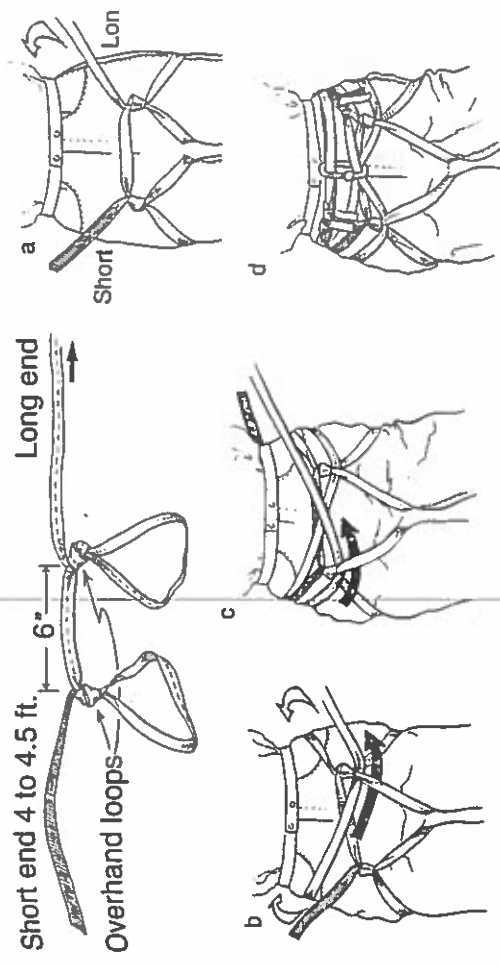
DOUBLE FISHERMAN'S KNOT

Figure-8 loop



WATER KNOT

FIGURE 8 RETRACE



Homemade seat harness