

BOY SCOUTS OF AMERICA
MERIT BADGE SERIES

CLIMBING



BOY SCOUTS  OF AMERICA®

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:
 - 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

9. **Belaying.** Do the following:
 - a. Explain the importance of belaying climbers and rappellers and when it is necessary.
 - b. Belay three different climbers ascending a rock face or climbing wall.
 - c. Belay three different rappellers descending a rock face or climbing wall using a top rope.
10. **Climbing.**
 - a. Show the correct way to directly tie into a belay rope.
 - b. 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.**
 - a. Using a carabiner and a rappel device, secure your climbing harness to a rappel rope.
 - b. Tie into a belay rope set up to protect rappellers.
 - c. 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.

Risk Management and First Aid

Climbing and rappelling, when properly done, are as safe as most other Scouting adventure activities. Like most other Scouting activities, there are certain risks to be managed with careful planning, attention to safety issues, and being prepared to respond well should an injury or illness occur. Even short falls can lead to minor bruises or skinned knuckles and knees. Though rare, a longer fall can result in sprains, abrasions, or fractures.

Responding to Emergencies

Before beginning a climb, your group should work out an emergency response plan that includes information about the location of the nearest telephone and the telephone numbers of the closest hospital, sheriff's department, and rescue unit. In many areas of the country, dialing 911 contacts all three.

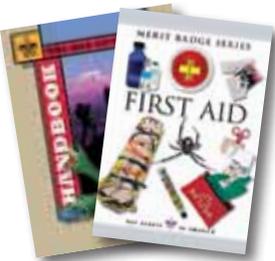
Cardiopulmonary Resuscitation

Cardiopulmonary resuscitation—CPR—is an important first response in the event of a cardiac emergency. It is used only for extreme emergencies—when the person has no pulse, indicating that the heart has stopped beating. CPR includes both chest compressions and rescue breathing (mouth-to-mouth resuscitation).

When climbing at rock sites in the backcountry, you will be away from immediate emergency assistance, and response times for emergency services might be delayed. It is a good idea to be prepared by becoming trained in wilderness first aid. The American Red Cross offers a class called Wilderness First Aid Basics, a 16-hour course that will equip you with the necessary skills to care for an injured person for an extended period until help arrives.

As a climber, you will follow many of the same risk management guidelines that you would for any Scout hike or camping trip.

The *Boy Scout Handbook* and *First Aid* merit badge pamphlet explain how to identify the conditions that must exist before performing CPR on a person.



These books also discuss first aid in more detail.

CPR courses are designed to teach rescuers how to recognize life-threatening conditions and respond appropriately. Check with the American Red Cross, the National Safety Council, the American Heart Association, and other similar organizations in your area to find out if they offer CPR and other first-aid training. Every BSA climbing or rappelling activity should include at least one person on-site who is trained and certified in CPR. You need to know CPR before you have to use it.

First Aid

While climbers prepare by keeping fit and planning ahead, first-aid situations sometimes will arise. Always have a well-equipped first-aid kit at hand, both while climbing and while traveling to and from the site. All climbers should be prepared to take action. Instructors at climbing and rappelling areas at Scout camps should be trained to respond quickly to emergencies. At indoor climbing gyms, the staff will take the lead in treating injuries and contacting help.

Heat Reactions

Heat reactions, including heat exhaustion and heatstroke, result when the body cannot keep itself cool enough. If someone feels dizzy, faint, nauseated, or weak; develops a headache or muscle cramps; or looks pale and is sweating heavily, treat for **heat exhaustion**. Have the person lie down in a cool, shady spot with the feet raised. Loosen clothing and cool the person with a damp cloth and fan. Have the victim sip water slowly. Recovery should be rapid. If the condition worsens or does not improve, get medical help.

Heatstroke occurs when the body's heat-control system shuts down, causing the victim's temperature to rise to life-threatening levels. The skin may be wet or dry but always will be flushed and hot. The pulse is extremely rapid, and the person will be disoriented or unconscious. Cool the victim immediately through immersion or with cold packs. When the victim is able to drink, give all the water wanted. Treat for shock and seek medical attention immediately.

To prevent the familiar condition called **sunburn**, use a sunscreen with a sun protection factor (SPF) of at least 15 and limit your exposure time. Apply sunscreen liberally before exposure (don't forget your ears and the back of your neck), and reapply often if you are sweating. If your skin begins to redden or if you feel discomfort, seek shade. Treat painful sunburn with damp cloths. Remedies containing aloe vera also might provide some relief. Protect your lips by applying a lip balm with an SPF of at least 15. To protect your eyes, wear sunglasses.

Cold Reactions

Hypothermia occurs when a climber becomes so cold that he can no longer keep warm. As the core temperature drops, vital organs shut down. In extreme cases, death may result. Hypothermia can sneak up on a climber gradually, especially on a chilly, windy day. Since hypothermia impairs the ability to think clearly, the victim may not realize the danger and may not be able to save himself. Prevent hypothermia by staying warm and dry, taking breaks, and eating plenty of energy foods.

A victim who shows early symptoms of hypothermia will feel cold, tired, and irritable. The victim's teeth may chatter, and the person may begin to shiver. As the condition worsens, the victim begins to shiver uncontrollably and gets increasingly confused. In advanced stages, the victim is disoriented, cannot travel, and may collapse; the shivering stops, followed by unconsciousness. Death may soon follow.

Take action to rewarm anyone who shows signs of hypothermia and prevent further heat loss. Move the victim to a shelter and wrap the person in a blanket or sleeping bag (remove wet clothing) until body temperature warms to normal. For additional warmth, keep the head covered. Give the victim hot drinks if available (no caffeine or alcohol) and only if the victim is alert enough to drink.

In severe cases you must actively warm the victim. Get the person under shelter and into a sleeping bag. If possible, zip two sleeping bags together. Crawl into the bag with your companion and strip the clothing from both of you; this effort will help generate body heat. The skin-to-skin contact also will warm the victim and perhaps save a life.

Cold winter weather, especially if it is windy, brings with it the danger of **frostbite**. Essentially, a part of the body becomes frozen. The flesh becomes numb, though sometimes the victim

A frightened or anxious victim might breathe too rapidly or too deeply, which can result in hyperventilation. Calmly encourage the person to relax and breathe slowly.

Dehydration

Dehydration, caused by lack of water in the body, can occur in cold or warm weather—anytime a person is sweating profusely and/or not drinking enough liquids. Avoid dehydration by drinking plenty of fluids and eating enough throughout the day to keep your body well-balanced. If you become weary or develop a headache or body aches, or if you become confused, rest in the shade and sip water until the symptoms subside.

Climbers who have severe allergic reactions to wasp, hornet, or bee stings should carry a field treatment kit with them on all outings, and their companions should be familiar with its use.

may not notice. If the freezing continues, the area will stiffen and become grayish-white in color. To treat the victim, *thaw the affected area only if there is no risk of refreezing. Once warmed, keep the affected area warm. Do not rub the area with snow.* In the field, use body heat. Put cold fingers under the armpit and the warm palm of your hand on frostbitten nose, ears, or cheeks. In a shelter, if possible, put cold feet on a companion's bare belly, or immerse the affected area in lukewarm water—no warmer than 108 degrees. If blisters develop, apply a large sterile dressing. Treat the victim for shock and immediately seek medical attention.

Other Possible Climbing-Related Injuries

Rope burns, or friction burns, can occur when climbers allow rope to slide too quickly through their hands or when any part of the body comes in contact with a fast-moving rope. A rope burn is characterized by raw, red skin and sometimes blistering. The best protection against rope burns is, of course, to wear climbing gloves, but if a burn does occur, clean the area with mild soap and water to help prevent infection.

For typical **stings and bites**, carefully scrape away the stinger with the edge of a knife blade. Don't try to squeeze it out—that will force more venom into the skin from the sac attached to the stinger. An ice pack might reduce pain and swelling. If you have 0.5 percent hydrocortisone cream, apply it to help soothe insect stings and bites. For severe and prolonged pain, or for any severe reaction, dizziness, or respiratory distress, get medical help.

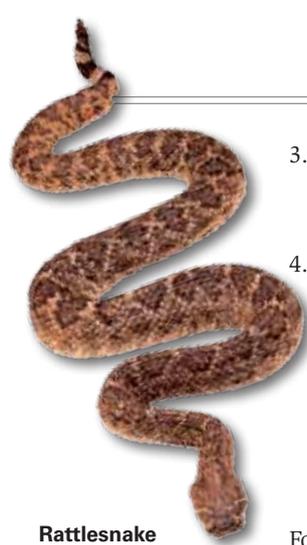
Tick bites are common maladies in the outdoors. If a tick has attached itself, grasp it with tweezers close to the skin and gently pull until it comes loose. Don't squeeze, twist, or jerk the tick, as that might leave its mouthparts in the skin. Wash the wound with soap and water; apply antibiotic ointment. Dispose of the tick and thoroughly wash your hands. (Always avoid direct contact with a tick because disease can be transmitted by finger contact.) If a tick has been embedded more than a day or poses difficulties in removal, see a physician.



As you climb, look out for snakes—watch where you put your hands.

Snakebite is rare and seldom fatal. Snakes generally try to avoid humans and normally strike only when they sense danger. The bite of a nonpoisonous snake requires only ordinary first aid for small wounds—scrubbing with soap and water, then treating with an antiseptic. However, the bite of a poisonous snake can cause sharp, burning pain, swelling, and discoloration. Follow these steps.

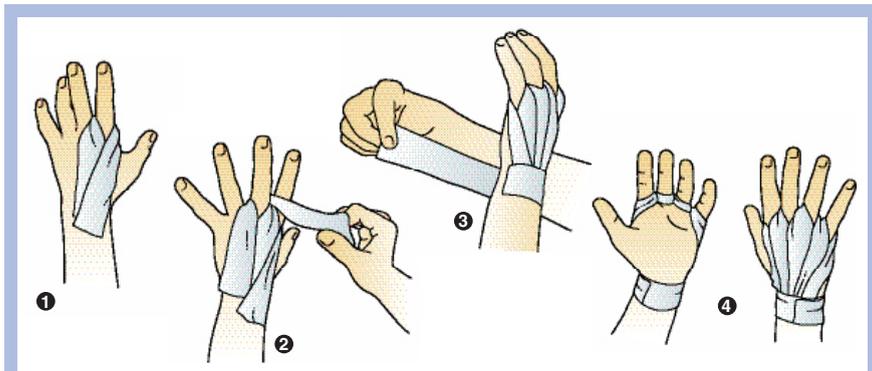
1. Seek medical care for the victim as soon as possible.
2. Remove rings and other jewelry that might cause problems should the area around the wound swell.



Rattlesnake

3. Have the victim lie down and keep still; help the patient stay calm to help slow the spread of the venom. Position the wound area lower than the rest of the body.
4. If medical help will be delayed, put a broad, constricting band (strip of cloth, belt, or neckerchief at least 1 inch wide) around the limb, 2 to 4 inches above the bite (between the heart and the bite), to slow the spread of venom. This is *not* a tourniquet; make the band snug but loose enough to slip a finger under easily. Periodically check for pulse on both sides of the band; do not cut off blood circulation entirely. Do not use a band around fingers, toes, head, neck, or trunk. Splint the area as for a fracture.

For **abrasions** (cuts and scrapes), clean, disinfect, and cover the wound. Any basic first-aid kit should provide for minor wound treatment. **Blisters** form when skin is irritated, usually by friction or heat. A **hot spot** signals the beginning of a blister. Stop immediately and protect the tender area by covering the hot spot with a piece of moleskin or molefoam. If a blister forms, build up several layers of moleskin or molefoam, as needed, to take off the pressure. Blisters are best left unbroken. Treat a broken blister as you would a minor cut or abrasion.



Even climbers with perfect technique can suffer scrapes and cuts. Wrapping the hands with cloth tape (athletic or coach's tape) can give some protection. Your climbing instructor can show you how to tape your fingers and hands. Here, the back of the hand and knuckles are protected, while the palm is mostly left open.

A **sprain**, caused by a twisting, wrenching, or lifting movement, tears or stretches tissues surrounding a joint. The area will feel tender to the touch, and you will feel sudden pain when you move, so try to keep still. Elevate the area and apply a cold compress for 15 to 20 minutes. For persistent or severe pain, seek medical attention.

Fractures, or broken bones, can be either closed (simple) or open (compound). In a simple fracture, the skin is not punctured. In a compound fracture caused by a climbing incident, there is a wound through the skin where the bone is broken. If you suspect a fracture, do not try to move the injured area to test for pain. Look for these other signs:

1. Tenderness to the touch over the site of the break. It hurts when you press gently on the skin over the fracture.
2. Swelling or bluish color at the fracture site.
3. An unusual or abnormal shape, position, or movement of the bone or joint.
4. A grating sound or feeling.
5. An inability to move the injured limb.
6. The victim may have heard or felt a bone snap.

A compound fracture will show the signs above in addition to an open wound.

Altitude Sickness, or Acute Mountain Sickness

If you are climbing in a mountainous area and aren't used to the high elevation, the thin air, which contains less oxygen than areas closer to sea level, may leave you short of breath and tired. You might develop a headache and suffer from nausea. As a quick fix for AMS, or acute mountain sickness, immediately descend to a lower elevation. Give your body time to adapt to higher altitudes by ascending gradually. After hiking upward during the day, descend to a lower camp for a good night's rest. For more information about AMS, see the *Fieldbook*.