

National Cave Rescue Commission

Level 1 Student Preparation Guide

NCRC requires all students to demonstrate basic skills prior to participation. Level 1 students must be able to tie the knots listed below and demonstrate basic single rope techniques (SRT) competency.

Entrance Skills for Level 1 Students

Knots: Tie the following with 11 mm rescue rope unless otherwise noted:

- Figure Eight on a Bight
- Figure Eight Follow Through
- Double Figure Eight Knot
- Bowline with safety (Yosemite acceptable)
- Münter Hitch
- Butterfly Knot
- Clove Hitch with safety
- Trucker's Hitch
- Ring Bend (Water Knot) in webbing
- Double Overhand Bend (Double Fisherman's Knot, Barrel) in 8mm cord
- Prusik Hitch (3 wrap) in 8 mm cord on rescue rope

Personal Vertical System and SRT:

Starting with gear in pack, ascend 10 meters, change over to rappel, descend, change back to ascent, down-climb. 25 minutes

Level One Students who fail entry skills testing will be offered retraining and allowed repeated retests within the timeframe allotted to entry testing.

**Instructors are available to help you prepare for the seminar.
Please contact us with any questions about Knots and SRT or entry testing.**

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Don't forget the optional SRT and Knot Tying workshops Friday, June 12, 7-10 pm.

NCRC Seminar, Required Personal Equipment

Personal equipment must be in safe, usable condition and marked to identify the owner. Equipment deemed unsafe or unacceptable during check-in must be replaced prior to the student's continued participation in the course.

CLIMBING HELMET

UIAA or CE approved mountaineering style helmet with three (or more) point suspension, and non-elastic chinstrap

THREE SOURCES OF LIGHT

All capable of allowing you to exit the cave. At least two should be electric and two helmet-mountable.

BOOTS

Sturdy, rubber soled

RUGGED CLOTHING

SIX LOCKING CARABINERS

Independent of your ascending or descending systems

DESCENT DEVICE

Any of the following types of devices are acceptable:

1. standard rack
2. four-bar Micro rack with a hyper-bar (4 bars total)
3. bobbin with safety carabiner (*Bobbin is a generic term for devices like the Petzl Stop. You can use any of the commercially available brands/models.*)
4. "Rescue Eight" with ears

SEWN SEAT HARNESS

ASCENDING SYSTEM

Complete working system with at least two points of gripping attachment to the seat harness

1. An additional ascender or prusik must be available for crossing knots, etc.
2. One of the system's ascenders must be functional as a Quick Attachment Safety (QAS)
3. Frog system must have a link (e.g., long cowstail) from their upper ascender to their harness

Note: we strongly encourage use of a caving ascending system that employs mechanical ascenders. Frog, Mitchell, Texas, and Rope Walker systems are common examples. While you might be able to get by with an improvised system, a well-tuned caving system will be better suited to seminar activities. Examples of these systems are illustrated in pages 6 and 7, and can be purchased from numerous caving equipment vendors.

GLOVES

Must have leather palms and full fingers

WATER BOTTLES

Two quarts recommended

SMALL, PERSONAL FIRST AID KIT

Optional, but recommended

SMALL, HEAVY-DUTY PACK

Used to carry personal gear around underground

2 – 20 FT PIECES OF 1-INCH TUBULAR WEBBING

WET SUIT & PERSONAL FLOATATION DEVICE (*Required for Level 3 only*)

Practicing for NCRC Entry Testing

For each skill, criteria state performance expectations, outline the core components, and provide evaluation standards. ***Read the criteria carefully.*** Illustrations of knots, vertical systems, and rigging components are included in this package. Reproducing these examples should work for you, however *any safe and functional technique that meets all of the criteria is acceptable.* Simple solutions are encouraged.

Using the Criteria and Score Sheets.

Each component is evaluated for safety, effectiveness and efficiency, then scored 2, 1 or 0.

2 (If there are multiple criteria, all must be met to earn a 2)
Safe & Efficient

1
Safe & Functional (some examples of inefficiency are listed, others may apply)

0 (If there are multiple criteria, any scores zero)
Unsafe or Not Functional – any zero represents a critical failure or safety problem.

You may find it helpful to make copies of the practice score sheet to evaluate your preparation.

Knot Tying Criteria

Level 1 candidates must score at least 11 of 22, with no zero in any category.

Level 1 candidates may have repeated attempts within the allotted time.

Tie the following with 11 mm rescue rope unless otherwise noted.

Figure Eight on a Bight
Figure Eight Follow Through
Double Figure Eight Knot
Bowline with safety (Yosemite tie off acceptable)
Münter Hitch
Butterfly Knot
Clove Hitch with safety
Trucker's Hitch
Water Knot (Ring Bend) in webbing
Double Fisherman's Knot (Double Overhand Bend) in 8mm cord
Prusik Hitch (3 wrap) in 8 mm cord on rescue rope

Acceptable safety knots include: overhand, two half hitches, half a double fisherman's

Knots

2 (both must apply)

Knot tied correctly and dressed, with at least 4" of tail and bights smaller than 4";

Safety, if required, is secure, dressed and correctly oriented

1

Knot not dressed; Bights are larger than 4";

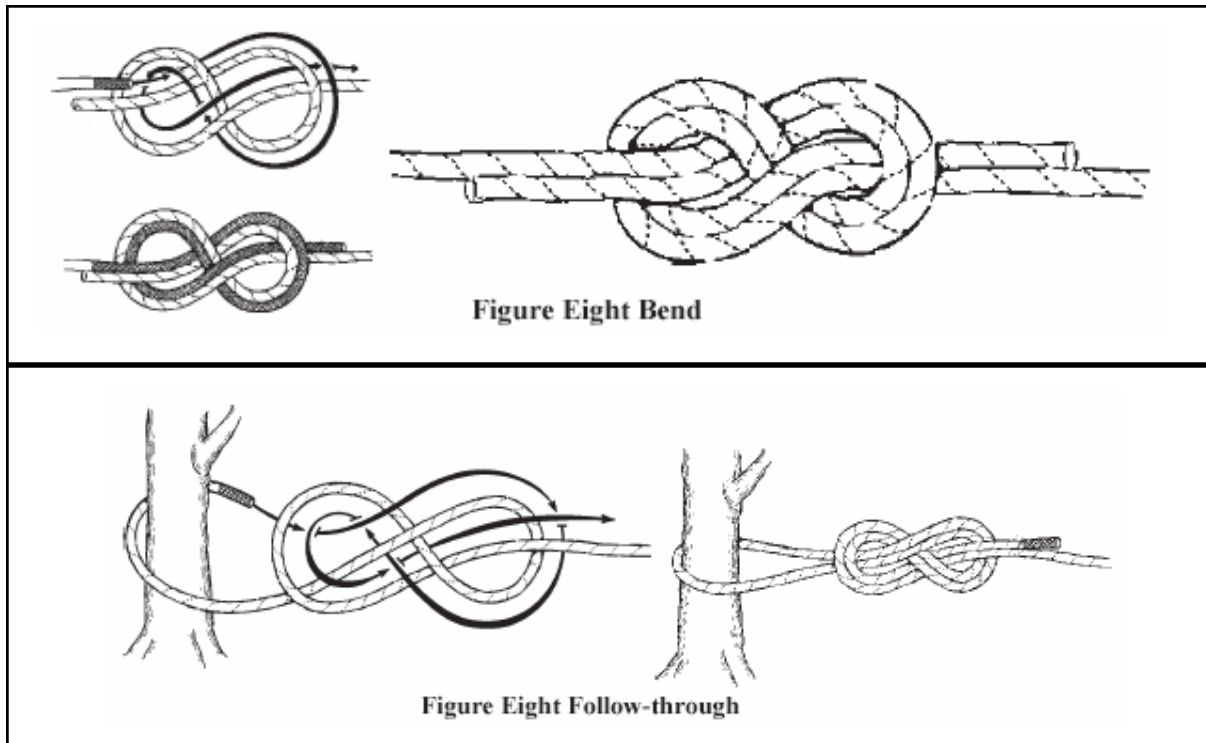
Required safety would allow slippage before engaging or is inappropriately oriented

0 (either scores zero)

Knot or safety is tied incorrectly; Tails are less than 4";

Required safety is insecure or absent

Knots

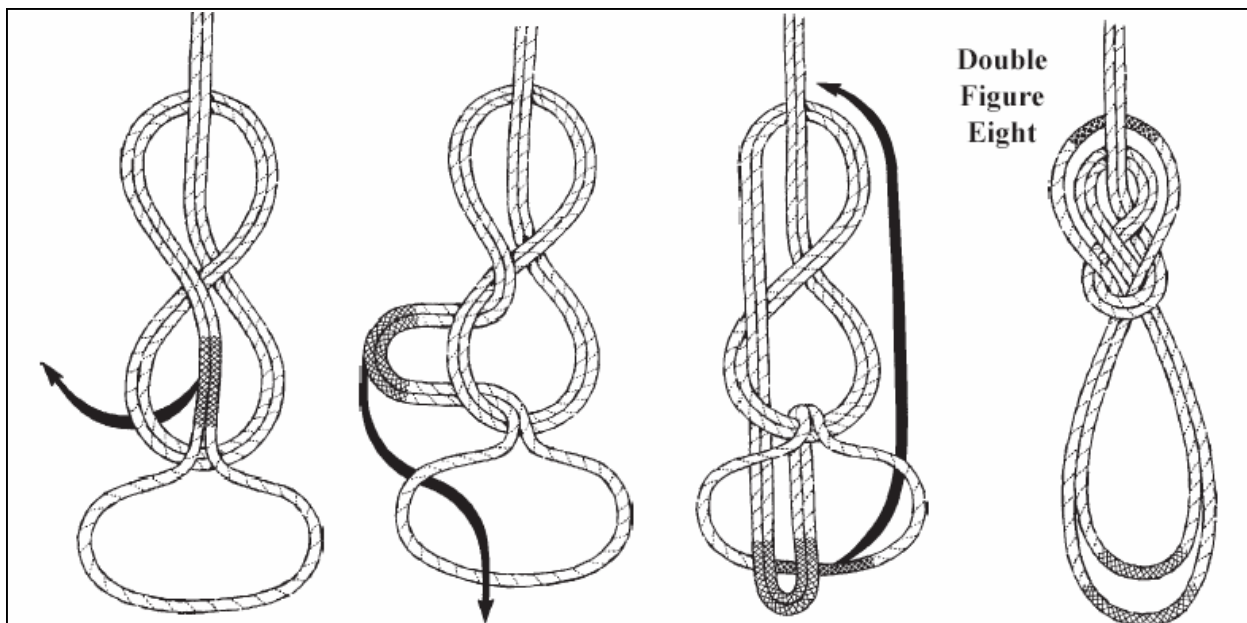


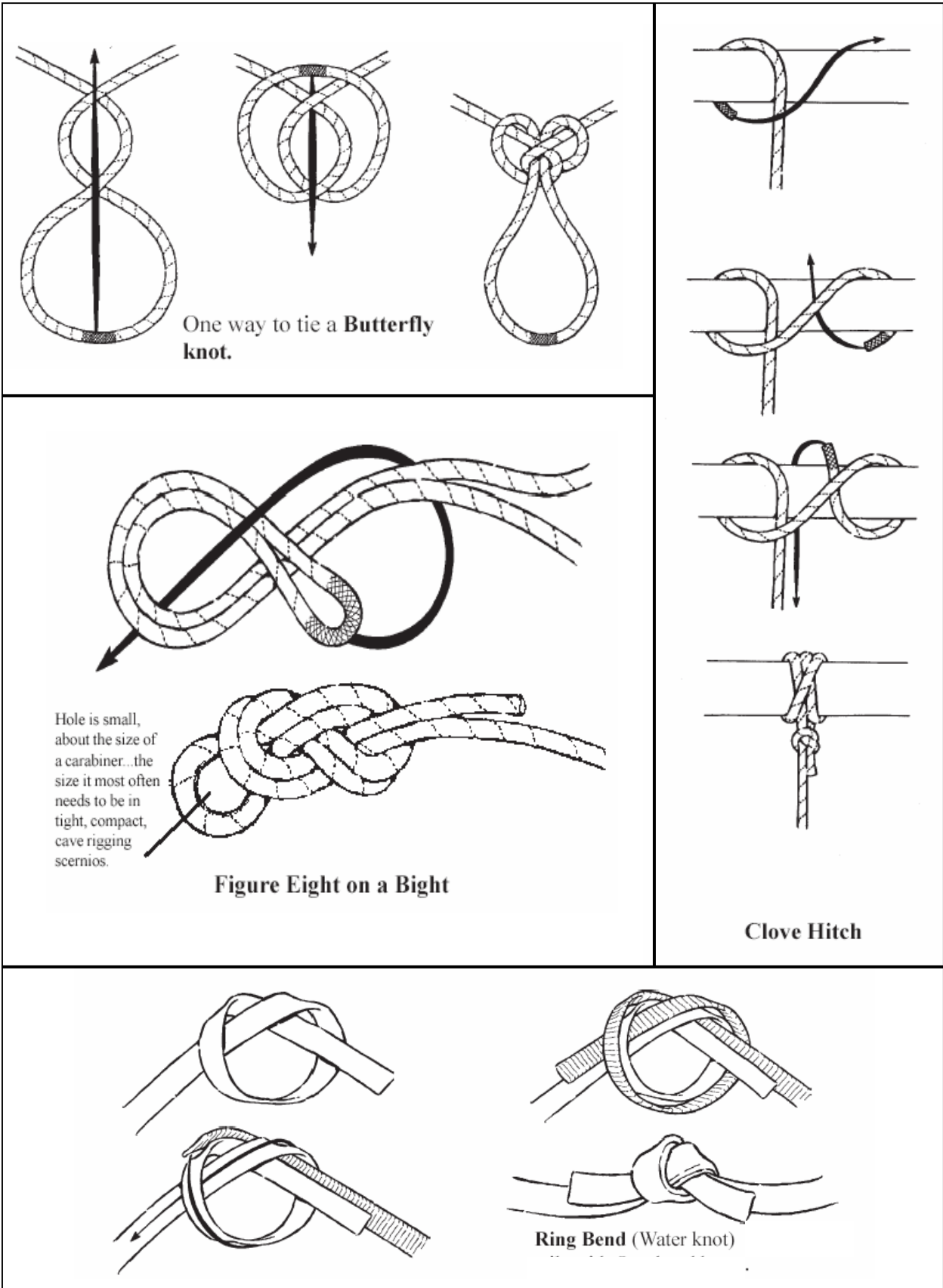
Knots – The test is not timed, but you should be able to tie all in less than 30 minutes.

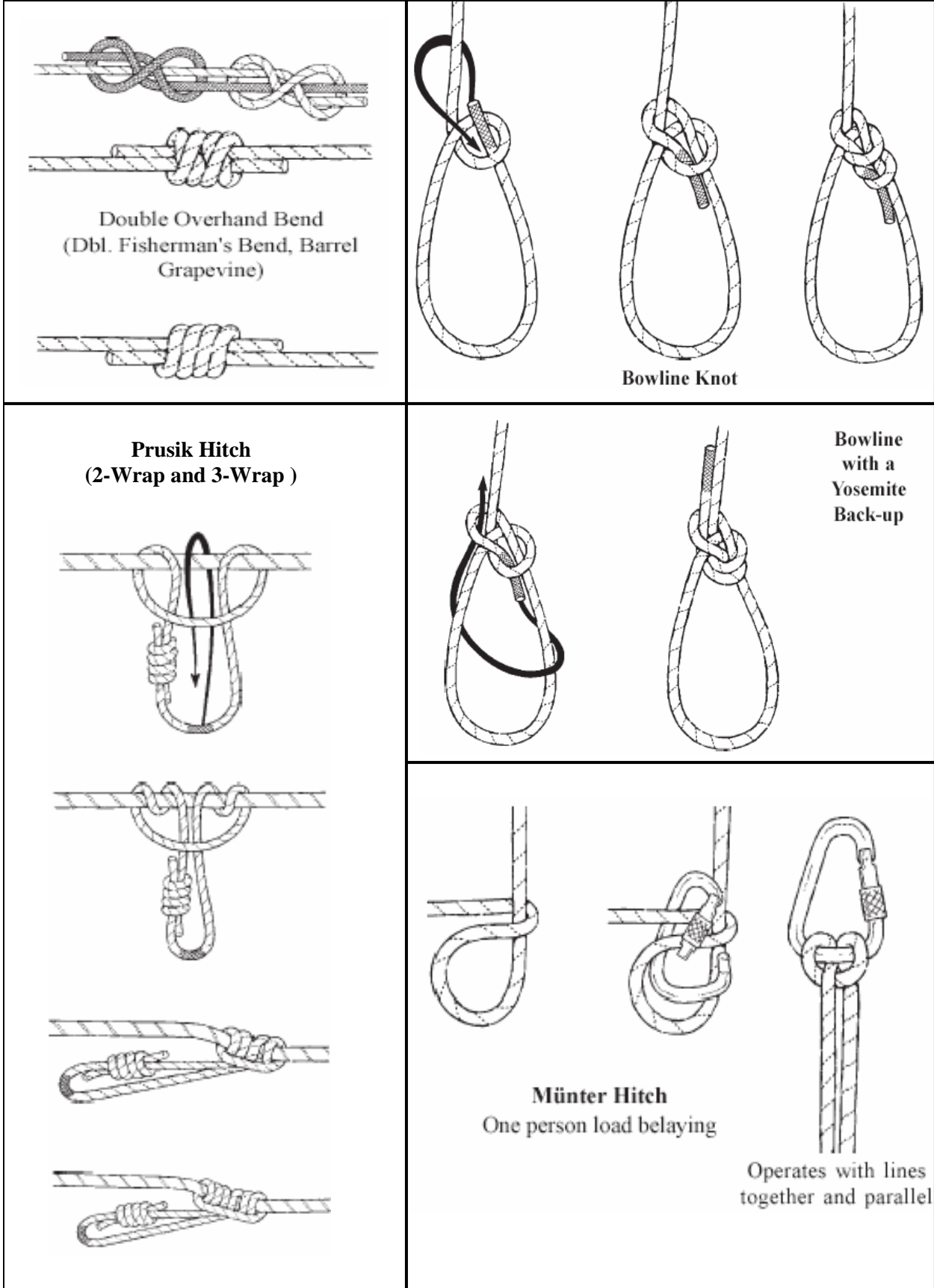
To earn the maximum score, knots must be properly dressed.

Bowlines and Clove hitches, which could slip or capsize, require safeties.

Any trucker's hitch will do, it needn't include carabiners, multiple wraps, etc.







Personal Vertical System and SRT Criteria

Ascend 10 meters, change over to rappel, descend, change to ascend, down-climb.

Begin with gear in pack; on rappel demonstrate a hard lock off. 25 minutes maximum

Level 1 candidates must score at least 9 of 18 with no 0 in any category.

Within the timeframe, L1 candidates will be allowed repeated attempts after retraining.

System

2 (all must apply)

Student independently assembles and dons a safe, efficient system:

System has 2 gripping points of attachment connected to the seat harness;

Includes a QAS: mechanical ascender, attached to seat harness, that can be manipulated with one hand;

Includes a device that allows the student to maintain of 2 points of attachment during weight transfers;

Descender is from the recommended list OR student demonstrates his ability to control a 2-person load

1

System is poorly sized, configured or adjusted;

System includes excessively redundant or unnecessary equipment

0 (any scores 0)

Student is unable to assemble and don system independently;

System does not meet all of the above specifications;

System is not safe: (ie. Buckles not secure, connectors unlocked, substandard hardware, overly worn or damaged or software, knots mis-tied, grossly ill-fitting, etc.)

Ascending

2 (all must apply)

Ascends safely and efficiently;

Maintains two gripping points of attachment to the seat harness during ascent;

Manages bottom tension without assistance;

1

Requires assistance to manage bottom tension;

System adjustment is off to the degree that it hinders ascent;

System is fitted, but technique requires undue effort

0 (either scores 0)

System does not maintain 2 gripping attachments to the seat harness during ascent;

System does not function practically

Change Over Ascend to Rappel

2 (both must apply)

Safely and efficiently changes from ascending to rappelling equipment;

Maintains 2 points of attachment until descender is loaded and unlocked

1

Takes more than 1 attempt to off-weight ascender;

Unintentionally weights secondary attachment point

0 (either scores 0)

Fails to demonstrate control of unlocked descender before committing to a single point of attachment;

Fails to transfer weight from ascenders to descender without assistance

Rappel

2 (both must apply)

Rappels in a controlled manner;

Firmly and securely locks and unlocks descender

1

Descender creeps more than 4 inches when loaded

0 (either scores 0)

Fails to maintain control of descent;

Does not demonstrate a hard lock off

SRT Criteria—Continued

Change from Rappelling to Ascent

2

Safely and efficiently changes from rappelling to ascending equipment;

1

Mis-positions ascenders;

Takes more than 1 attempt to off-weight descender;

Entangles rappelling and ascending equipment

0 (either scores 0)

Commits to a single point of attachment during weight transfer;

Fails to transfer weight from descender to ascenders without assistance

Down-Climb

2

Down climbs safely and efficiently

1

Opens ascenders while down climbing;

Unintentionally weights safety strap;

Mis-positions upper ascender more than 1 time

0 (either scores 0)

Commits to a single point of attachment during weight transfer;

Is unable to down climb without assistance

Personal Protective Equipment

2 (all must apply)

Wears helmet at all times in the fall zone and on rope;

Wears gloves while handling moving rope

1

Personal protective equipment interferes with efficient SRT

0

Fails to wear helmet, or gloves as specified above

Safety

2 (both must apply)

Leaves the fall zone when possible

Does not drop anything

1

Remains in the fall zone unnecessarily

Drops something, but warns "Rock"

0

Drops anything while on rope without saying "Rock"

Time Limit

2

Completes exercise from gear in pack to off rope in less than 8 minutes

1

Completes exercise in 8-25 minutes

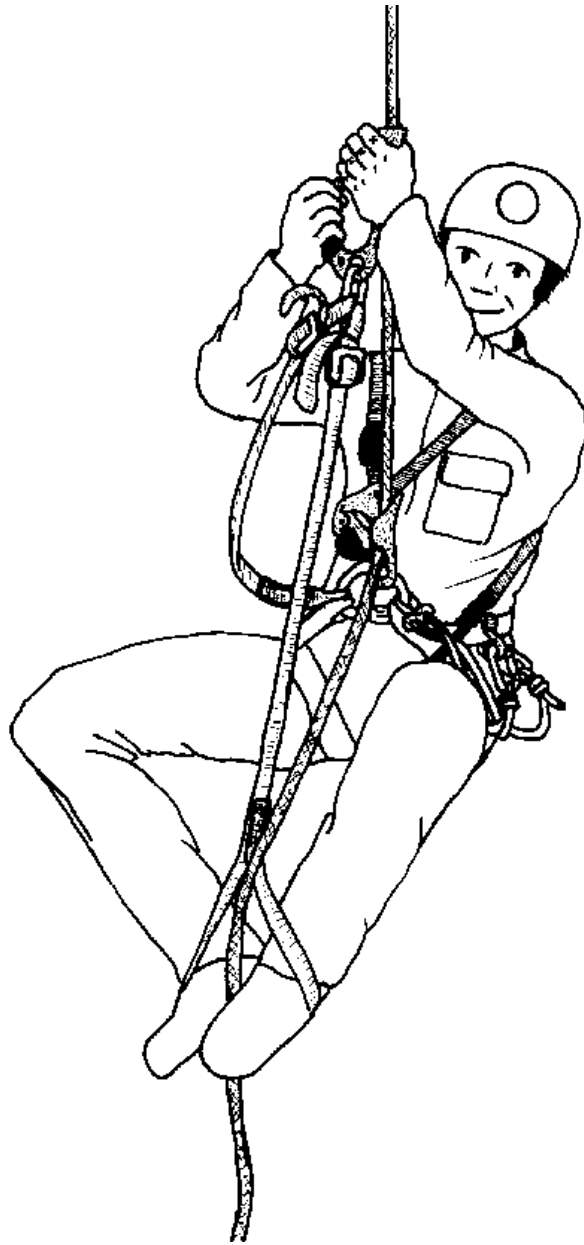
0

Takes longer than 25 minutes

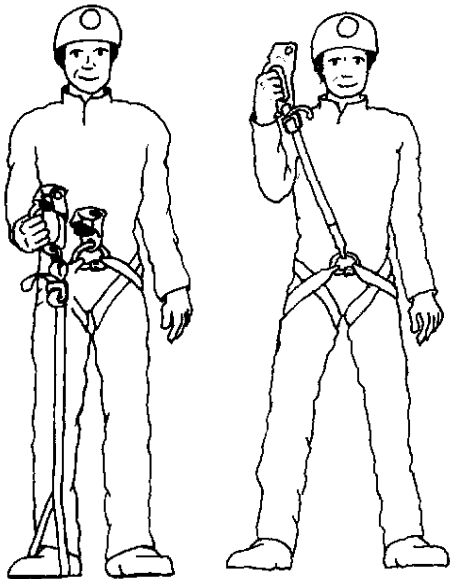
Frog System



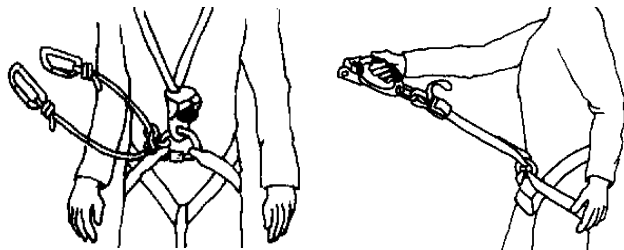
A chest ascender attached to the seat harness is held up with a chest harness.



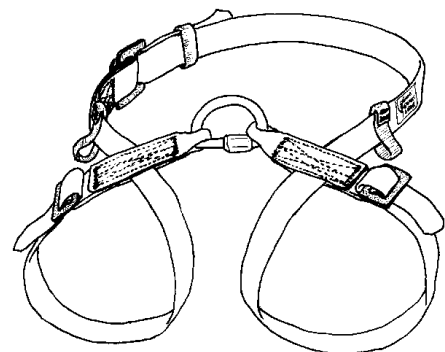
A low-attach caving seat harness is recommended .

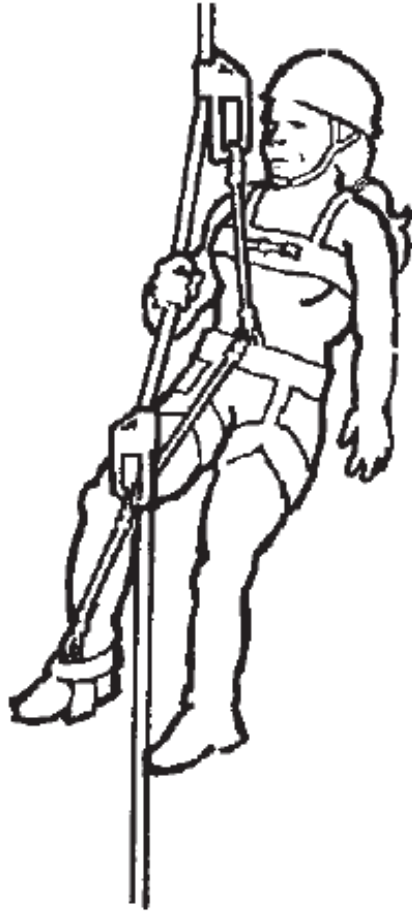


An upper ascender has a footloop and is attached to the seat harness with a safety strap.

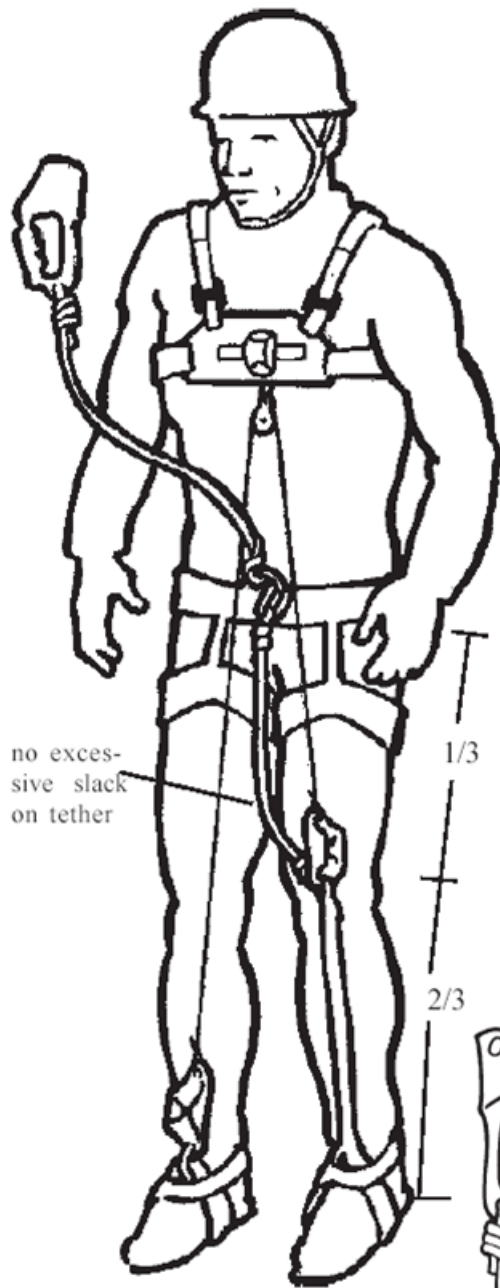


Cowstails and an extra prusik, or an additional ascender are required for the seminar.





Texas Climbing System



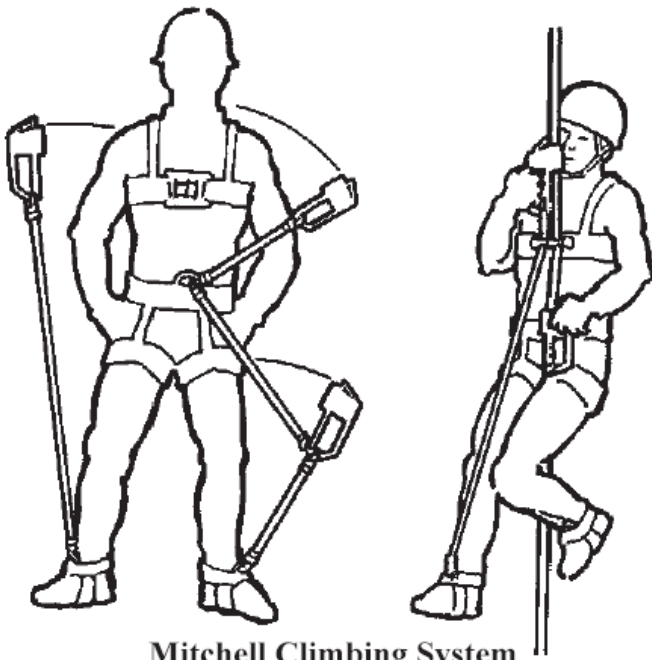
no excessive slack on tether

1/3

2/3

Double Bungee Climbing System

You will need a Quick Attachment Safety (QAS) for numerous applications.



Mitchell Climbing System

Practice Score Sheet**Knots**

2	1	0	Time	Start _____	Finish _____	Total _____
2	1	0	Figure 8 Bight			
2	1	0	8 Follow through			
2	1	0	Double Loop 8			
2	1	0	Butterfly			
2	1	0	Munter Hitch			
2	1	0	Bowline w/safety knot			
2	1	0	Trucker's Hitch			
2	1	0	Prusik Hitch			
2	1	0	Clove Hitch w/safety knot			
2	1	0	Water Knot			
2	1	0	Double Fisherman's Knot			

Vertical & SRT

2	1	0	Time	Start _____	Finish _____	Total _____
2	1	0	System			
2	1	0	Ascending			
2	1	0	Change Over Ascent to Rappel			
2	1	0	Rappel			
2	1	0	Change Rappel to Ascend			
2	1	0	Down-Climb			
2	1	0	PPE			
2	1	0	Safety			