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Snow Camping Shelters and Camps

Camp Lay Out

Upon reaching a reasonable camp site, leaders should find spots for the kitchen, latrine, cleanup sump, and snow caves. Paths are then established between the different areas and snow caves are staked out with ski poles.

Kitchen

Your imagination rules the kitchen design, but typically it is dug out with a raised flat area for cooking and sufficient seating for all campers. A useful arrangement consists of a horseshoe shaped seating area with a raised cooking table off to the side. Constructing the cooking table with built up walls along two or three sides is helpful, as is the construction of another isolated serving table. This allows the cooks to prepare food out of the wind and then serve it to the campers on the opposite side of the serving table as they file pass. A plywood board is used to provide a stable cooking surface and to keep the stove and the fuel bottle from direct contact with the snow. Once completed, a garbage bag should be made available in the kitchen area.

Water

Upon completion of the kitchen (or even before), it is important to start melting snow for water. Begin by scooping clean snow into a pot, then adding about one cup of water prior to heating, so not to burn the pot. New snow must be added to the pot as the existing snow melts. After the melted snow reaches a boil it can be used for hot drinks or added to water bottles and chilled. All water bottles should be filled prior to going to bed to quicken breakfast preparation. A warm bottle placed in your sleeping bag (with a lid screwed on tight) provides extra warmth during the night. Other bottles kept overnight in a snow cave should be stored upside down, and the water will be useable in the morning. (Water freezes from the top, where it is contact with the air.) A large pot can also be filled with water and stored in a snow bank with the opening covered with snow. Mark the buried pot with a couple of sticks. In the morning there may be a thin layer of ice on the surface of the water, but most of it should be liquid.

Latrine

Latrines must be at least 200' away from lakes, streams and trails, and should be at least 100' away from your camp. Generally, it is impossible to dig thru the snow down to the soil and then dig a cat hole. Leaving excrement and toilet paper in the snow results in exposed refuse once the snow melts and is completely unacceptable. Excrements should be packed out!

First scoop out a small hole in the snow, and line the hole with a small plastic bag. Do your duty in the bag, and add your used toilet paper. Retrieve the bag from the hole and remove most of the air from the bag, then seal it. As an alternate, pack a firm surface in the snow with your snow shoes, and do your duty on the firm snow. Using a small plastic bag turned inside out, put your hand in the bag and pick up the excrement and dirty toilet paper. Reverse the bag, remove air from the bag, and seal. In both methods, add the small plastic bag to another zip lock bag (or even two) for added security, and be very careful to keep your hands clean. It is each camper's requirement to pack out their own excrement. Do not put it in the group's garbage.

Hygiene

While bacteria and parasites in mountain water and snow are very real possibilities, most infections are caused by person to person contact. It is imperative that you maintain good hygiene habits by disinfecting your hands with an anti-bacterial lotion (Purell), after all latrine breaks, before eating, and before meal preparation.

Clean-Up

Each camper is responsible for cleaning all of his personal eating gear. The initial step is to lick the gear



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clean to remove all food particles. Washing and rinsing will be over a sump, in an area away from the kitchen and sleeping areas. If necessary, a small amount of hot water can be added to eating gear to remove additional food particles, then hot soapy water will be used to disinfect the items, and they will then be rinsed with clean water. Troop gear will be similarly cleaned. The sump consists of one or two paper towels used to line a shallow hole in the snow. Upon completion of KP, the sump will be drained and added to that meal's garbage.

All litter needs to be picked up immediately or else it could quickly disappear in the snow, until spring.

Fires

If you want to build a fire make sure it is OK with the local governing agency. Since only downed wood is allowed for a fire in most areas, and all the downed wood will be buried by snow, you will probably need to bring in your own fuel. A "Presto" log is the most convenient. It will also be necessary to have a burning surface, like a disposable roasting pan.

A fire may also be required in an emergency. In this instance dead wood off of trees may be used. Dry wood can usually be found as tiny dead branches near the trunk of a tree where it is protected by overhead branches. A fire starter with waterproof matches, or a butane lighter should be part of your emergency kit. Using the tepee or log house method, construct your fire on the leeward side of a large object, preferably against a rock. When required to build your fire on snow, use rocks, green boughs, or other less flammable material as a platform.

Winter Shelters

Some shelters can be constructed quickly and be an effective emergency shelter. Other shelters may be more time consuming to construct, but they will be more comfortable. Generally the type of shelter chosen depends on your needs, available time, and snow conditions. Points to remember include:

- Use the buddy system
- Start your shelter immediately, before playing
- Pace your work - ventilate clothing and avoid perspiration
- Stay dry - keep snow off clothing and use a pad and/or tarp to kneel on during digging
- Use waterproof/rubber gloves with a liner during digging
- Never stay in an enclosed snow shelter if the temperature is above freezing

Skis, Poles and Tarp/Poncho Shelter

Skis, poles and a tarp or your poncho can make an effective emergency shelter, constructed on the leeward side of some obstacle like large rocks or trees, especially when there is little snow. The fetal position assumed by the body in this type of shelter reduces heat loss from the body. It only takes about 15 minutes to build.





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Fallen Tree or Tree Pit Shelter

A fallen tree or a natural hollow around a large tree is a very effective shelter with a pack, poncho or tarp used to close the opening to keep wind and moisture from its occupant. It only takes about 15 minutes to build



Igloo

To construct an igloo the snow must be fairly well packed so blocks of snow can be cut and stacked. A cord is tied to a center pole inserted vertically into the ground, and used to maintain a consistent radius for each course of the snow blocks. As the walls increase in height, the length of the cord is shortened resulting in a domed shape. While a long lasting and comfortable shelter, the igloo is time consuming to construct and requires considerable skill. Further reading is required prior to attempting this shelter. It is also recommended a back-up shelter is constructed before hand, in case the initial attempt to construct the igloo is unsuccessful. It may take several hours to construct an igloo. Most inexperienced Scouts who try to make an igloo end up sleeping in a trench (aka coffin) because the igloo collapses in the end.

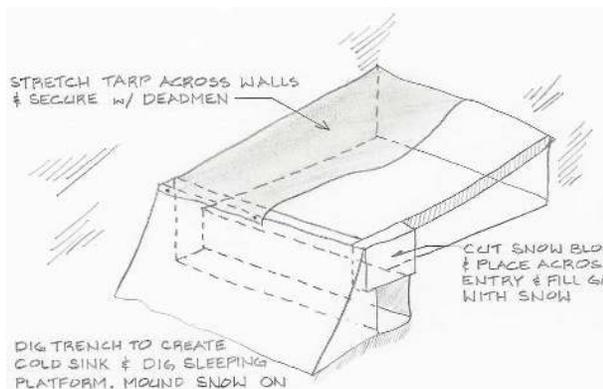
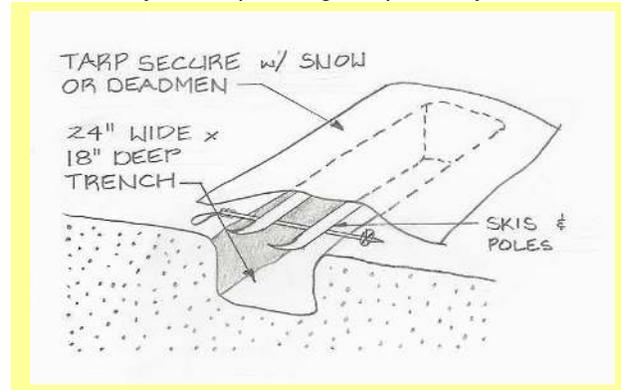


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Snow Trench (aka Coffin)

This shelter is exactly what you think, a long trench in the snow, just deep enough to protect you from the wind. After digging, the trench can be covered with a poncho, or tarp, with skis, ski poles, snow shoes or branches used for additional warmth. Making one side of the trench higher than the other side aids condensation run off during the night if a tarp is used as a cover, and reduces the problem with possible snow accumulation. A reasonable snow trench can be built in less than an hour.



Tarp Roof Shelter (Hop House)

The tarp roof shelter is simply a structure made with snow walls and a tarp for the roof. The walls can be constructed by mounding snow, or cutting and stacking snow blocks, or digging into a snow bank. By tapering the height of the walls, the tarp can be set on a slope to aid condensation run off during the night, and possible snow accumulation. It can also be constructed with a cold sink below the sleeping platform, and made large enough for several people, but it is not as warm as being completely surrounded by snow like in a snow cave. Two people can construct a tarp roof shelter in 1 to 2 hours.

Quinzee

A quinzee is similar to a snow cave, but can be constructed without deep snow or banks in which to burrow. To build a Quinzee, pile snow in a mound about 6' high and about 12' in diameter. This is a time consuming task, but can be simplified by setting a lot of backpacking on the ground, covering them with a tarp, and piling the snow on top of the backpacks. After allowing the mound to "set" for about 1 to 2 hours, the interior is hollowed out to the ends of the sticks. (It is very useful to insert 12" long sticks into the mound of snow to gauge the roof thickness.) It may take several hours to construct a Quinzee, but it is very similar to a snow cave and provides the same insulation.



Snow Cave

The snow cave can provide enough room for two or three occupants, and while it takes longer to construct it is a more comfortable winter shelter than the shelters described above (except the Quinzee.). No matter how cold it may get outside the shelter, the interior temperature should stay several degrees above freezing during the night. There are different methods of constructing a snow cave, but all result in a structure with a domed roof, and sleeping platforms raised above a cold sink. Prior to digging, use an avalanche probe to locate hidden rocks and logs. The "T" shaped snow cave described on the following page is the most easily constructed snow cave. It takes about 4 to 6 hours to construct, but can be simplified further by digging a shorter cold sink, and only having one sleeping platform, that's wide enough for two campers.

