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## Snow Camping Equipment List

Most of the gear required for snow camping is the same as that required for a summer backpacking trek, with several important modifications and additions.

**Sleeping Bag:** Obviously, there is a need for a warmer sleeping bag than the one you use for summer camping. However, your three-season bag should be adequate along with a warm synthetic liner, or an extra lightweight bag fitted inside each other. To insure a dry bag, line your stuff sack at home with a plastic bag before stuffing it with your sleeping bag. Remember to “fluff” your bag up about 30 minutes before crawling into it, in order to give the insulation time to loft. You might also want to wear warmer clothes during the night (socks, base layers and hat). The clothes must be dry, and not what you wore during the day.

**Sleeping System:** Sleeping on snow requires at least two insulating pads. One pad should be closed cell foam typical for summer camping. (Inflatable sleeping pads also work, but they often provide less insulation than closed cell foam pads.) The other pad could also be closed cell, or a foil backed insulation pad works well. Many Hardware Stores will cut the foil backed pad used for water heater insulation to your requested length. Beneath your sleeping pads you will need a plastic ground cloth that is wider and longer than your pads to keep your sleeping bag off the snow.

**Plastic Ground Cloth And Tarp:** Each pair of sleeping mates will also need a tarp. This can be used as a roof or entry cover for your snow shelter, and is a good place to store gear while building your shelter.

**Sitting Pad:** A small closed cell pad should be used to sit on for meals or resting, and it can be used to kneel on while digging your cave.

**Snow Shoes and Poles:** If renting, you should reserve your snow shoes and poles at least one week before the outing. Add about 40 pounds to your weight when determining the required size of snow shoes to account for all your gear and clothing. The longer the snow shoes, the more weight they can easily carry.

**Snow Shovel:** A good quality collapsible metal shovel can be a little expensive (around \$46 to \$80), but it is a definite requirement. The expense can be partially justified as it is also a good addition to your car's emergency gear when traveling in the mountains. Plastic shovels, sold for back country use, are too fragile in icy conditions.

**Plywood:** A piece of plywood can, be used as a cooking table, a cutting tool for blocks of snow, a seat, a shelf, or a snow smoothing/leveling tool. Plywood that is 1/4" thick and cut to about 15" square works fine. Adding a narrow strip of plywood to one edge of the sheet provides a good handle. Drilling holes near the corners of the sheet (about 1" in diameter) provides locations for lashing it to your pack. One partner can cut his plywood sheet with a rounded edge to use in shaping the cave's domed roof.

**Night Time Bottle:** You should not, nor will you want to, leave your snow cave at night. Therefore, you need a disposable plastic bottle for urination during the night.

**Deadmen:** A deadman is a short stick or round piece of plastic with a short cord tied to it. This can be buried in the snow with the cord exposed – to tie off a tarp or tent. After a short time the snow will set, and the tarp will be anchored in the snow. The cord should be tied to the stick with a bowline knot above the snow level. This will allow retrieval of the cord and the abandonment of the stick. Sticks should be carried in and not taken from on-site trees. Bamboo stakes from a garden supply store work well. Tent stakes do not work in the snow, hence the need for deadmen.



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**Hand Warmer Packs:** A couple of chemical hand warming packs should be in everyone's emergency gear, for possible hypothermia cases. Extra packs are an exceptionally good idea and can be useful to add warmth to a sleeping bag. Placing one heat pack in each boot during the night (with laces and a sock stuck in the boot) makes putting on the boots much easier in the morning. Do not leave boot laces tied at night. They might freeze and make it impossible for you to put your boots on in the morning.

**Clothing:** Proper clothing is critical for your comfort. Clothing should be layered so you can quickly adapt to changing conditions, and extra attention needs to be paid to anticipate those changes. For instance; start your hike slightly cold because you will quickly warm up, and upon stopping have a warmer layer and hat easily available to prevent you from becoming chilled. Clothing layers include the wicking layer, the insulating layer and the waterproof shell.

- The wicking or base layer moves perspiration away from the body. Polypropylene or Capilene are common choices for a wicking layer. However, Merino wool is the best because it is warm, has good wicking properties, and is usually treated so that it does not smell, even after you wear it for a couple of days.
- The insulating or warmth layer provides the trapped air spaces that retain the body's heat. Wool, fleece and synthetic fills are good choices for the insulating layer. While goose down is also an excellent insulator, if the down is treated to repel moisture. Older, untreated down and its complete ineffectiveness when wet makes it an unreliable choice for the less experienced.
- The outer layer needs to be wind-proof and water proof. (Water-repellent shells might be acceptable for some outings if there is no snow or rain forecast.) It can be a separate, thin, layer or incorporated with the insulating layer like in a ski jacket. A breathable fabric, such as Gore-tex®, is a good choice. Maintaining your shell layer with a water repellent spray is required, paying special attention to the garment's seams.

**Socks and Boots:** Being the farthest from the body's core, and in constant contact with snow, feet are very difficult to keep warm. A sock liner, then a heavy wool sock (or two) then a waterproof and insulated boot offers the best protection. Choose your boots with adequate room for your socks. A tight fitting boot rapidly conducts heat away from your feet. If you wear boots that are not waterproof, it is likely you will be cold. To minimize problems, plastic bags can be placed over the feet before inserting them into the boots. But this does not work for many people because the bags are not usually enough to keep water away from your socks.

**Hands:** Hands are also difficult to keep warm, especially when building a snow shelter, since they tend to get wet. Gloves claiming to be waterproof often are not. What seems to work best are rubber chemical gloves that can be purchased at hardware stores. Ski gloves might be used, but they are expensive and might be damaged while digging. Glove liners that can be switched if they become too wet with perspiration are also required. Tight fitting latex gloves (like those used for washing dishes) are not a good substitute for the heavy and larger chemical gloves due to conductive heat loss.

None of your clothing should be cotton. Cotton absorbs moisture and dries slowly. In extreme conditions **cotton kills**.

Remember that Iso-propane canisters like the ones used with Jet-Boil type cooking systems often depressurize in cold weather (below 32°F – which is typical for snow camping) leading to weak or no flame. This means you can't cook dinner when it gets really cold. Normal pressure resumes when the canister temperature rises above freezing temperatures. Putting a fuel canister into a bowl of water (which is by definition above 32 degrees in temperature) will usually warm up the fuel enough to get it going. Manufacturers suggest that you sleep with them in your sleeping bag to keep the canisters warm.



The following list provides all items required for a successful outing. **Each participant must have all the items listed.** When packing your pack remember you will need room for troop food and troop gear, and all items should be stored in your pack or be securely attached to the outside.

## Snow Camping Equipment List

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| <p><b><u>Personal Gear</u></b><br/> <b>Snow Shoes and Poles (usually rented)</b><br/> <b>Snow Shovel (not plastic)</b><br/> <b>15" x 15" x 1/4" Plywood Square</b><br/> <b>Closed Cell Foam <u>Sitting</u> Pad</b><br/>         Backpack and Waterproof Cover<br/>         (2) Carabineers<br/>         (2) Water Bottles (each 1 liter, filled)<br/>         Bowl/Plate, Spoon, Insulated Cup<br/>         Waterproof Watch<br/>         Sunglasses or Ski Goggles<br/>         Snack Food (nuts, chocolate)<br/>         Eyeglasses/Contacts/Cleaner (if required)<br/>         Personal First Aid Kit<br/>         Toilet Paper in Waterproof bag w/ Purell and<br/>             (2) Small Sealable Bags (for latrine)<br/>         Disposable Plastic Bottle (for nighttime use)<br/>         Winter Emergency Kit in a bag<br/>             <i>Compass, Two Flashlights, Matches In<br/>             Waterproof Container, Whistle AND Signaling<br/>             Mirror, Writing Paper (one sheet), Short Pencil<br/>             Wrapped w/ Duct Tape, Space Blanket,<br/>             Chapstick, Pocket Knife, Chemical Hand Warmer<br/>             Packs (2+), (3) 1 Gal. Ziplock Bags, (2) Large<br/>             Garbage Bags</i><br/>         Map In Waterproof Container (copies to be<br/>         provided to each person)</p> <p><b><u>Sleeping System</u></b><br/>         Plastic Ground Cloth<br/>         Foil Backed Insulated Sleeping Pad<br/>         Closed cell or inflatable Sleeping Pad<br/>         Zero Degree Sleeping Bag (or a 20 degree bag w/<br/>         a synthetic liner) in Waterproof Stuff Sack</p> <p><b><u>Sleeping Mate Gear</u></b> (each pair of campers)<br/>         Six <i>deadmen</i> (small sticks about 8" long, w/ 4 feet<br/>         of cord tied to each), Tarp, Glow Sticks</p> <p><b><u>Optional</u></b><br/>         Gaiters, Camera, Ear Plugs, Sled, Cards</p> | <p><b><u>Clothing</u></b> (including what you will be wearing)<br/> <b>NO COTTON - NO COTTON - NO COTTON</b></p> <p><b><u>Wicking Layer (Synthetic or Wool)</u></b><br/>         Long Underwear Tops and Bottoms<br/>         (3) Glove Liners<br/>         (2) Underwear<br/>         (3) Sock Liners (optional)</p> <p><b><u>Warmth Layer: (Wool/Fleece/Synthetic Fills)</u></b><br/>         Parka / Warm Jacket<br/>         (2) Warm Pants and (2) Warm Shirts<br/>         (3-4) Warm Socks<br/>         Warm Gloves and/or Mittens<br/>         Balaclava or Scarf to Wrap Face &amp; Neck<br/>         Warm Hat</p> <p><b><u>Waterproof Shell Layer (Nylon / Gore-tex®)</u></b><br/>         Hooded Waterproof Jacket<br/>         Waterproof Pants (ski pants)<br/>         Light Weight Rain Pants (optional)<br/>         Waterproof Gloves (rubber chemical gloves)</p> <p><b><u>Waterproof and Insulated Boots</u></b><br/> <i>Optional - Emergency Clothes, wrapped and sealed in a<br/>         waterproof bag: Socks, Fleece Pants, Parka, Gloves, Hat</i></p> <p><b><u>Troop Gear</u></b><br/>         Cooking Pots and Stoves (4) &amp; Fuel or several<br/>         Jet-Boil type stoves<br/>         Serving Utensils Kit (spoon, ladle, cup measure)<br/>         Cleaning Kit and Repair Kit<br/>         Rope and Avalanche Probes (to check the depth of<br/>         snow before starting to dig a cave)<br/>         Permits and Medical Forms<br/>         First Aid Kit<br/>         2 Large Tarps<br/>         Sunscreen</p> <p>Emergency Tent (may be left in car depending on<br/>         weather)</p> |
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