

General tips for staying warm while winter camping

The following is a list of general tips that will assist your troop in staying warm during any winter activities you may encounter. This guide is not intended to cover extreme or emergency conditions.

Drink Water

During the winter it's important to be adequately hydrated. Your body demands more water in the winter as your lungs lose moisture humidifying and warming the dry, cold winter air. The average person needs about 1.5 to 2.5 liters per day, whereas a winter exertions may require 2.5 to 5 liters per day. In order to burn fuel efficiently you must keep your body hydrated.

Drinking cold water may be a difficult prospect when it is below freezing outside. To stay hydrated, make hot drinks such as hot chocolate, tea, or even hot water with Gatorade. Carry an insulated thermos, so that it is possible to have a hot drink or some soup throughout the day.

Simple way to test for dehydration

When you wake up in the morning or any time during the day your urine should be clear with no odor.

There is also a pinch test you can do. Pinch a small amount of skin on your forearm with your thumb and fore finger. If the skin returns to normal within a few seconds, you aren't dehydrated. If the skin stays pinched and is discolored for longer than one or two seconds, you are beginning to dehydrate and may need to seek medical attention immediately.

Eat All Day

When packing food, plan on carrying a variety of foods that will provide much needed calories to stay warm. Carbohydrates provide great short term energy, while foods rich in fats and protein can sustain the body over longer periods of time. Also, snacks such as trail mix can be brought to munch on throughout the day.

Early signs of hypothermia

- Cold feet and hands
- Puffy or swollen face
- Pale skin
- Shivering (in some cases the person with hypothermia does not shiver)
- Slower than normal speech or slurring words
- Acting sleepy
- Being angry or confused

WAYS TO STAY WARM IN WINTER



The most important thing that anyone brings with them on a winter camp out, or any camp out, can't be bought in any store or made at home. It is a *positive mental attitude*. Don't go camping without it!

Keep warm by following the guidelines that spell the word: **C-O-L-D**

CLEAN - Clothing should be clean. Since insulation is only effective when heat is trapped by dead air spaces, keep your insulating layers clean and fluffy. Dirt, grime, and perspiration can mat down those air spaces and reduce the warmth of a garment.

OVERHEATING - **Avoid it.** Pace your activity to avoid overheating which causes you to sweat. Sweat will dampen your clothing and cause chilling later on.

LOOSE LAYERS - Use loose layers to keep warm. Warm air is trapped between the layers, keeping you warmer than one single bulky layer. By adding or removing layers, you can regulate your body temperature. Wear *loose fitting clothes* that will not restrict the blood flow and that will ventilate or wick the moisture away from your body.

DRY - Keep all clothing, bedding and your body dry. Damp clothing and skin can cause your body to cool quickly, possibly leading to frostbite or hypothermia. Keep dry by: avoiding cotton clothing, brushing snow from your cloths before it melts, and loosening the clothing around your neck and chest.



WHAT KIND OF CLOTHES TO BUY

Choose your clothing wisely. Make sure it will protect you from the wet, wind and cold. Clothing should be bulky enough to trap air and loose enough so you can move freely. The appearance or style of your clothes is NOT important. Fancy, expensive skiwear is often not the right choice.

Wool, Fiberfill, Holifill, Polarguard and Thinsulate are good choices because they keep you warm longer when wet. Wool clothing is ideal in cold weather because it is durable and water resistant and even when soaked it can keep you warm. Wool makes excellent blankets, socks, hats, mittens, sweaters, and even pants. Army surplus stores have good wool clothing for winter camping. If wool irritates your skin, you may be able to wear wool blends or wear it over clothing made of other fabrics. Many synthetics are also good in winter for use as windbreakers and insulation.

COTTON KILLS! Do not bring cotton. Staying dry is the key to staying warm. Air is an excellent insulator and by wearing several layers of clothes you will keep warm.

Remember the 3 W's of layering - Wicking inside layer, Warmth middle layer(s) and Wind/Water outer layer. Wicking should be a polypropylene material as long underwear and also sock liner. Warmth layer(s) should be fleece or wool. The Wind/Water layer should be Gore-Tex or at least 60/40 nylon.

If you're camping in the snow, wear snow pants over your regular clothing

Footwear is important in winter camping. **Use the layering system on your feet.** Start with a pair of silk, nylon, polypropylene or thin wool socks. Then layer on a pair of heavier wool socks. Make sure your boots are big enough to wiggle your toes, with two pair of socks on. If your feet get wet, change your socks as soon as possible.

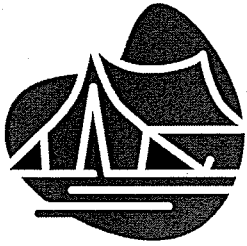
One method that can be used in wet conditions is to put plastic bags on your feet, between the two layers of socks. NEVER wear cotton socks under plastic bags as they will get wet from your perspiration and your feet will feel cold. Thin synthetic socks under the plastic bags with heavy wool socks over them are the best combination.

Mittens keep your hands warmer than gloves. In very cold conditions, wear glove liners in your mittens. Additionally, a *good pair of gloves lined with Thinsulate is a must* for many tasks around camp. Extra gloves and/or mittens are an absolute necessity as gloves and mittens tend to get very wet and/or lost.

Stocking hats are great to wear outdoors and at night in your sleeping bag. Even better is a stocking hat (ski mask) that covers your head and neck, and all of your face except your eyes, nose and mouth. A coat with a hood is also helpful, as is a scarf around your neck that can be used to cover your face if needed.

Long Underwear is an essential part of the layering system. Do not buy cotton or cotton blends. Cotton is a summer fiber; it keeps you cool.

TIP from a Scout Master: "If your feet are cold, put on a hat!"



HELPFUL HINTS – SETTING UP CAMP

1. Choose your campsite wisely. Avoid low-lying areas, such as, valleys, ravines, and canyons because cold air sinks and settles there. A good rule is to be about 50 feet above the valley floor. Also avoid the tops of a hill, vast open areas or other areas where the wind is strong. Look for natural wind blocks like large boulders, rock outcroppings, or dense stands of trees protect against wind. Breezes blow up canyons or mountains during the day, and down at night. Wind makes cold feel even colder – wind-chill factor! If you camp near a stream, cold air travels down water corridors. Don't set your tent or build a fire under trees that have snow on their branches. Look for an area between these extremes, such as a small meadow, or a gentle sloping hillside.
2. Camp with a Southern exposure. It will get a lot more sun (solar energy) and will be warmer. Whenever possible, place your tent in a location that will catch the sunrise in the morning. This will aid in melting off any ice and evaporating any frost or dew that may have formed during the night. This will also warm your tent as you awaken in the morning. Avoid the Northern exposures. They are colder. If you are in snow, look for the areas where the snow has melted – they get more sun.
3. When setting up a tent remove snow down to the ground. If you can find a safe area where there are pine needles or other dry ground cover, that will increase your insulation factor. If you must camp on snow be sure to put down a water proof tarp.
4. Use a winter- tent. You want nylon tent walls with minimal mesh, closeable vents, and a full coverage fly. It's amazing how much warmth a good winter tent can hold. If you are sleeping in a tent open the ventilation system to permit the moisture to vent out. Most tents are going to have condensation somewhere – just try to reduce the volume to prevent your sleeping bag and clothing from getting wet. If you are sleeping in a lean-to you should consider hanging a tarp across the opening to help eliminate breezes. Similarly, if you are sleeping in the open a snow wall or tarp can serve as a wind block.
5. As soon as you set up your site you should set up your sleeping system. If you are using a self-inflated air mattress let it self-inflate and then add puffs of air right before bedtime. You don't have to worry about moisture buildup even in winter; freezing of moisture in the pad isn't an issue unless you are doing this daily for months at a time.
6. **INSULATE UNDERNEATH YOU.** The ground is cold and you will lose body heat if you are in contact with the ground. You should have 3 times more (in insulating value) under you than you have on top. Make sure you never come in direct contact with the ground. Stay on a foam pad or closed-cell self-inflating pad. Self-inflating closed-cell pads are best and now available in all camping departments and outdoor stores. You can also use blankets, piles of newspaper, or a piece of carpet to help insulate underneath you.
7. Fluff your sleeping bag up very well. This will allow more time for the sleeping bag to regain its loft.

HELPFUL HINTS – BEFORE YOU START YOUR DAY

Before you know it you will be half done with breakfast and your Senior Patrol Leader will be shouting at you to grab your stuff and head down to flags or to start your events. Instead of standing around the cooking area trying to sneak a spot by the stove, prepare your tent and

your day packs. If you are a morning cook, ask a buddy to help you out. A little preparation now will ensure a comfortable day of events and a second night of comfortable sleeping.

1. *KEEP IT DRY: Keep all your sleeping gear dry. Unzip your bag during the day and let it air-out. This reduces the moisture in your bag. Keep your sleeping clothes separate and do not wear them during the day. By night they should be dry and you should change into them from the clothes that you wore during the day.
2. Using deodorant on your feet before a day in cold weather reduces the chance of sweating which can cause a chill in your feet

HELPFUL HINTS – DURING THE DAY

1. Make sure that you have a good knowledge of the signs of frostbite and hypothermia. You should be able to recognize it in others and in yourself. Tell someone right away if you or another scout is showing signs of cold-related problems.
2. Eat food high in calories – beef, nuts, stews, cheeses Eat lots of snacks.
3. Avoid caffeine. Caffeine is a diuretic which causes water loss increasing dehydration.
4. Prevent heat loss. Your body loses heat from:
 - Wind – wear clothes that protect you from the wind
 - Wet – you **MUST STAY DRY**
 - Radiation - wear a hat. 30% of your body heat escapes from your head
 - Breathing - keep your face and mouth covered if it is really, really cold
 - Conduction – avoid contact with cold objects. Keep your gloves on and drink warm fluids
8. Keep your neck, ears and head covered. Up to 30% of your body heat escapes through your neck and head. Wear several layers on your neck and head, just as the rest of your body.
9. Hoods that extend beyond your face and has fake fur trim dramatically reduces the wind chill on the face.
10. Breathe through a scarf. It will warm the air before it reaches your lungs and help keep you warm.
11. Outermost layer should be **WINDPROOF** and **WATERPROOF** – both coat and pants.
12. Mittens are warmer than gloves because they keep your fingers together. Wearing large waterproof outer mittens with wool glove liners is a great idea. Always carry extra mittens and gloves. Change them, if they get wet.
13. Wear 2 pairs of socks – a polypropylene sock liner and a pair of woolen or wool blend socks are the best combination. *Make sure you can still wiggle your toes.* Cramped feet will freeze very quickly.
14. Bring 2 changes of socks per day
15. Wear warm, insulated hiking boots. **Do NOT wear sneakers or your toes will freeze off!** In extreme weather, wear felt lined "snowmobile" boots – waterproof on the outside with felt or Thinsulate liners. Boots must be large enough to wiggle toes with 2 pairs of socks. Cramped feet hurt and freeze!
16. In an emergency use plastic grocery bags or bread bags over socks. This keeps your boots dry from excessive sweating and if your boots get wet from the outside. You will have to change your socks more frequently.
17. Wear long johns (thermal underwear) – tops and bottoms. Bring an extra set to change into before going to sleep. It is important to change *all* your clothing before retiring.
18. Wear wool, if possible. If not wool, then wear Polar Fleece. Do NOT wear cotton. It retains moisture and gets wet easily. It will keep you cold....
19. Suspenders are better than a belt in the winter. The belt cuts off the warm airflow.
20. Wear the right amount of clothes. You should be comfortably cool – not hot. If you are hot you will get wet from sweat and become cold. Match your clothing to the exercise

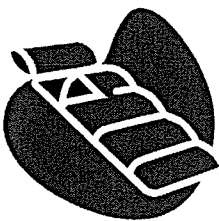
level. You need less layers when you are "working" than you do if you are "standing around"

21. You should never eat snow or drink lots of cold liquids. They will make your insides cold. Drink lots of warm or tepid liquids.
22. **Drink lots of liquids.** You lose a lot of body fluids on the cold and never even know it. *Try to keep your water bottle warm by keeping it close to your body.*
23. Be active enough to keep warm without sweating. Standing still or sitting for long periods of time will not keep you warm.
24. Carry a whiskbroom to brush the snow off. The idea is to KEEP DRY. If your clothes become wet, change them immediately.
25. Bring a campstool. Don't sit on the cold ground.



HELPFUL HINTS – FOOD PREPARATION

1. Bring extra food that doesn't need to be heated or cooked. Granola bars, trail mix, etc.
2. Keep a pot of hot water available for cocoa or Cup-a-Soup – these warm from the inside.
3. Always eat hot meals (breakfast, lunch, & dinner.) Dutch ovens are the best – they keep the food hot longer. It doesn't need to be fancy DO cooking. Meals should be 1-pot meals to keep cleanup to a minimum. Don't get too fancy with the meals - it's hard to chop onions & carrots at -10°F with gloves on. Prep all meals at home in the warmth of the kitchen.
4. Shelter the cooking area from wind (walls of tarps, etc.)
5. Fill coffee/cook pots with water before bed. It's hard to pour frozen water, but easy to thaw it if it's already in the pot.
6. Start hot water for cleaning, before you start cooking.
7. Good foods to eat would be Beef, poultry, fish, eggs, corn, beans, whole-wheat bread, peanut butter, macaroni and cheese, vegetables and fruits, butter, nuts, cheese, salami, and bacon. Some of these would make excellent snacks for the campout. Avoid sweets.



HELPFUL HINTS – PREPARING FOR BED

1. Drink all day, but stop one hour before bed.
2. Go to the bathroom before bed and save yourself a middle of the night trip in the cold.
3. Do calisthenics to get your circulation moving and your metabolism going. Take a brief hike around camp, or do jumping jacks or pushups to increase your metabolism and get warm before getting into the sleeping bag.

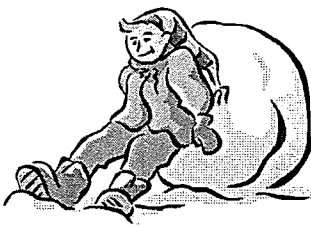
4. Fill a couple of leak proof Nalgene water bottles with warm water and sleep with one between your legs (warms the femoral artery) and with one at your feet. Or use toe/hand warmers. Toss them into your sleeping bag before you get in. A variation of this is to use disposable heater packs or hand warmers, which costs a little extra money but may last up to 8 hours.
5. Put a couple of long-lasting hand warmers into your boots after you take them off. Your boots will dry out during the night.
6. Give your sleeping bag a good fluff just before getting in it. This also helps the bag retain loft throughout the night.

HELPFUL HINTS – AT NIGHT

1. Insulate your sleeping bag from the ground with a full-length foam bed pad. A close cell pad should be at least $\frac{3}{4}$ inch, while an open cell pad needs to be $1\frac{1}{2}$ inches thick. Place the bed pad on top half of a survival blanket silver side up allowing the exposed half to be pulled over the top of your sleeping bag as a cover.
2. Foam pads can be purchased at the Army/Navy store or Sports Authority for less than \$10.
3. Put a survival blanket on the floor of your tent, silver side up. It will keep moisture and cold out. Survival or Emergency blankets are available at Sports Authority, EMS, etc. for about \$10.
4. Make sure your bedding and sleeping clothes are dry. Air your bedding during the day to allow body moisture to escape. Sleeping bags will dry, even in freezing weather.
5. Never sleep with your mouth and nose inside the sleeping bag. Breathe outside of it. Your breath contains a great deal of moisture that can cause dampness to collect in the bag as you sleep. **The average adult loses one pint of body moisture while sleeping.** To keep your face warm, wear a balaclava or wrap a scarf around your face.
6. Change your clothes before going to sleep. Your daytime clothes will be damp from sweat and are dirty. This will cause you to chill.
7. Make sure your feet are as dry as possible before going to bed. This can be done by having a pair of dry sleeping socks or polarguard booties in your bag for sleeping only. Also, you can “dry” wash your feet with a good foot powder that contains aluminum chlorohydrate, which helps dry the skin and reduce perspiration.
8. Put on clean socks and polar fleece booties for sleeping.
9. Wear a hat to sleep. 30% of your body heat escapes through your head.
10. Your sleeping bag needs to be a cold rated (at least -20 degree) bag. If not, use two bags, one inside the other. Alternatively, put a polar fleece blanket, sewn on 3 sides inside your bag for extra warmth.
11. No cots or air mattresses! Better to lay on with 30° earth instead of -10° air.
12. Keep your boots warm and dry at night. If necessary, after cleaning and drying them, put them inside a plastic bag and then in the bottom of your sleeping bag.
13. In the morning, put boot warmers in your boots before putting them on.
14. If you have removable boot liners, remove them before going to bed. They will dry quicker that way.
15. Wear a sweatshirt with a hood at night to keep your neck, head, and shoulders warm.
16. Dress and undress in your sleeping bag.
17. Keep your clean clothes inside your bag or underneath it.
18. Fluff your sleeping bag before getting inside.
19. Nibble on high calorie food before going to sleep. Pepperoni or cheese is a good choice. Never eat or store food in tents.
20. Most cold weather bags are designed to trap heat. The proper way to do this is to pull the drawstrings until the sleeping bag is around your face, not around your neck. If the

bag also has a draft harness make sure to use it above the shoulders and it snugs up to your neck to keep cold air from coming in and warm air from going out.

21. Put tomorrow's clothes under your sleeping bag. If you put tomorrow's clothes between your sleeping pad and your sleeping bag, your clothes will be warm when you go to put them on the next day. The additional layer between you and the ground will also help you keep warm.
22. In an emergency, cardboard makes a great insulator. Old newspapers are also good insulation. A layer of foam insulation works too.
23. Bring a piece of cardboard to stand on when changing clothes. This will keep any snow on your clothes off your sleeping bag, and help keep your feet warmer than standing on the cold ground.
24. Use the latrine BEFORE getting in that sleeping bag! No one wants to get up in the middle of the freezing night. But if you have to go, get up and go! If you must go, use a pee bottle, it's better than exposing yourself to the elements. Just make sure you label the bottle! Besides, holding it in requires your body to waste energy (calories) trying to heat up the water in your bladder to 98.6 degrees.
25. Use a sleeping bag liner. There are silk and fleece liners that go inside the sleeping bag. They will lower your sleeping bag's rating by up to 10 degrees. Or buy an inexpensive fleece throw or blanket and wrap yourself in it inside the sleeping bag
26. VENTILATE YOUR TENT: Leave the back or top flaps of your tent open about 4 inches. This will allow the moisture from your breath to escape out of the tent and not collect on the sides. Closing the tent up will not keep it warmer.
27. DO NOT DRY "WET" CLOTHES IN OR UNDER YOUR BAG: Moisture will travel from wet clothes to your sleeping bag.



OTHER HINTS

1. It always takes longer to do things in the cold – Plan accordingly.
2. A zipped up coat pulled over the foot of a sleeping bag makes an extra layer of insulation.
3. Cooking time will double. Always use a lid on your pot to trap the warmth.
4. Wear rubber gloves to wash dishes. They keep your hands dry.
5. Try to keep your menu to "one-pot" meals. Chili, stews, pasta and beans are good choices.
6. Always collect twice as much firewood as you think you need. Remember it takes twice as long to cook, so you use more fuel.

One last word on gear. When you drop something in the snow, like a pocketknife or any other small item, you can easily lose it. It's a good idea to tie brightly colored cords or something to all the gear you bring so it will be easier to find if dropped. Also pick up all gear at night before you go to bed. It's amazing what can be lost and forgotten under an all night snow.

Detailed Sleeping Bag Information

How to Stay Warm in a Sleeping Bag

Seems simple enough: Buy a very warm sleeping bag, and wear some warm sleeping clothes, and you'll be comfortably warm at night—right? Unfortunately, that may not be true, and the solution can be a bit counterintuitive.

First, if absolutely helps if you have the essentials:

- * a high-quality sleeping pad,
- * a shelter with a ground cover under it which is appropriate for the situation, and
- * a sleeping bag rated for the conditions (not too warm of a bag). Mummy bags are warmer than rectangular bags.

These are essential since lying directly on cold ground will draw warmth out of you fast, causing your body temperature to drop. And if you're using a two-season tent in the dead of winter and a 40-degree bag when it is 5 degrees at night, not much is going to help you stay warm.

So, after the essentials are in order, how can you avoid being cold at night? Over-dressing in the sleeping bag and wearing cotton at night are the biggest mistakes people make.

1. Do not over-dress in your sleeping bag.

Why: If you over-dress, you'll initially be snug and warm but inevitably you'll wake up in the small hours of the morning cold. The culprit is perspiration. You'll overheat and perspire, causing you to become cold. Water is a very efficient conductor of heat and, then, as the perspiration evaporates your body temperature lowers. This situation is compounded by the natural lowering of the body temperature during sleep. The end result is an uncomfortable or even miserable night.

What to do: Don't overdress in the sleeping bag! But be prepared; under-dressing is equally bad. When you get in the bag if you are very warm, either remove some clothing or open the bag until your temperature equalizes. You can always add clothing through the night or zip up the bag.

2. Never wear cotton at night.

Why: Wearing cotton has the same effect as if you placed a wet wash cloth on your body. Cotton absorbs and retains moisture, which makes the overheating-perspiring-becoming cold problem even worse.

What to do: *Never* wear cotton while you sleep. Wear some type of wicking material instead. There are many options and this type of clothing can readily be purchased at any sporting goods store. Look for words like "wicks moisture away from the body" on the packaging and check the material to ensure that there is no cotton in clothing. Also some of us in the club use sleeping bag liners made of a material designed for wicking moisture like CoolMax and we're amazed at the difference that makes.

Your sleeping bag should be checked regularly for thin spots, shifted stuffing, etc. Get it dry-cleaned once in a while, too. If it has a nylon interior, buy a flat flannel single-bed sheet and make a liner. (Nylon is non-insulating, slippery, and non-absorbent. ie, nasty to sleep on.) One generally doesn't need an Arctic 5-star rated bag for most BSA events. As a rule-of-thumb, you will be comfortable at a temperature of about 20' warmer than whatever the

bag is rated for. Note: age does not necessarily mean a bag is not any good. It's condition, original quality, size in relation to your size, cleanliness, etc. are more important.

Sleeping System

I use the word *system* again when talking about what you use to keep warm and comfortable at night because like your layering system you use for clothing, your sleeping system is similar. The difference is that at night it is generally colder, your totally inactive, and your laying down on the cold ground.

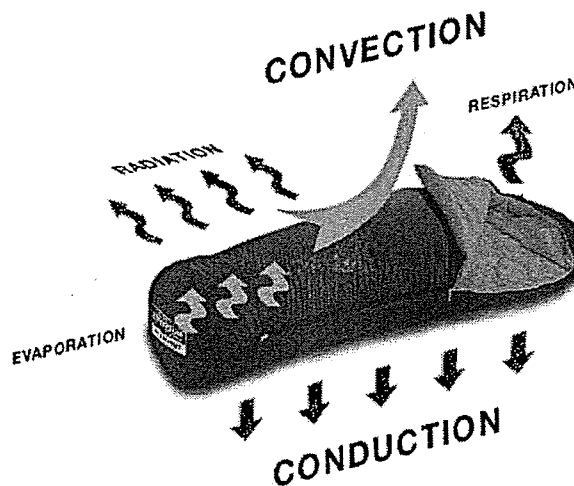
Heat balance

If we feel warm, then the heat that we are producing is equal or greater than the heat that we are losing to the environment around us. We generate heat through our metabolism.

Our ability to manage the different way we lose heat will determine how comfortable of a night we will experience.

We lose heat through:

- Conduction to surfaces we touch, especially the ground below us.
- Convection as air circulation carries away heat and respiration losses from heat in the air we exhale.
- Evaporation of moisture from our skin (mostly sweat).
- Radiation of infra red heat.



Regardless of price and rating, a good way to measure the relative "warmth" of a sleeping bag is to take a measurement of it's loft. You can do this by placing a fully fluffed-up sleeping bag (certain insulating materials like down can take a short while to fully loft) flat on the floor, and using a ruler placed vertically next to the bag, measure the total loft of the sleeping bag. This is a great way to compare similar sleeping bags before purchasing them at an outfitter, and may be an indicator of which sleeping bag will insulate you more effectively, regardless of their temperature ratings.

Your first line of defence is a shelter like a tent, lean-to, or snow shelter. A tent will be used most of the time because it is easier to put up and there may not be enough snow or you may not be trained to make a snow shelter. Keep in mind however that a tent is not made to keep you warm. It is a defence against wind and precipitation. Unless you have some kind of heater, you can't expect your body heat to warm a tent. With this in mind, it is important that you keep your tent's venting system open at night so that the vapor your body gives off at night can escape, avoiding a shower in your tent. To help stop melting snow from soaking through the tent floor, put plastic under the tent and inside the tent. This also helps protect the tent floor. Hopefully the troop has the tents and plastic so this need not be on your packing list. Always check with your Patrol first though for sleeping arrangements.

The next thing you want to do is insulate your body from the cold ground. Even the best sleeping bag you can buy does not insulate very well on the bottom because your body weight compresses the insulation and makes it useless. Many good bags even have less insulation at the bottom to keep their weight down. The best way to combat this is to use a foam pad. The closed cell pads (exercise pads) work the best as they don't absorb water, making them useful in wet conditions. More than one pad can be used. If you want to spend a lot of money, the open cell pads inclosed in a waterproof, inflating shell (thermarest) are even better.

Your sleeping bag is the next defence. A sleeping bag's function is to trap body heat in a small area, while letting body moisture out, to keep you warm. Obviously, the better the sleeping bag, the easier this can be done. However, the same method of layering can be used for sleeping as for you daytime clothing. Who ever suggested that you should sleep in you underwear (or less), probably never went winter camping. As long as your cloths are not wet, you can wear anything in your sleeping bag as you normally would outside. Plus you can add a blanket or two inside the bag if you have room. Remember wool is the best. Just remember not to make it too tight in your bag which defeats the purpose of the layers.

Heat loss from your head can cause you to be very cold at night. If you don't have a mummy bag with a hood, then wear a stocking hat. *Never* put your head into your bag and breath inside it. The moisture your breath gives off will soak your bag.

Your sleeping bag can act as a protection from freezing for things like cameras, water bottle, and your boots. They can be put into plastic bags and placed under the foot of your bag or inside your bag at your feet if there is room. There is nothing more chilling then trying to put on frozen boots in the morning. (Tips: Brush all the snow off your boots before putting them in your bag. Put hot water in your water bottle just before you go to bed. This will help warm your bag. Your jacket can be rolled up and used as a pillow and insulation for your head.)

Sleeping Bag Temperature Ratings

The temperature rating is derived as the lowest temperature that the average person can tolerate and still remain comfortable within the bag.

The label on the sleeping bag said it was good to "20 below," so why were you shivering through the night when the air temperature only dipped to 15°F?

Welcome to the esoteric, arcane, and downright confusing world of sleeping bag temperature ratings. No other topic is guaranteed to generate as much cynical laughter among outdoors people.

You would expect that when purchasing a bag that claims to be rated to 30°F it will keep you warm down to 30°F, right? After all, you expect as much from a 40,000-mile tire purchased for your car, and that tire costs a lot less—and arguably performs a more vital function—than a nylon cocoon stuffed with spun fiber or goose down.

Yet, in the field—or forest, or atop a glacier—that 30-degree bag can leave you cold well shy of its stated performance rating. Why are sleeping-bag temperature ratings so unreliable and what do you need to know about them to select a sleeping bag that can get you through the night comfortably? Read on.

It turns out that the process of testing sleeping bags for their warmth rating is not as easy or precise as you might think. A brave attempt by makers of sleeping bags and the outdoor industry group that represent them recently failed to regularize the testing process and take the guesswork out of buying a sleeping bag.

The upshot? Savvy sleeping bag buyers should treat temperature ratings not as immutable absolutes, but rather as suggested guidelines that can assist them in finding the ideal sleeping bag.

Think of a 30-degree rating, for instance, as applying to the typical camper using the bag under typical conditions, then think of yourself as anything but typical (which you knew already!). Combine your knowledge of how you are different together with the manufacturer's (maybe optimistic) rating, and you can make a satisfactory sleeping bag choice. Here's how:

The Correction Factor

You've already figured out the minimum overnight temperature you'll likely encounter. Now check yourself against the following 10 factors that can influence how warmly or coldly you sleep, and adjust the minimum temperature appropriately.

Don't get overzealous and add up a massive correction factor, especially if you camp in warm climates (above 32°F) anyway.

Sleep style. Adjust upward or downward by 5 to 15 degrees depending on whether you "sleep warm" or "sleep cold."

Acclimatization. If you're slow to adjust from a cushy room temperature of 68 degrees to life in the cold outdoors, then correct downward 5 to 10 degrees (for example, instead of a 30-degree bag, get a 25- or 20-degree bag).

Food intake. Do you eat enough when you recreate outdoors (no adjustment necessary) or do you use your trips as opportunities to diet (correct downward 5 to 10 degrees)?

Hydration. Adjust downward by 10 degrees if you are not a faithful guzzler of water and sports drinks. The enormous volume of water lost through sweat and the mere act of breathing can mess with your body's heating and cooling system.

Tiredness. The occasion you are really tired will be the time you most need a good sleep, so make a generous correction for this—as much as 5 to 10 degrees downward—if you take long trips where cumulative sleep deprivation would be dangerous.

Bag fit. Can you use a close-fitting bag without feeling constrained? If not, correct downward by 5 to 10 degrees. Can you sleep with the hood cinched down to a small peep hole around your nose and mouth? If not, correct downward by 10 to 20 degrees in really cold climates.

Dampness. Do you camp in damp conditions, such as wet coastal climates, or go on river trips where despite your best efforts bags get damp? If so, correct downward by 5 to 10 degrees if you'll be using a synthetic bag, and 10 to 20 degrees downward for down.

Body movement. Tossing and turning in a bag acts as a bellows to blow warm air out. If you're a thrasher, then correct by adjusting downward 10 to 20 degrees.

Wind protection. Sleep in a four-season tent (adjust upward 5 degrees), a three-season tent (no adjustment), or underneath the stars (downward by 10 to 15 degrees). Wind has much less effect if the bag shell is a very tightly woven microfibre or a laminate such as Dri-Loft or Stormlight.

Storage. A bag that's been used often for years (correct downward 5 to 10 degrees) and stored improperly (correct downward 10 or more degrees) loses loft and therefore performance. Sleeping bags should be removed from their stuff sacks as soon as possible and stored unrolled and loose.

You should now have a good idea of how much of a correction factor to apply to the minimum expected temperature of the bag you're looking for. If this puts you into a ridiculously low-rated bag, like 30 below, and a correspondingly low remaining bank balance, consider buying a slightly higher temperature rated bag and supplementing its performance by wearing clothes and booties to bed, using a bivy sack to eek out an additional 5 degrees of warmth (more in drafty environments), or using a vapor barrier (definitely an acquired taste!).

