

TRAINING MANUAL FOR MICHIGAN 4-H

OUTDOOR ADVENTURE CHALLENGE



Section:

WINTER CAMPING



WINTER CAMPING SECTION CONTENTS

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EQUIPMENT FOR THE WEEKEND

Tenting and Other Winter Sleeping Arrangements

For this trip, it is essential that tents and shelters be shared for two reasons – safety and weight. For safety sake, it is wise to have at least two of you per tent, and four is even better, to keep an eye on each other for any problems and to help each other keep warm and watch each other for signs of hypothermia. The weight of the tent and poles can be shared in your packs. Tents which are free-standing are easier to put up and keep spread out. You will learn techniques for staking a tent out in frozen soil and snow. A good tent is essential!

Tip: You must sleep with your vents open about 10 square inches per person to allow moisture to escape.

Sleeping Bags and Pads:

Your sleeping bag should be a synthetic or down material which will insulate to at least 5 to 10 degrees. You can improve your bag's ability to keep you warm by putting a blanket inside, or by using your coat and sweaters as a cover and beneath your bag. You *must* also have a closed cell pad to reflect body heat back to you, and it must be full-length. Using two pads is a good idea and the pads will make a tremendous difference in your ability to stay warm. Don't try it without a closed cell insulated pad. Your bag should have a hood and drawstring to draw it up around your head.

Tip: Don't sleep with your mouth and nose drawn into the bag. The moisture in your breath will add a tremendous amount of moisture to the inside of your bag. Moisture means ice which will make you feel very cold, especially at night.

Stoves/Fuel:

Your propane or white gas stove will work just fine. You should be aware, however, that stoves with built-in generator may need a starter such as "fire ribbon" to heat the generator in weather under freezing. The Coleman Peak One is a good example of a stove which needs a fire ribbon. The Whisperlites and gas stoves do not. You should plan to carry extra fuel because you will need to melt snow for water.

Cooking/Water Storage:

Your regular cooking equipment will do fine, but you should bring a 3 lb coffee can (empty) with a wire bail to use to melt snow for water. You can make that yourself. Bring ample food for the weekend. One tip you want to keep in mind is that after the first night, everything in your pack will be frozen, including any food with liquid in it!

Avoid bladders and water bottles with hoses. The cold freezes the lines too quickly.

Be sure to have a lexan water bottle such as a Nalgene or Camelback. You will be placing hot water in and it may melt some plastic bottles.

Eating properly and staying hydrated are two of the best ways to stay warm and prevent hypothermia. High energy snacks are important. Food is your fuel.

Clothing:

The tip for the day is "avoid cotton." The problem with cotton is that it wicks moisture and will retain it for a long time. If you layer some of the synthetics or wool from the skin out, you will be much more comfortable.

Avoid cotton in pants and shirts (remember, that means no jeans). An extra pair for extreme weather will be good. A heavy wool shirt and a sweater can be put on and off as you work. A ski jacket or something similar is good to carry, too. Some people wear ski bibs, but make sure they will breathe. Carry a rain suit for when you are working in the snow, such as putting up a tent or making a shelter. They make a good wind suit, too, but sometimes will collect moisture on the inside.

You should dress in layers in order to be able to easily add or subtract layers as the conditions change. A combination of layers of clothing which will allow you to operate at a level just under open perspiration is best. You will find that you need to move more deliberately and rest a little more often. After you perspire heavily, your body will cool as you dry out. Your clothing will be wet and the moisture will freeze.

Headwear:

A wool or synthetic stocking cap works great; a little itchy sometimes, but warm. You should plan on wearing it to bed. A light ski mask with a stocking cap on top works great.

Footwear:

You should plan to wear some kind of insulated boot which has removable felt or wool linings. At night, the liners should be removed and put under your head for a pillow, the linings will dry overnight and be warm and ready to go. Avoid cotton socks. Use thin wool or wool blends. They will keep your feet warmer even though some moisture may accumulate. A poly-propylene liner sock could wick the moisture out to the outer sock and boot liner. Plan on wearing a couple of pairs of socks at a time, with a couple of pairs to change into, especially at night.

Gloves/Mittens:

Make sure you have warm gloves and at least one extra pair. Again, layers and extras are nice. You might consider heavy outer gloves or mittens which could be water resistant, with a wool or poly liner. Mittens are probably the warmest, but need a liner to protect your hands when you take the mittens off for work.

Don't forget to take along...

Gaiters – Lightweight gaiters are important in snow, since they prevent the entry of snow into your boots through the tops, saving you from the misery and danger of wet feet in winter.

Pack – A pack is useful even if you don't plan an overnight stay. You'll need someplace to stow the layers of clothing you peel off as the day warms up or as your pace quickens. Even on a warm day's hike, you should take along a small pack to hold your *just-in-case* extra clothing and the miscellaneous food and fear you'd have trouble toting without a pack.

Skin Protection – Especially in cold weather, the exposed areas of your skin can take a beating from the wind and cold. Lip balm and petroleum jelly protect your skin from painful chapping and windburn.

Eye Protection – Sunglasses are a must for sunny days when snow covers the ground. Protect your eyes from snow blindness with a pair of sunglasses.

TENTING IN SNOW – QUICK POINTS by *Sam Cornelius*

- First, a basic: A tent blocks wind and snow (important in reducing some heat loss) but provides little insulation. Two thin layers of nylon in a jacket wouldn't keep you very warm, right? Insulation in your clothing and your sleeping bag is what keeps you warm.
- Most 3-season tents will serve fine in winter. Best are those with a full fly, lots of breathable inner tent materials and windows for ventilation, solid construction to support weight, and a fairly steep slope to shed snow.
- Set up where you'll be protected from heavy winds and are crosswise to prevailing wind.
- Ground Option One: Stomp down snow for a solid base with snowshoes. This is quick and smooths out lumps, but you'll be sleeping over a cold slab.
- Ground Option Two: Dig down to the ground with snowshoes (carefully to not gouge up the snowshoe frame) or your shovel. The ground will be warmer than the snow, but you may end up on lumps or a slope. Pile up the excavated snow into a windbreak. Clear space at the tent entrance to come and go without cascading snow in the door.
- Some put their ground cloth inside the tent in winter. However, you get wetness on the outside of your tent as the snow melts from your body heat, which turns into ice in the tent fabric, so putting it outside is better.
- Use sticks instead of tent pegs. Put them crosswise in the snow, stomp the snow around them, wait a few minutes for the snow to set up, and they'll stay. You can use snow stakes – broad flat tent pegs with holes in them. The snow sets up through the holes and holds them.
- You can use a tarp overhead as a second fly or unwind as a windbreak.
- Ventilate. Open windows as much as you can. This allows moisture from bodies to escape. If sweat or breathed vapor is trapped in the tent it accumulates at the ceiling of your tent and you get rain or snowfall from your roof. If this happens, things will get damp. If the wind whistles through or snow blows in, string up a tarp on the outside to block it.
- Clean off snow from your clothing before entering the tent. Otherwise it'll get things damp. Take boots off with your feet outside. If you must bring snowy boots into the tent, put them into a garbage bag.
- No cooking in the tent. Steam dampens your gear. No stoves in a tent anyway - due to fire and suffocation danger. If your tent has a vestibule, you may cook there safely.
- Keep clothing and other items in bags to prevent their getting dusted with any snow that makes its way inside. Arrange clothing bags around the tent wall to keep you from leaning against the walls as you sleep.
- Luxury: A space blanket on the inside to reflect heat back up, wall-to-wall foam pads, or a carpet of woolen blankets! Wall-to-wall warm people are nice too; put the chilliest person in the center!

BUILDING A WINTER FIRE

Step I - Determine Type of Fire Needed:

- *Cooking Fire* - a fast burning small fire made of branches that are easily broken by hand.
- *Overnight and/or Warming Fire* - a slower burning fire made with larger logs. Usually a small camp saw or axe is needed for this type.

Step II - Location of Firebed:

- The fire should be located in a sheltered area but not built directly under overhanging limbs. A good windbreak can be built from logs piled on the windward side or a snow wall (if snow is available). The wall should be about 3 feet away from the fire.
- Clear a three foot diameter circle of snow and debris. If the snow is too deep, pack the snow down in the area and make a platform of green logs slightly larger than the fire that is to be built.

Step III - Materials for the Fire:

Since dry wood usually can not be found on the ground during the winter, look for the *dead* lower branches on trees. (The lack of leaf buds on a branch is a good way to determine that a branch is dead.) It is usually a good idea to start gathering wood about an hour before actually starting to build a fire.

A lot of tinder is needed to start a fire in winter. Good sources of tinder are:

1. Birch bark – gather only from dead branches. Taking bark from live trees can kill them.
2. Dry, brown pine needles – gather these from the lower branches of the trees. Make sure they aren't snow-covered.
3. Dead leaves from trees – Oak trees tend to keep their dead leaves until spring. These dead leaves make good tinder if not snow-covered.
4. Small dead twigs from trees – these should be pencil size or smaller. Pine knots from old stumps – these knots contain a lot of pitch that burns in a hot, fast flame.

Step IV - Building the Fire:

The “tee-pee” method of fire building works best for novice fire builders. Always carry a candle stub and matches in a waterproof case for lighting. (A disposable lighter may also come in handy.)

Place a small pile of tinder (except sticks) on the dry ground, then place the small sticks “teepee” style over the existing tinder. Make sure that air can get to the tinder. Light the candle stub (or a piece of birch bark), then light the fire with the candle from the wind side. The wind will help light the rest of the tinder.

As soon as the small twigs start burning, gradually add some slightly larger twigs. Keep slowly feeding the fire with progressively larger twigs until the fire is the desired size. A good bed of coals for cooking should be ready in about one-half hour. Pots may be hung from a green stick tripod over the fire.

Prepared by: Audra M. Packer, Former 4-H Natural Resource Educational Assistant, Monroe County Sources: “Outdoor Winter Activities” by G.A. Peterson and H.D. Edgren
“Snow Camper’s Guide” by Raymond Bridge

TIPS FOR WINTER CAMPERS

Conditioning Tips

Work up your endurance. In less than two months, you can make a great difference in your general conditioning. You'll be less tired and sweaty, and much warmer and happier for it. Stretching will increase flexibility and help prevent injury.

Get used to the cold. Spend as much time outdoors as you can. Also, start to sleep in a cooler bedroom. (Open the windows!) Turn down the heat. Your body will adjust, which can make a big difference in your comfort on the trip.

Reduce your intake of nicotine, caffeine and other stimulants. These constrict the blood vessels and make for colder hands and feet. Freeing your system of these (or cutting down) will improve your circulation. Do it well before the trip so if your mood gets awful from the change, you'll be friendly again by the time of your trip!

Personal Tips

Put your glasses in a hard case in your sleeping bag with you. In the morning, you can put them on and see without having them fog up.

Carry your water bottle next to your back in the backpack. Your body warmth will help avoid freezing the water. To avoid chilling your insides with ice cold liquids when away from camp, carry a small water bottle in your shirt or inside jacket pocket next to your warm body.

Always change into dry clothes before bed and you'll sleep warm. Your clothes get naturally slightly damp during the day from your body skin moisture.

Eat a high energy snack like candy, cookies or hot chocolate before bed to generate body warmth during the night. Hard candy or a candy bar tucked in your bag can be a good emergency food in the middle of the night to increase body warmth if you wake up chilled.

Carry a pair of clean socks (preferably wool) inside your jacket or shirt all day. They'll be there; warmed by your body, to put on in case your feet get cold. If you don't use them during the day, they'll be there, warm and dry, to put on before bed.

At night, put your boots under your sleeping bag foot, or even in the bag. Trying to put on stiff or frozen boots in the morning is an experience you want to miss.