



© Association for Canyoneering Education - Master Skills List

I. Essentials

- A. Gear: properties, strength
- B. Communication
 - 1. Verbal
 - 2. Whistle
 - 3. Hand
- C. Canyon Rating System
- D. Courtesy
- E. Ethics
 - 1. Community
 - 2. LNT
 - 3. Legal
- F. Weather
 - 1. Sources
 - 2. Forecast, radar maps
 - 3. Cloud types
 - 4. Pressure systems, fronts
 - 5. Altimeters
 - 6. Flash floods
- G. Navigation
 - 1. Topo Maps, legend, symbols, features
 - 2. Declination, true north, magnetic north
 - 3. Orienting map, micro navigation, terrain recognition
 - 4. Estimate time and distance
 - 5. Latitude/longitude & UTM
 - 6. Basic GPS
- H. Travel on Rock
 - 1. Stemming
 - 2. Bridging
 - 3. Modeling
 - 4. Spotting
- I. Water
 - 1. Crossings
 - 2. Swim positions, ferry angles
 - 3. Hydraulics, eddies, current
 - 4. Jumping, sliding
 - 5. Strainers, foot entrapments
 - 6. Wet disconnects, rope management, pack management

II. Knots, Bends, Hitches

- A. Terminology, parts, definitions
- B. Knots: overhand, overhand on bight, double overhand, figure eight, eight on a bight, alpine butterfly, bowtie frost, stopper
- C. Bends: water knot/ring bend, overhand/EDK, rethreaded figure eight, double fisherman, square fisherman
- D. Hitches: girth, clove, heddon or kleimheist, bachman, prusik, french braid, auto block, munter, mule, valdotain tresse

III. Rope Management

- A. Care/properties
- B. Flake/inspect
- C. Bag
- D. Alpine, Lap/Butterfly coils
- E. Measurement
- F. Deployment

IV. On Rope Skills

- A. Pre-rappel, mid-rappel friction
- B. Single strand, double strand
- C. Lock offs
- D. Hard/soft start
- E. Overhang, free hang
- F. Strand separator
- G. Appropriate & improvised rappel devices
- H. Self-belay
- I. Self-rescue
- J. Ascending
 - 1. Non-mechanical
 - 2. Mechanical
 - 3. Single rope grab
 - 4. Changeovers
 - 5. Knot passing
 - 6. Passing moderate lips
 - 7. Passing overhangs

V. Anchors

- A. Definitions: bomber, marginal, DEAR, EARNEST
- B. Natural: BFR, BFT, cairn, chock, deadman
- C. Artificial: bolts, pitons
- D. Transient: pack, sand bags, sandtrap
- E. Releasable/retrievable: sling-n-rings, macrame, fiddlestick
- F. Meat, counterweight/simul
- G. Single point, multi-point

VI. Rigging

- A. Modified toss-n-go
- B. Static blocks
- C. Contingency block
- D. Strand isolation
- E. Dual contingency
- F. Setting rope length

VII. Leadership

- A. Safety
 - 1. Safety checks
 - 2. Belays
 - a) *Direct top*
 - b) *Indirect top*
 - c) *Bottom*
 - d) *Bottom on 300'+*
 - 3. Handlines
- B. Dangers: Flora, Fauna, Terrain
- C. Safety talk
- D. Group dynamics, people management
- E. Group health: dehydration, heat exhaustion, hypothermia
- F. Team gear
- G. Improvised gear
- H. Sequencing, LAMAR
- I. Efficiency
- J. Edge protection
 - 1. Static (x2)
 - 2. Dynamic
- K. Courtesy Rappels
 - 1. Static
 - 2. Dynamic
- L. Lowering Systems

VIII. Advanced Rope Skills

- A. Retrievable hand line/traverse
- B. Re-belay
- C. Deviation/redirect
- D. Multi-pitch
- E. Guided rappel
- F. Tagline

IX. Pothole Escapes

- A. Partner capture
- B. Partner assist
- C. Counterweights, sequence
- D. Hooking/Aiding
- E. 2:1 Raise

X. Rescue

- A. Mechanical advantage
 - 1. Simple
 - 2. Compound
 - 3. Complex
 - 4. Progress capture methods
 - 5. Load releasing systems
- B. Conversions
 - 1. Static to lower
 - 2. Static to haul
 - 3. Cut and lower
 - 4. Contingency to haul
- C. Patient movement
 - 1. Assisted rappel
 - 2. Assisted team lower
 - 3. Hero/balancier
 - 4. Rappel on tensioned rope
 - 5. Pick-off