



**American
Alpine Institute**
The Spirit of Alpinism

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Summer Sierra Alpine Equipment Checklist

This equipment list has been developed specifically for the conditions you will experience in the Sierra Nevada during the summer mountaineering season. The equipment you bring must function well in a wide variety of conditions. While each piece of gear you bring is crucial to your success and safety, what you leave out of your pack can benefit you in similar ways by lightening your load, allowing you to move quickly and efficiently over alpine terrain. Our aim is to have you bring only the essential gear for your mountain adventures. Please understand that weather varies throughout the season and that this list is designed to outfit you for severe conditions that you may not actually experience during your course. The vast majority of the items you bring should fit inside your backpack while still allowing for some space for group items such as ropes and climbing hardware.

Temperatures and weather conditions in the Sierra are often conducive to great climbing conditions. Thunderstorms, however, are somewhat common and intense rainstorms often last a few hours in the afternoons. Nighttime low temperatures in the high peaks often drop to slightly above freezing while daytime highs range anywhere from 35°F to 70°F. Mountain breezes are not uncommon and should be taken into consideration when planning your clothing system. Summer temperatures for low elevation rock climbing around Bishop can often be quite warm, with averages ranging from 80°F to 90°F.

Please take the time to carefully prepare and understand your equipment. If possible, it is best to use it in the field beforehand, perhaps on a backpacking trip or training hike. Take the time to properly label and identify all items of personal gear. Many items that climbers bring are almost identical. Your name on a garment tag or a piece of colored electrical tape on carabiners and miscellaneous items is an easy way to label your gear; fingernail polish on hard goods is excellent. If using tape or colored markers, make sure your labeling method is durable and water resistant.

On Alpine Mountaineering and Technical Leadership courses and on Introduction to Mountaineering Courses, we often visit several different climbing areas in the Sierra. We will car camp some nights, but will also backpack into a base camp where we may spend up to 4 nights. We may also have the opportunity to go out to dinner at least twice during the course.

Please note that for some private trips and special ascents, you may not need everything on this gear list. Please consult your program coordinator and/or guide beforehand if you have questions.

When preparing your equipment for travel to the Sierra, please remember that lighters and stove fuel are not allowed on aircraft. Stoves that have been thoroughly cleaned can be put in your checked baggage. Protect your equipment by covering your ice axe, crampons, and trekking poles with cardboard or other protection to prevent the puncturing or tearing of less durable equipment.

At AAI we take equipment and its selection seriously. Our Equipment Services department is well stocked and its seasoned staff can help guide you through this complex undertaking. Please contact us to select equipment for your course.

Equipment items that are available for rental are designated with an (R). Please contact the Equipment Shop at 360-671-1570 for assistance in selecting equipment for your course.

Clothing & Footwear

Base Layer Top: Bring two. This will be your base layer and should be "lightweight" or "silk weight" synthetic or wool. No cotton.

- Weight: 5 - 8 oz / 140 - 225 grams
- Materials: Synthetic, wool.
- Example: Patagonia Capilene 2

Base Layer Bottom: Look for the same features as your Base Layer Top. One pair is sufficient.

- Weight: 5 - 8 oz / 140 - 225 grams
- Materials: Synthetic, wool.

Undergarments: Many climbers wear them underneath their base layer. 1-3 pairs depending on personal preference for changing.

- Materials: Synthetic, wool

2nd Layer Top: A lightweight fleece or wind shirt. A chest pocket is a helpful feature.

- Weight: 13 - 16oz / 368-454 grams
- Materials: Nylon, micro weave fabrics, fleece, wind stopper
- Examples: Patagonia Houdini, Outdoor Research Marvel, Patagonia R1

Soft Shell Jacket: A thin, light, stretchy, breathable but wind and snow-resistant layer that is comfortable to wear is ideal. This will be your 'action layer' and the outer layer that you spend the most time in. Hoods are optional but highly recommended. Size your jacket to be trim fitting, but large enough to fit over your base and second layers. Light to moderate insulation/thickness is recommended. This layer will go over your base and insulation layers, but under your shell and parka.

- Weight: 18 - 26 oz / 510 - 737 grams
- Materials: Schoeller, Powerstretch, Powerdry, or similar
- Examples: Arc'teryx Gamma MX, Patagonia Figure 4 and Ready Mix, OR Mithral

Soft Shell Pants: Look for the same features as your soft shell jacket. This will be your outermost layer most of the time for your legs. A thigh pocket is a useful feature for storing small items. Your base layers need to fit under these pants comfortably.

- Weight: 16 - 30oz / 450 – 850 grams
- Materials: Schoeller, Powershield, Powerdry, or similar
- Examples: Patagonia Guide pants, Black Diamond Alpine Pants, Arc'teryx Gamma LT Pants, Mammut Champ

Shell Jacket: Choose the lightest, most packable, waterproof shell that will still get the job done. Avoid extra pockets (one or two chest pockets is all you need), 3-layer Gore-Tex, and hanging linings. Your hood should fit over your climbing helmet. Your shell should be sized to comfortably fit over your other base and mid-layers (minus your insulating layer).

- Weight: 8 - 20oz / 227 – 566 grams
- Materials: eVent, Gore-tex, h2No, or similar
- Examples: Rab Latok Alpine, Patagonia Jetstream, Marmot Precip

Shell Pants: Made of a waterproof/breathable material, your lightweight shell bottoms should have full or hip-length side zips. This garment should be extremely lightweight and packable. A zipper fly is a nice optional luxury.

- Weight: 8 - 16oz / 227 – 453 grams
- Materials: eVent, Gore-tex, h2No, or similar

Mid-weight Insulation Jacket: A warm puffy jacket with an optional hood. These come in many shapes, sizes and temperature ratings and are often called “belay jackets.” If you tend to get cold easily, opt for a slightly warmer and more substantial parka.

- Weight: 20 - 40oz / 566 – 1133 grams
- Fill Materials: Primaloft, down
- Shell Materials: nylon, epic, eVent
- Examples: Patagonia DAS Parka, Montbell Flatiron Parka

Mid-weight Fleece/Schoeller/Leather Gloves: The most desirable glove is one that is comfortable and dexterous, so that it can be worn all day. It should be durable enough (leather palms) to handle ropes, ice axes, and a bit of rock scrambling. Choose a mid-weight model.

- Weight: 4 – 8 oz / 110 – 200 grams
- Materials: softshell, windstopper fleece, leather or similar

Shell Gloves: A waterproof shell sized to fit over your liner gloves, these will be worn during any cold/stormy weather and need to be dexterous enough to manipulate carabiners, harnesses, and tie knots. The highest priority with these gloves is to keep your hands and liner gloves dry. No mittens allowed.

- Weight: 6 – 10 oz / 170 - 280 grams
- Shell Materials: Gore-tex, Schoeller 3x, or similar

Beanie Hat/Toque: Bring a warm hat that will fit under your climbing helmet.

- Weight: 2 – 4oz / 56 – 112 grams
- Materials: fleece, wool, windstopper, or similar

Sun hat: A baseball cap or visor serves well. Models with a “tail” provide increased sun protection.

Socks: Bring two or three complete changes. Most climbers prefer to wear a very thin liner sock underneath a thicker hiking/mountaineering sock. Adjust your sock system ahead of time to perfect your boot fit. No cotton.

- Materials: wool, synthetic

Gaiters: (R) Ankle high gaiters are perfect for approaches in the Sierra. Check the fit of the gaiter to your boot in advance.

- Weight: 4 – 12 oz / 110 – 340 grams
- Materials: Schoeller, nylon, Cordura

Approach Shoes: Bring a pair of tennis shoes or “approach shoes” for use in camp and for approaches with no snow. Sticky rubber approach shoes can be extremely valuable on “easier” climbs where rock shoes might feel like overkill.

- Examples: La Sportiva Cirque Pro, Five.Ten Five Tennies

Mountaineering Boots for snow and ice: (R) Lightweight leather or synthetic mountaineering boots are ideal. These must have at least a ½ length shank and be designed for use with crampons. Look for a model with a waterproof/breathable liner to help keep your feet dry.

- Examples: Kayland Apex Rock, La Sportiva Trango S, Garmont Tower GTX

NOTE: There are many of makes and models out there and not all are created equal. Please consult with our Equipment Shop if you are uncertain about the acceptability of your chosen model.

Climbing Equipment

Carabiners: Bring four total. Two must be large, pear shaped (or MÜNTER) locking carabiners. Wiregate non-locking carabiners work well for the remaining two.

Climbing Harness: (R) For alpine climbing, choose a harness with adjustable leg loops and a belay loop. Make sure it fits your body when wearing bulky clothing. Gear loops are desirable.

- Weight: 6 - 16oz / 170 - 453 grams
- Examples: Black Diamond Blizzard, ArcTeryx A300a

Climbing Helmet: (R) Lightweight, well ventilated, and comfortable. Models with a plastic shell are more durable, but are heavier than all-foam models. Must be UIAA approved for climbing.

- Examples: Petzl Elios, Black Diamond Half Dome

Ice Axe: (R) We recommend using an axe that is about 50cm. For many courses and ascents, there are days when the axe will be used only briefly, and spend most of the day strapped to the pack while you are climbing rock.

Ice Tool: (R) Bring one that is 45-55 cm in length. 50 cm is the preferred length for most climbing. Tools with replaceable picks designed specifically for waterfall ice perform much better in this medium than those for snow. If you have a set, bring both tools. Some courses may not require this item. Check with the program administrator before purchasing.

- Examples: Black Diamond Viper or Venom, Petzl Quark or Aztarex

Steel Crampons: (R) Flexible or semi-flexible. New-matic crampons are the easiest to put on with cold fingers. Only modern strap on, step-in, or 'new-matic' crampons are acceptable. Older Scottish style strap-on crampons are not adequate.

- Examples: Petzl Irvis, Black Diamond Contact Strap, Grivel G12

Belay Device: Please bring an autoblocking belay device that is designed for belaying multiple ropes on multi-pitch climbs.

- Examples: Black Diamond ATC-Guide, Petzl Reverso 3

Rock Shoes: (R) An 'all around' rock shoe is recommended. Size them to fit comfortably.

Trekking Poles: (R) At least one is required and two are recommended. Even if you don't normally use trekking poles, at least one is necessary to help with balance while carrying heavy packs on mountainous terrain and crossing streams.

Camping Equipment

Tent: (R) A lightweight 3-season two-person tent is recommended. It should be able to withstand short, but intense rain storms. Single-wall models are lighter, but suffer from more condensation than heavier double wall models. Generally, your shelter should weigh no more than 3 lbs. per person.

- Weight: 3.5 – 5.5lbs / 1.6 – 2.5 kg

Sleeping Bag: (R) Rated to around 25°F from late June to mid September. Bring a 15° to 20° for early and late season trips. Down is less weight and bulk, but more expensive and it requires more care to keep dry. To help keep your sleeping bag dry, bring an extra large garbage bag with which you can line your sleeping bag stuff sack and use for storage in the tent.

- Weight: 16 – 42 oz / 453 – 1200 grams
- Materials: Down, Primaloft, Polarguard 3D

Compression Stuff Sack: Used to shrink your sleeping bag into the smallest size possible.

- Weight: 2-4 oz / 56 – 110 grams
- Materials: SilNylon, eVent, or similar

Sleeping Pad: (R) You will likely camp on both snow and dirt during this course. Bringing two pads is recommended-- preferably a lightweight inflatable pad and a closed cell foam pad. If bringing only one pad, look for one with an insulating "R-value" of approximately 4. Please bring a patch kit for inflatable pads.

- Weight: 8-20 oz / 225 – 565 grams

- Example: Thermarest Prolite 4

Internal Frame Pack: (R) 65-85 Liters is ideal. It should be comfortable for carrying loads up to 50lbs. Make sure it will hold all of your personal equipment with room to spare for your share of the group equipment that will be divided during your course.

- Weight: 3.0 - 6.5lbs / 1.6 – 2.9 kg

Stove: (R) Liquid fuel or canister stoves are acceptable. We'll likely pair up on stoves at the Rendezvous to save weight.

- Examples: MSR Whisperlite, Jetboil, MSR Reactor

Fuel: White gas or gas canister. 22oz of white gas or two 8oz canisters are usually sufficient. Fuel is available to purchase at the rendezvous for your course.

Fuel Bottle: (R) For use with liquid fuel stoves. Leak-proof bottles designed for your specific stove such as Sigg or MSR are best.

Pots: One 1½ - 2 quart pot is enough for one person. Two people sharing a stove might want to bring two pots if their meals are significantly different.

- Materials: Titanium, aluminum

Eating Utensils:

- Spoon: Bigger is better. Lexan is lighter, but metals spoons are more durable.
- Thermal mug: 16-20oz with a lid. Optional.
- Bowl: A lightweight Tupperware-type bowl is recommended. The new, ultra-light folding plastic contraptions are excellent. Avoid metal bowls, they are expensive, and make your food get cold very fast (or burn your hands when you are eating soup).

Lighter: Bring two. Lighters are no longer acceptable in checked baggage when flying.

Hydration: 3 liters of water capacity minimum. One solid 32oz water bottle, like a one-quart Nalgene, is required. Hydration bladders with a hose are recommended.

Water Purification: Bring tablets or liquid purification. Filters are overly heavy and should not be used.

- Examples: Aqua Mira, Potable Aqua

Food: You are responsible for planning your meals for the duration of this program. Please have a few days of car camping food and four days of food ready to be carried into the mountains. Food and clothing that is not needed in one area can be left in your vehicle. We have included meal planning guidelines in your program packet. Please call our office for additional guidance in the food planning and packing process.

Personal Medical Kit: Please include duct tape, moleskin, bandaids, blister care supplies, and prescriptions at a minimum.

Personal Toiletries: Bring a toothbrush, toothpaste, floss, etc. Bring half a roll of toilet paper or less. Travel sized containers are excellent.

Hand Sanitizer: Any alcohol based product for hand sanitizing work well.

Sunscreen: With SPF 30 or higher. A couple of 1 oz. tubes are adequate. Several small containers are better than one large one.

Lip Protection: Bring 2 containers/applicators with the highest SPF available. Some models of chapstick have SPF15 or higher.

Glacier Glasses / Sunglasses: Choose a model with 100% UVA/UVB protection. If you have an extra pair, bring them too. Those using contact lenses should bring a pair of prescription glasses if available.

Garbage Bags: Bring two or three large ones to line your backpack and to pack out garbage. Trash compactor bag, if available, are more durable.

Headlamp: High output LED models are preferred over older halogen models. Bring one set of extra batteries. Flashlights are not acceptable.

- Examples: Petzl Tikka XP, Black Diamond Spot

Repair Kit: At a minimum this kit should include a stove repair kit for your stove, Thermarest repair kit (for Thermarest pad users), 10 to 20 feet of lightweight nylon cord, small sewing kit, duct tape (wrapped on water bottles or trekking poles), and a pack waist buckle.

Multitool: Bring one if you have one. Any multitool similar to a Leatherman is great. One can be shared amongst tent-mates.

Optional Equipment

The items listed below are not required, although many are nice "luxury" items that can make your course more enjoyable. Remember that a few ounces here and there add up to extra pounds on your back and knees during your course.

Handiwipes/Wet Wipes: The mountain shower. For personal hygiene and general use.

Bandana: A cotton bandana has many uses on the mountain.

Pee Bottle: A nice luxury for those cold nights. 1-quart size minimum. A collapsible 2L Nalgene is recommended. If you choose to bring one of these, use it carefully and make sure the capacity is adequate. Label your pee bottle well. Women should also bring a pee funnel; Freshette makes a tried and true model.

Entertainment: Books, cards, are great for evenings in the tent. iPods are popular.

Ear Plugs: Defense against snoring and high winds in the area.

Camera: We recommend a small point-and-shoot cameras that can easily be carried in an outside pocket or small case outside your pack. If you can't comfortably and safely carry your camera outside your pack, even in bad weather, you'll miss the best photo opportunities. Though some climbers bring them, SLR cameras are not recommended because of weight and bulk. If bringing a digital camera, consider your battery needs.

Compass: A liquid-filled model for basic map and compass navigation is appropriate. Models with adjustable declination are desirable as they make map work easier.

Climbing Backpack: A small (16-40L) backpack is a great option for climbing multi-pitch rock climbs or as a summit pack in the mountains.

- Examples: Black Diamond Bullet, Cilogear 20L Worksack, Grivel Air Tech 28

T-shirt: Light colors are best. This shirt can be synthetic or cotton. If you plan to hike in it, synthetic is better. A cotton shirt can be a nice break from the synthetics while at camp.

Shorts: Lightweight shorts are nice for warm days.

- Weight: 4 - 8oz / 110 - 227 grams
- Materials: Nylon

Buff: Buffs are a multifunctional neck gaiter that can substitute for a lightweight balaclava.

Foot Powder: A very small bottle will allow you to treat your feet daily, keep them dryer, extend the life of your socks, and help you avoid blisters/rashes from chronic wet feet.

- Weight: 1 - 2oz / 28 - 56 grams
- Examples: Gold Bond, Dr. Scholls

Comfortable Clothing: Bring a set or two of comfortable clothing for use while car camping.

Sandals/Flip flops: These are great for relaxing in camp in the evenings.

Shower Supplies: Often, but not always, pay showers can be taken during the course. Bring a towel, shampoo, and quarters for this potential luxury. This will be left in your vehicle during the course.

Post-Climbing Clothing: A clean set of clothing is an excellent item to leave in the vehicle to change into upon your return.

The Equipment Shop at the American Alpine Institute

The Equipment Shop at the American Alpine Institute provides clothing and equipment for purchase, rental gear, and advice. Shop staff members are great climbers themselves and deeply involved in evaluating and testing gear. They are considered by many outdoor gear manufacturers to be the most expert in the country. They thoroughly understand the needs of climbers who will be rock climbing, ice climbing, mountaineering, or exploring the world on international expeditions. Please consider our staff members a part of your resource team in preparing for your trip. AAI Equipment Specialists are on hand to consult with you on specific gear needs, to answer questions on the latest equipment and innovations, and to make recommendations on best choices of clothing and equipment. They can assure that you are equipped with the best possible gear for your climbs. And if you have any difficulty determining if some particular items of clothing or equipment you already own will serve you well on a particular trip, they can help you answer that question.

Guides Choice International Field Testing

The Equipment Shop at the American Alpine Institute also administers AAI's prestigious Guide's Choice Award. Equipment and clothing that have been awarded the Guides Choice designation have proven to be the top item in their product category. The awards are made on the basis of excellence in design, performance, and durability demonstrated in rigorous international field tests carried out by the professional guides of the Institute. All of the products at the Equipment Shop and on its website, guideschoice.com have been field-tested or have been vetted and are in the process of being field-tested.

Call or E-mail the Equipment Shop for Advice or Gear

Please feel free to contact us and to let us help you get ready for your climbing trip. Our staff members are experts in the field, and the items of gear that we rent and sell are the best made in terms of design, performance, and durability. Your comfort and safety depend on being well equipped. Whether you get your gear from us or just get advice, we're hear to help you prepare.

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