



Okpik Training

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*Non Semper Erit Aestas
It Ain't Always Gonna Be Summer*

· Keep **C_O_L_D** to Stay Warm - keep Clean, avoid Overheating, wear Layers, stay Dry

Clothes Layering The Three W's

A typical layer system consists of an inner "Wicking" layer of thin material to remove moisture from the skin, a thicker middle "Warmth" layer to trap air and provide insulation, and an outer "Weather" layer, a shell to keep off the wind and rain while allowing perspiration to pass through.

■ Wicking Layer

- Thin polypropylene ("poly-pro") underwear.

■ Warmth Layer

- Synthetic, wool, or non-cotton shirt
- Fleece or wool top
- Optional sweater to go immediately over underwear

■ Weather Layer

- Breathable or waterproof shell.
- Windproof shell to go over the warm wear in dry, windy conditions.
- Down or synthetic-insulation-filled garment in camp and during rest stops in cold weather.
- If the weather is wet as well as cold, another pile or fleece jacket could be substituted for the down garment under the outer shell.

A general rule is to be sure that all of your clothes are loose fitting. If the clothing is tight, the outside cold will be able to seep through as the inside heat leaks out at those points, and you will not keep warm. Remember that the layer system will only work when the clothing is loose enough to trap air between the layers.

The secret to staying warm is to wear layers of clothing, control sweating by taking off a layer before you begin to sweat, and to keep out of the wind.

If you combine different fabrics in multiple layers, you can maintain a comfortable body temperature without excessive sweating. Throughout the day you will need to "layer up" and "layer down" as temperature conditions and activity levels change. Through experimentation, you can determine which of the inner, middle, outer, and shell layers you require in various situations. Also, different parts of your body may require different layering combinations. The layers should not constrict your movement. The outer layer should not be too tight, since tight layers can compress the dead air space between layers below, thereby reducing their insulating value.

Without a doubt, the worst clothing you can bring on a trip to the wilderness is blue jeans. In most climates and environments, you should minimize your use of cotton clothing. Although cotton is comfortable to wear, cotton fibers absorb water and retain water. Once wet, cotton loses heat 25 times faster than dry clothing. Wet cotton clothing can be a significant factor in hypothermia. In warm weather, some cotton-synthetic blends can be used, since they dry faster than 100% cotton, and do not absorb as much water. **Never wear cotton in cold conditions as a form of insulation.** If you must wear a cotton-blend in warm weather conditions, make sure you bring additional non-cotton clothing in case of unexpected cool or wet weather.

COLD WEATHER NUTRITION

Planning food for winter trips must take into account the demands the cold weather and physical activity place on the body along with the difficulty of preparation (*it takes more time and fuel*)

Activity

Caloric Requirement (Kg-Calorie/day)

Base Metabolism	1,500 calories
Sedentary lifestyle	2,500 - 3,000 calories
Three season backpacking	3,500 - 4,000 calories
Winter backpacking	4,500 - 5,000 calories

Foods come from animal and vegetable sources and serve three functions in the body

Fuel - to provide heat energy or calories

Building - repairing, or maintaining body tissues

Help Regulate - the body processes

Food Types

- 1. Carbohydrates - (50%)** the main source of energy. They are grouped together as starches, sugars, and celluloses (*dietary fiber*). Starches and sugars are quick-energy foods. Candy, cereal, bread, rice, macaroni, dried fruit, and vegetables.
- 2. Fats - (30%)** the highest energy food. Gives a diet its "staying" qualities helping to satisfy your appetite. Margarine, nuts, cheese, eggs, and fats from pepperoni, salami.
- 3. Protein - (20%)** the most common substance, other than water, in your body. Its main function is the growth and maintenance of body structures. Meat, fish, cheese, milk, eggs, nuts, and grains.

Meals

Breakfast - should be a good mix of all three major food types, quick, simple and complete, (*foundation for full day's work*) Hot cereals, Granola bars, Fruit, Fruit juice, Hot Drink. The sugars will get you started and the proteins and fats will keep you going.

Lunch - should provide high-carbohydrate energy with minimum preparation. You should include all the food groups by having some of the following items: meats, cheeses, nuts, dried fruits, raisins, cookies, candy, and granola bars. Drinks should be hot.

Dinner - the most complicated meal of the day, should provide adequate calories and the highest amount of protein for the day. This provides warmth and promotes tissue repair during the night's rest. A hot main dish, preferably a one-pot meal which includes a starch, vegetables, and protein. High nutritional crackers, fruit drink, hot drink, and dessert.

Food Preparation Tips

Use insulated - plastic cups, bowls, and utensils

Rice - one of the best items in your food list, very versatile easy to pack and prepare

Fats - are important in the winter to release heat and energy slowly

High quality proteins - milk, meat, and eggs; should be half of your protein intake

Caffeine - can accelerate dehydration, use substitute caffeine free products

Whole wheat - flour provides more protein nutrients, and fiber than white flour

Peanut butter - and honey make a very good spread

Main Dishes - can be prepared at home, frozen and sealed in a storage bag that can withstand being reheated in boiling water, thereby minimizing cleanup

Food packing - minimize trash accumulation and preparation time by combining, premixing, and packing individual meals into separate stuff sacks

Stove fuel - your fuel of choice may not be appropriate for certain cold weather camping. It is important to research the facts and train accordingly (*on safety and winter usage*)

Water

Do not eat snow - takes too much energy to transfer water from one state to another

Snow can be melted - heat water in bottom of pot and add snow slowly (*more efficient*)

Other water sources - "winter solar water collector", "water machine" or "the Finnish marshmallow"

Personal water - use wide neck container, carry next to body, if possible upside down, take to bed at night

Water purification - best to boil, filtration pumps can crack as water expands from freeze, chemical treatments become ineffective at low temperatures

Sleeping Bags

When selecting a sleeping bag, you need to consider a number of factors. Unlike clothing layers, a sleeping bag doesn't offer much in the way of ventilation to control your body's temperature. Because of this, you may need more than one sleeping bag. For example you could have a heavy one for winter, and a light one for summer and fall.

Sleeping Bag Styles: The following are the three styles of sleeping bags you can find in outdoor stores:

- Rectangular - Simple rectangular bag style typically does not have a hood.
- Mummy - A form-fitting bag with a hood. The bag tapers in width from the shoulders to the legs, with little room.
- Modified Mummy - A form-fitting bag with a hood. The bag tapers as does a mummy bag, but with more width.

Sleeping Bag Fit: Fit is important in a sleeping bag, as it is in clothing. In sleeping bags, you want the bag to snugly fit your body. If your bag is too big, you will have large areas where cold air can appear and you will be cold. If the bag is too tight it will restrict your movements and may compress the insulation to a point where it is not effective.

Features to look for in a sleeping bag:

- A hood allows you to insulate your head to prevent heat loss.
- The draft tube is an insulated tube that runs along the zipper line and prevents cold spots at the zipper.
- A draft collar provides a closure at the neck area to prevent cold air entering.
- Well-designed zippers will allow you to open and close your bag easily from the inside and outside.

Types of sleeping bag insulation:

There are different types of fills for a sleeping bag, but they can be broken down into two categories: synthetic and down. Insulation provides the loft in the bag, and it is loft that provides the amount of dead air space created by the fill. The dead air space provides the warmth.

Synthetic Fibers: Polarguard, and Quallofil. These are normally used in sleeping bags and heavy outdoor parkas. The fibers are fairly efficient at providing dead air space. They are not as efficient an insulator as down, it is hard to compress into a small size, and it tends to break down over time and use, but they do not absorb water and will dry fairly quickly.

Super thin Fibers: Microloft, Primaloft, and Lite Loft. These are lightweight and efficient. They do not absorb water and dry fairly quickly. It can be stuffed down to a small size.

Down: This is very lightweight and thermally efficient. It can be stuffed down to a very small size, and has the best weight to warmth ratio available. It does absorb water to the point of being useless when wet, and it is very expensive. Some people may also be allergic to the feathers.

Winter Health and Safety Hints:

Do not sweat. Try to adjust your layers so that sweating is kept to a minimum. Sweating will dampen and chill you.

Mittens, Hats, Socks can be dried out during the day while hiking by putting them next to your skin.

They say that water must be boiled for at least five minutes before it's safe to drink. But just bringing water to boil renders it safe, even at 14,000 feet. Much of the time required to bring water to a boil works toward disinfecting it. Giardia, for example, dies at 140 F, which is well below the boiling point.

Wear sunscreen constantly. Even put it inside your nose because snow reflects sun into unsuspecting places.

If you're cold, exercise. This is a simple concept. Take four laps around your tent through two feet of snow and you are guaranteed to get warm. Drinking hot liquids also helps.

Keep Blistex, Chapstick handy for frequent applications.

Hypothermia may affect you without your knowing it. Watch your buddy and have him watch you for signs of confusion, inaction, or shivering. You must take action *immediately* to build a fire or move to a heated shelter, dry off and drink warm liquids.

Activities for Training:

Sock it to me!

To demonstrate the difference wool clothing makes in keeping you warm try this exercise. Hand each person one wool sock and one cotton sock. During your meeting time, you can go out on a chilly night and have a talk or demonstration. When everyone comes outside, have them put the socks on their hands, then dip them into a bucket of cold water. Within fifteen minutes or so, they will see a huge difference in the cold cotton hand vs. the warmer wool hand. They'll get the point.

Are you going to Eat that?

Divide the group up into patrols or equal sized teams. Present each team with three boxes. One box holds a variety of foods. Have them sort the foods into the two boxes. One box should contain the foods that meet the needs of winter camping nutrition. The other box would be the items that do not contain enough benefit to warrant taking them along.

It looked warm in the store!

This is the same concept as the last game. This time the items to sort are clothing and gear. This time have them double check labels to assure that each item is really going to keep them warm in freezing weather conditions.

There's a storm blowing in!






On a winter day hike, use the midday time to get in some shelter building practice. With the supplies they have in their packs, they need to build a shelter to get them out of a "sudden snow storm". It is a great chance to see what they retained from your classroom sessions. You may be pleasantly surprised with the ingenuity of some of the scouts. Great snowshoe outing activity.

How to build different winter time shelters:

<http://www.usap.gov/travelAndDeployment/documents/FieldManual-Chapt11SnowShelters.pdf>

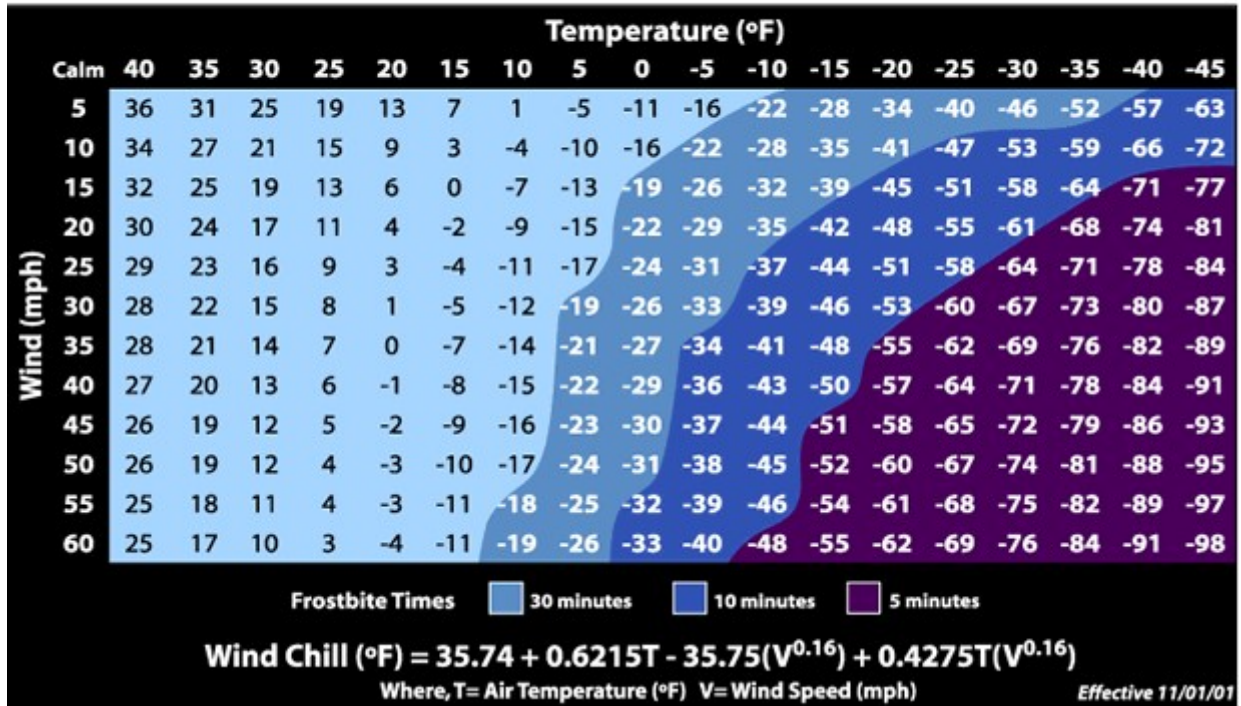
SNOW SHELTER COMPARISON

What type of snow shelter to pick for the night or for an emergency depends on the conditions and how much time you have. The table below summarizes the benefits and disadvantages of each type of snow shelter.

SHELTER TYPE	SNOW TENT	IGLOO	MOUND SHELTER	SNOW CAVE	COVERED TRENCH SHELTER
TIME REQUIRED	A few minutes	2-3 man-hours	3-4 man-hours of work + 1 to 2 hours of waiting for the snow to settle.	1-2 man-hours	15 man minutes if snow is deep enough. 1 man hour if you need to build walls for it.
PICTURE					
INSIDE TEMPERATURE	Cold, even the best snow tents don't approach good snow shelters.	Very nice and warm if it's done right.	As warm as an igloo.	A well made snow cave is as warm as an igloo but that requires perfect conditions.	Not as warm as an igloo but warmer than a tent.
SKILLS REQUIRED	None	You need to make a few practice igloos before you get one right.	You need to make one for practice before you get one right.	If conditions are good you can get very good results on your first try, the second one will be perfect.	Very little, you'll learn as you go along.
SPECIAL CONDITIONS REQUIRED	None	Deep enough good consistency packed snow	Enough snow	Deep snow	Deep enough snow or at least enough snow to build walls.
SUMMARY	A tent is the easiest and fastest snow shelter to set up. They are also the coldest possible snow shelters. You also need to carry the tent with you, snow tents weigh around 9-12 pounds and cost \$300 - \$500.	Igloos are great snow shelters, they are very warm and comfortable. They do require some skill to make. If you are a snow camper it's a great idea to learn how to make an igloo.	Pretty much the same thing as an igloo but they take longer to make and are not as strong. This shelter is very hard work if you're alone since you need to haul the snow out of the hole at the same time as you're digging, it's much more efficient to separate the two tasks between two people.	A snow cave is a great snow shelter if the conditions are right. But if the conditions are not perfect it won't be as good as an igloo, still better than a tent or a covered trench though. This shelter is very hard work if you're alone since you need to haul the snow out of the hole at the same time as you're digging, it's much more efficient to separate the two tasks between two people.	Very fast to make if you are in a hurry. Warmer than a tent but not as warm as an igloo since it normally doesn't have a cold sink.



NWS Windchill Chart



Winter Camping Awards you may want to look into:



Snowflake Award

The SNOWFLAKE AWARD is for participation in snow activities, while sleeping in a cabin, RV, or camper. Cub Scouts may qualify for this award.

Zero Hero Award

This award is presented to anyone spending a night in a tent or snow shelter at 0°F or less. The award is available from the Northern Star Council.

<http://www.northernstarbsa.org/Forms/PDF/Awards/ZeroHero.pdf>



Polar Bear Award

The POLAR BEAR AWARD is for those who camped in the snow (tent or snow shelter) for at least one night.

100° Of Frost Award

Earned by camping in a tent or shelter when temperatures are below 32°F. One point for every degree below freezing. Must accumulate 100 points in one season. Available from Longs Peak Council.



Arctic Wolf Award

The ARCTIC WOLF AWARD is for scouts completing an overnight backpack including snow travel on snowshoes or skis, including camping in the snow at least one mile from the trailhead.

Year Round Camping Award

Available to units that hold unit campouts 10 out of 12 months. The award is available from the Great Salt Lake Council.

<http://gslc-bsa.org/awards/youth/bs/awards/yearcamp.cfm>



All available from the Pacific Skyline Council:
<http://www.pacsky.org/training/winter/awards.html>