

American Alpine Institute

Leaders of Tomorrow

Equipment List

This equipment list has been developed specifically for the conditions you will experience in the Cascade Mountains during the summer mountaineering season. The equipment you bring must function well in a wide variety of conditions. Our ethos is “light is right” not “weight is great.” 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. We want you to be able to pack the vast majority of the items on this gear list inside your backpack; furthermore, we would like you to bring the smallest backpack that still allows you to carry what is necessary.

Temperatures and weather conditions in the summer Cascades often change from minute to minute. A common weather prediction states, "If you can't see the mountains it's raining, and if you can see them it's going to rain." When the sun comes out, it's glorious, and occasionally quite hot. Rain can fall at any time of year, and it is possible to get snow down below timberline before the beginning of July and after about mid-September. Nighttime low temperatures often drop to slightly below 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.

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 tape on carabiners and miscellaneous items are easy ways to label your gear; fingernail polish provides an excellent means of marking metal equipment. If using tape or colored markers, make sure your labeling method is durable and water resistant.

On the Leaders of Tomorrow courses, we visit several different climbing areas in the North Cascades. We occasionally car camp, but often backpack into a base camp where we may spend several nights. While we won't have access to a place to purchase freeze dried food when we're not in the mountains, we will stop at grocery stores whenever we need to. We will also go out to dinner two to three times throughout the duration of the course. When we move camp into the mountains, participants normally pair up to save weight on tents and stoves. Travel clothes and various odds and ends that you won't need during your course can be left in the AAI office. It is common to use your travel luggage or a duffel and lock for storing these items at AAI.

When preparing your equipment for travel to the Cascades, 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 puncturing or tearing less durable equipment.

Upon arrival Leaders of Tomorrow students will have access to all rentals. These are included in the course price. Items carried as rentals have a * beside them.

AAI carries products in all the categories and classifications listed below; these can be viewed and purchased on our Equipment Services website at <http://www.guideschoice.com>. Our Equipment Services staff is available to speak with you via phone or email to answer your questions about equipment for your course.

Clothing System

T-shirt: Bring two. Light colors are best. These 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.

Weight: 3 - 7 oz / 85 - 200 grams

Materials: Synthetic, cotton, blends

Shorts: Lightweight shorts are nice for warm days and hiking into camp.

Weight: 4 - 8oz / 110 - 227 grams

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

Base Layer Top: This will be your base layer and should be “lightweight” or “silk weight” synthetic or wool. Cotton is **not allowed**. If hot temperatures or substantial sun exposure is expected, light colors will feel cooler than dark colors.

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

Base Layer Bottom: Look for the same features as your Base Layer Top.

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

Undergarments: Most climbers wear undergarments underneath their base layer.

Materials: Synthetic, wool

2nd Layer Top: A lightweight fleece or wind shirt. A chest pocket is a helpful feature of this multi-use layer.

Weight: 13 - 16oz / 368-454 grams

Materials: Nylon, micro weave fabrics, fleece, wind stopper

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.

Weight: 18 - 26 oz / 510 - 737 grams

Materials: Schoeller, Powerstretch, Powerdry, or similar

Soft Shell Pants: Look for the same features as the 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.

Weight: 16 - 30oz / 450 - 850 grams

Materials: Schoeller, Powerstretch, Powerdry, or similar

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 luxury.

Weight: 8 - 16oz / 227 - 453 grams

Materials: eVent, Gore-tex, h2No, or similar

Shell Jacket: This layer needs to be waterproof, breathable, and durable. Your shell should be sized to comfortably fit over your other base and mid-layers (minus your insulating layer). Choose the lightest, most packable shell that will still get the job done. You may be using your jacket every day (in warm, wet weather) or perhaps only during an occasional storm. 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.

Weight: 8 - 20oz / 227 - 566 grams

Materials: eVent, Gore-tex, h2No, or similar

Light Insulating Layer: The goal for this piece is to add warmth to your internal layering system. Depending on your clothing system, and the environment you are in, you may fit this layer underneath your shell gear (e.g. fleece sweaters) or over your shell gear (lightweight insulated jackets). If choosing fleece, pick modern fleece garments with waffle-grid patterns and avoid “windproof fleece” – it is not breathable enough. The weight and design of this piece will vary based on the other items of climbing that you are bringing.

Weight: 10 - 20oz / 283 – 566 grams

Materials: fleece, Primaloft, down

Mid-weight Insulation Jacket: Consisting of a baffled parka and optional hood, these come in many shapes, sizes and temperature ratings. 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

Fleece Gloves/Glove Liners: You wear these for much of your time on the mountain. They need to be dexterous and comfortable, but not necessarily very insulating. In wet environments such as the Cascades, two pairs are vital for when one pair gets wet.

Materials: fleece, Powerstretch, or similar

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. They come in different weights, so choose the thickness or warmth that is appropriate for your expedition.

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.

Weight: 6 – 10 oz / 170 - 280 grams

Shell Materials: Gore-tex, Schoeller 3x, or similar

Beanie Hat/Toque: A thinner warm hat that will fit under your climbing helmet and over your balaclava.

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” are recommended for increased sun protection.

Materials: nylon or similar

Socks: Bring 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. Also bring a few pairs for use in your tennis/approach shoes.

Materials: wool, synthetic

Gaiters* - Calf/knee height are recommended, though ankle high gaiters can be used most years later in the season. Check the fit of the gaiter to your boot in advance.

Weight: 4 – 12 oz / 110 – 340 grams

Materials: Schoeller, nylon, Cordura

Mountaineering Boots for snow and ice*: Plastic boots are STRONGLY encouraged for the North Cascades prior to July 1, when the snowpack is still wet and deep. Leather boots are suitable the rest of the season, but must be designed for heavy-duty mountaineering with full-length rigid shank. Leather boots should be designed for use with

step-in crampons. These should be broken in and thoroughly waterproofed.

***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

Climbing Harness*: For alpine climbing, choose a harness with adjustable leg loops, and make sure it fits your body when wearing bulky clothing. A belay loop, gear loops, and light padding on the waist are desirable features.
Weight: 6 - 16oz / 170 - 453 grams

Climbing Helmet*: Light weight, 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.

Belay Device: Bring an autoblocking device like the Petzl Reverso and Black Diamond ATC-Guide.

Rock Shoes*: Find an “all around” rock shoe that performs well in cracks and edging. Size them to fit comfortably so you can wear them all day.

Carabiners: Bring nine total. Four must be large, pear-shaped (or MÜNTER) locking carabiners. Five wiregate non-locking carabiners work well for the remaining carabiners.

Slings: Bring two 24 inch (60cm) sewn runners that have been designed for climbing.

Ice Axe*: A variety of axes are suitable. Bring one that is 60 cm max – if you are over 6'. (50 cm to 55 cm preferred). A ‘positive clearance’ pick is preferred. Ice axe leashes are not required or recommended.

Steel Crampons*: Flexible or semi-flexible. Step-in crampons are easier to put on with cold fingers, but they are not compatible with all boots. Only modern strap on, step-in, or ‘pneumatic’ crampons are acceptable. Older Scottish style strap-on crampons are not adequate.

Prusiks: Prusiks are specially tied loops of 6mm cord used for crevasse rescue. If you don’t have a set of prusiks from a previous AAI course bring three lengths of 6 mm perlon/nylon: 13 feet, 6 feet, and 5 feet. (Precut lengths are available for sale at AAI.) Cord thicker than 6mm will not work.

Trekking Poles*: At least one pole 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*: A lightweight, 4-season, two-person tent is recommended. It should be able to withstand multi-day, continuous rain. When deciding what tent to bring, it is worth trying to go as light as possible. Single wall models are lighter, but suffer more from condensation than heavier double wall models. Generally, your shelter should weigh no more than 3 lbs per person. During the rendezvous, we will figure out the best way to divide up tent weights and gear.

Weight: 3.5 – 5.5lbs / 1.6 – 2.5 kg

Sleeping Bag: 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. If you purchase a down sleeping bag, do not buy a bag with Gore-tex on the outside – it keeps all the moisture and sweat in the bag and ultimately gets the bag quite wet.

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*: Bring one pad – preferably a lightweight inflatable pad. Closed cell foam pads are suitable, but will add bulk to your pack. Please bring a patch kit for inflatable pads.

Weight: 8-20 oz / 225 – 565 grams

Internal Frame Pack*: 55-65 Liters is ideal. In early season, larger pack (up to 85L) may be brought so that more clothing can be carried. 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*: Liquid fuel or canister stoves are acceptable. We'll likely pair up on stoves to save weight. If you don't already own a stove please contact the AAI office to find out if you'll need to buy or rent a stove.

Fuel: White gas or gas canister. Fuel is available at the rendezvous for your course.

Fuel Bottle: 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 metal spoons are more durable.
- Thermal mug: 16-20oz with a lid.
- Bowl: A lightweight Tupperware-type bowl is recommended.

Lighter: Bring two. Please be advised, lighters are no longer acceptable in checked baggage when flying.

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

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

Other Essentials

Personal Medical Kit: For sunburn, blisters, cuts, scrapes, etc. Please include duct tape, moleskin, bandaids, blister care supplies, and prescriptions at a minimum.

Personal Toiletries: Bring a toothbrush, toothpaste, floss, hand sanitizer, etc. Bring one roll of toilet paper. Showers will be available at times during the course.

Sunscreen: With a Sun Protection Factor (SPF) of at least 30. For the fair skinned, the higher the SPF the better. Stick applicators allow you to apply without exposing fingers. Dermatone produces an effective 1” diameter stick,

as well as a translucent zinc oxide lotion. A couple of 1 oz. tubes are adequate. Only your face and, at times, your hands, will be exposed. Several small containers are better than one large one.

Lip Protection: Bring 2 containers/applicators with the highest SPF available. Zinc oxide also works well (available in pharmacies) as do some models of “chapstick” that have SPF15 or higher.

Glacier Glasses: Choose a model with 100% UVA/UVB protection and side shields. If you have an extra pair, bring them too. *Note:* Those using contact lenses should also bring a pair of prescription glasses in the event that your contacts or solutions are lost or damaged by freezing.

Garbage Bags: Bring two or three large ones. They serve a variety of uses. Trash compactor bags, 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.

Repair Kit: Stove repair kit, Thermarest repair kit (for Thermarest pad users), crampon wrench and extra screws, 10 to 20 feet of lightweight nylon cord, small sewing kit, duct tape (can be wrapped on water bottles or trekking poles), pack waist buckle.

Multitool: Any multitool similar to a Leatherman is great. One can be shared amongst tent-mates.

Compass: Liquid filled. Appropriate for basic map and compass navigation. Models with adjustable declination are desirable as they make taking bearings easier. Maps can be purchased from AAI.

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: AKA the mountain shower. For personal hygiene and general use.

Pee Bottle: 1-quart size minimum. A collapsible 2L Nalgene is recommended. Plastic bottles from the store such as Gatorade bottles can work well but the lids are less secure than a Nalgene. 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.

Approach Shoes: Approach shoes are a hybrid type of footwear that have characteristics common to both hiking boots and rock shoes. These may be worn on easier rock routes in order to increase the comfort of your feet. Rock shoes were designed for steep technical routes. These tend to be tight and cold on mountain routes and most guides will try not to wear them on easier terrain. Popular models include the Five Ten Guide Tennies and the La Sportiva Boulder X.

Bandana: These have many uses on the mountain.

Materials: cotton

Entertainment: Books, games, cards, for evenings in the tent. Music players like mini-disc and MP3 players are popular because the device and media are small and relatively lightweight.

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

Insect Repellent: Recommended. If bringing repellent, look for more concentrated repellent in smaller containers. Pack it in a Ziploc bag to prevent contaminating other items in your pack.

Camera: We recommend 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.

Note: If bringing a digital camera, consider your battery needs. If your camera uses a proprietary lithium ion type you may want to bring an extra. If your camera uses AA or AAA batteries, use lithium batteries and bring one or two sets of extra batteries, more if you take a lot of photos.

Water Bottle Parkas: These insulating jackets are for your water bottles to help prevent freezing. Bring one for each bottle. These are useful for early and late season courses.

Buff/Balaclava: "Buffs" are a multifunctional neck gaiter that can substitute for a lightweight balaclava.
Materials: synthetic

Nose Protection: Designed to protect your nose from the sun, this is a cloth nose guard that fits onto your glacier glasses. Try the fit on your sunglasses; they should fit well without pushing the frames off your nose.

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

Small, comfortable climbing pack: Highly recommended. This will be very useful for the rock sections of your course, any lightweight technical ascents done.

Weight: 16 - 36oz / 453 – 1000 grams

Size Range: 28 – 35 liters / 1700 - 2100 cu in.

Green Trails Mt. Baker Climbing Map: One map recommended per climbing team. You're guide will have a map, but you may wish to have your own for educational purposes.

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