

“Some Things You Might Want to Know About Backpacking”



I always wanted to put down in writing the information about camping and mostly backpacking that I have learned since I became involved in Boy Scouts and finally I did it. Hopefully all of this information is accurate enough so that it will help someone get started and perhaps answer a few questions/concerns they may have about the subject and the gear.

This information has helped me many times in making decisions while purchasing equipment that I needed. Hopefully it will help others. Much of this information was gained through personal experience, passed to me by friends in Boy Scouting and gathered from many books and periodicals on the subject that I have reviewed. If any of the information in this appears incorrect, it is always open for discussion and change.

Contents

<u>BASIC GEAR LIST -</u>	6
<u>BACK PACKS -</u>	7
<u>EXTERNAL OR INTERNAL FRAME SYSTEMS:</u>	7
<i>External Frame:</i>	7
<i>Internal Frame:</i>	7
<u>BACKPACK COVERS:</u>	8
<u>HOW TO PACK YOUR BACKPACK:</u>	8
<i>External Frame:</i>	8
<i>Internal Frame:</i>	8
<u>ADDITIONAL PACKING TIPS:</u>	8
<u>HOW TO FIT A BACKPACK:</u>	9
<i>Fit your Torso:</i>	9
<i>External Frame:</i>	9
<i>Internal Frame:</i>	9
<u>USE YOUR HIPS:</u>	10
<u>WASHING A PACK:</u>	10
<u>KEEPING THE PACK CLEAN:</u>	10
<u>STORAGE:</u>	10
<u>SLEEPING BAG:</u>	10
<u>THERE ARE THREE SHAPE CHOICES IN SLEEPING BAGS:</u>	11
<u>SEASONABLE SLEEPING BAGS:</u>	11
<u>CARE OF A SLEEPING BAG:</u>	11
<u>GROUND PAD / PLASTIC GROUND CLOTH:</u>	12
<u>CLOTHING</u>	13
<u>LONG SLACKS:</u>	13
<u>SHORTS:</u>	13
<u>SHIRTS:</u>	14
<u>T-SHIRTS:</u>	14
<u>UNDERWEAR:</u>	14
<u>LONG JOHNS:</u>	14
<u>SWEATER/FLEECE JACKET:</u>	14
<u>JACKET:</u>	15
<u>SOCKS:</u>	15
<u>HAT:</u>	15
<u>GLOVES:</u>	15
<u>HANDKERCHIEF:</u>	16
<u>RAIN GEAR:</u>	16
<u>HIKING BOOTS:</u>	16
<u>PURCHASING NEW BOOTS:</u>	17
<u>CARE OF BOOTS:</u>	18

<u>PURE WATER:</u>	18
<u>HOW TO PURIFY WATER:</u>	19
<u>WATER FILTERS:</u>	19
<u>WATER BOTTLES:</u>	20
<u>MESS GEAR (EATING GEAR):</u>	21
<u>UTENSILS:</u>	21
<u>EATING DISH:</u>	21
<u>CUP OR MUG:</u>	21
<u>MESS KIT:</u>	22
<u>FIRST AID:</u>	22
<u>FIRST AID KIT:</u>	22
<u>MISCELLANEOUS GEAR:</u>	23
<u>TROWEL:</u>	23
<u>COMPASS:</u>	23
<u>KNIFE:</u>	23
<u>SOAP:</u>	23
<u>PERSONAL GEAR:</u>	24
<u>TP:</u>	24
<u>BODY TOWEL:</u>	24
<u>FOOT POWDER:</u>	24
<u>ROPE/CORD:</u>	24
<u>MATCHES:</u>	24
<u>SUN SCREEN:</u>	25
<u>FLASHLIGHT:</u>	25
<u>STOVES:</u>	26
<u>MY THOUGHTS CONCERNING STOVES:</u>	28
<u>COOKING POTS/UTENSILS AND OTHER ASSOCIATED COOKING ITEMS:</u>	28
<u>SCORCH BUSTER:</u>	29
<u>COOKING POTS:</u>	29
<u>UTENSILS AND OTHER ASSOCIATED COOKING ITEMS:</u>	29
<u>WALKING STICK:</u>	30
<u>TENTS:</u>	31
<u>FOOD:</u>	32
<u>OPTIONAL GEAR:</u>	32
<u>MISCELLANEOUS THINGS TO KNOW</u>	33
<u>MAPS:</u>	33

<u>PREPARING A MAP:</u>	33
<u>ORIENTING A MAP</u>	33
<u>PINPOINTING YOUR LOCATION</u>	34
<u>FOLLOWING A COMPASS BEARING</u>	34
<u>USING YOUR BACKPACK STOVE</u>	35
<u>TOASTY TIPS</u>	36
<u>A LONG LIFE FOR YOUR PACK</u>	36
<u>TYING YOUR BOOTS:</u>	37
<u>SOCKS:</u>	38
<u>CARRY A BIG STICK</u>	38
<u>ALLERGIC HIKERS</u>	39
<u>BUYING A BETTER STOVE</u>	41
<u>BUYING A BETTER PACK:</u>	41
<u>BUYING A BETTER FILTER</u>	42

Basic Gear List -

The following list was not meant to be the absolute, but to act as a **basic guide** of what to take backpacking (not including food).

A camper should take a careful look at the conditions they are going to be in and then decide what will actually be required so one is safe and comfortable. There are four seasons for backpack camping so the clothing will vary greatly. No detailed explanation of the items on the list is given in this section. They will be discussed in detail in the following sections.

- _ Backpack w/pack cover (or large trash bag to be used as cover)
- _ Large Gear bag (if you are **not backpacking**) (large trash bag works well as bag cover)
- _ Sleeping Bag (in compacted waterproof bag)
- _ Ground Pad
- _ Personal Plastic Ground Cloth (for under your ground pad) (approximately 3'x6')
- _ Plastic Quart water bottles, 2-3 ea. (**Minimum of 2 required**)
- _ Mess Gear (Bowl, 2 cups, spoon, dish soap & scrubbie, + optional favorite spices, etc.)
- _ Personal Gear (ToothBr/paste, small towel, personal supply of TPaper)
- _ Personal First Aid Kit w/Moleskin for potential blisters (+ chapstick to keep in your pocket)
- _ Rain Gear (poncho, rain suit, or rain coat/jacket, rain pants - your personal choice)
- _ Wool Socks & Polypropylene liners - 2 or 3 pair ea. (**Cotton Socks NOT recommended**)
- _ Hat (appropriate for weather)
- _ Wool or Acrylic Sweater or Fleece Jacket
- _ Lightweight Lined Windbreaker type Jacket (If you have Rain Jacket, windbreaker is not needed)
- _ Long Slacks (light weight & fast drying)
- _ T-Shirt (2 or 3)
- _ Underwear (2 or 3)
- _ Flashlight w/new batteries "**Small**"
- _ Trowel (small plastic shovel)
- _ Compass
- _ Pocket Knife
- _ Matches (wooden in water proof container)
- _ 3 compacted (rolled up) large garbage bags.
- _ Snacks (in zip-lock bag your own responsibility)
- _ Gloves (if cold weather)
- _ All clothing and gear packed in your backpack or gear bag should be packed in ziplock bags that have been tightly compressed (air out). Keep small items like compass, knife, flashlight together in one bag in upper/outer pocket of backpack. Zip-lock bags keep everything dry in case of "rain" as well as organized.
- _ If you are on medication, make sure it is in a secure container and that others you are backpacking or camping with know of your medications and why they are being taken.

Back Packs -

There are numerous types of backpacks one has to choose from. You must first decide on the type of backpacking you intend on doing. Some backpacks work best in woody conditions with well established trails and others work best in very rough conditions that require a lot of body flexibility. You may want one with a lot of space or one very compact and small with space only for the bare necessities.

If you are a beginner, you may not wish to spend a large amount of money on your first pack unless you know you are planning on sticking with the sport. Make sure your pack fits well. Regardless of it's cost, a pack that does not fit well and is painful to wear will take much of the pleasure out of the sport and possibly even ruin it for you.

I like lots of external pockets to keep water bottles in and other small gear that I frequently need access to. External straps to hold miscellaneous shirts, jackets, etc. are also nice. There is nothing worse than unloading a backpack to get one item you need.

External or Internal Frame Systems:

If you plan to do most of your backpacking on developed trails and carry gear for four or more days of travel, an external frame backpack will best fit your needs. It places the load over our center of gravity. This allows you to walk normally and helps conserve your energy while carrying even the heaviest loads. The hipbelt transfers the pack's weight to your torso. Shoulder straps simply keep the pack in place.

Internal frame backpacks are designed for rock climbing, ski touring, snowshoeing and canoeing, whenever total freedom of movement is crucial. These packs ride close to your body's center of gravity to provide superior comfort and maneuverability when carrying loads over difficult terrain. Internal frame packs are easy to store in canoes, airplanes, or buses, because there are no exposed frame parts.

Which type of backpack is right for you? Studies have shown that the average hiker carries 20-25% of his or her body weight and travels on established trail systems. For this style of backpacking, either an internal or an external frame backpack is suitable. The choice now becomes a matter of personal preference.

External Frame:

- padded hipbelt
- Mesh backband
- Padded, curved shoulder straps
- Heli-arc welded frame junctures
- Heavy-duty, powder painted aluminum frame
- Accessory pockets
- Packcloth material

Internal Frame:

- Stabilizing straps
- Ventilated backpad
- Compression straps
- Cordura or kodra fabric
- Sternum strap

Internal aluminum stays
Tapered, curved, padded shoulder straps
Packcloth material

BackPack covers:

Many backpacks are reputed to be waterproof, but never take a chance. It is recommended that you always use a pack cover in rain or snow. Overnight dew will seep into a pack damaging contents and adding unwanted weight to your pack. Many packs have a recommended pack cover brand. If your pack does not have a pack cover, you can always use a split garbage bag to cover your pack. The manufacturer "Camp Trails" sells an excellent generic pack cover that will work on almost any pack made. It is sold by "CampMore" camping supply or anyone who sells "Camp Trails" backpacks.

How to pack your backpack:

(Also read "Buying a Better Pack" in "Misc. Things to Know" section)

Make your hiking trip an enjoyable experience, instead of a pain in the neck (or the back), by packing your gear correctly. Keep in mind that your body's center of gravity is located directly above the ankles. That's why you stand up straight. However, with a loaded pack on your back, your body will lean forward to redistribute the weight and bring the new center of gravity over your ankles.

External Frame

- Heavy items should be packed in the upper portion of the pack.
- Items of Medium weight should be in the middle portion of your pack.
- The lower portion of your pack or the space farthest away from your bodies center of gravity should be the lightest objects. For instance, your sleeping bag can be lashed to the frame beneath the pack.

Internal Frame

- For best balance, place the lightest gear in the top and front of the pack.
- Put the heaviest items, such as a stove or tent, closest to your back. This gives you better control of the pack's weight, and therefore, the balance you need for rock climbing or skiing.
- Always use the bottom portion of an internal frame pack for your sleeping bag.

Additional packing tips:

- use nylon stuff bags to organize your gear.
- keep the small gear you use frequently in outside accessory pockets.

- lash long objects like tent poles and fishing poles to the sides of the pack
- pack the items you use most often in the most accessible places.
- pack anything water or moisture will damage (clothing, food, medical supplies) in heavy duty zip lock freezer bags.

How to fit a backpack

Fit your Torso:

Your height does not determine your torso length! To measure your torso, drape a soft tape measure from the seventh vertebrae (the bony protrusion at the base of your neck) down along the contour of your spine to the low point between your hipbones. To find this point, place a hand on each hip with your thumbs pointing in. The line connecting your thumbs is what you're measuring to. If your torso is less than 18 inches long, you'll typically take a small suspension system; 18 - 20 inches calls for a medium; 21 inches or more requires a large.

External Frame:

1. Load 10-20 pounds into the main compartment.
2. Adjust hipbelt to the proper torso length using lift tabs that should be present.
3. Buckle hipbelt to fit snugly around your hips.
4. Adjust shoulder straps to fit comfortably. Choose one if the height and one of the width positions that are right for you. The shoulder strap should connect to the frame at or above shoulder height, so the pack's weight is transferred to the hipbelt.
5. Maximum comfort is achieved by carrying the majority of the pack weight on your hips.
6. Use the shoulder straps mainly to position the pack on our back.
7. Sternum straps (if available) - This webbing and buckle connect the two shoulder straps, guiding where the pressure falls on our shoulders. Move the strap up or down to its most comfortable position. Don't adjust too tight or your breathing will be restricted.

Internal Frame:

1. load 10-20 pounds into the main compartment. Bend aluminum stays to fit your back's contour.
2. Buckle hipbelt to fit snugly around your hips.
3. Adjust shoulder straps to fit comfortably.
4. Loosely fasten sternum strap to check backpack fit.
5. The suspension system should allow you to fine-tune your pack to your torso length, for greatest comfort. Simply loosen or tighten pack suspension straps holding the pack to the shoulder straps. Lock into place when pack is at the most comfortable position.
6. Reach over your shoulder and pull the top stabilizing straps to

- position the pack in the most comfortable place.
7. Pull hipbelt stabilizing straps to lock pack to hipbelt for maximum control on rough terrain.
 8. Maximum comfort is achieved by dividing the load between the hipbelt and the shoulder straps.
 9. (One item to note - if you purchase an internal frame pack locally , not via. Mail order, the place of purchase should have the skill to properly fit your pack to your body before you take it home)

Use your hips:

That's a hipbelt, not a waist-belt. It should ride on your hips, transferring the weight to your skeletal structure. It's because of this belt-to-bone contact that the belt is padded. Make sure the pads don't touch in front; you'll need some room to cinch it.

Washing a Pack:

Hand wash your pack with a sponge, using soap such as Ivory Flakes. Never use detergent or washing machine because they can damage the pack's protective coating and seams. If you spill food of any type in your pack, wash immediately upon return from your trip. Food spills will result in mildew and will also result in animals of all types wishing to get to your pack when in the wild or in storage. (see "A long life for your pack" in the Miscellaneous Things To Know section of this document.)

Keeping the Pack Clean:

Store items that may leak, such as stove fuel or food, in liquid-tight bags. Check trees for pitch before leaning a pack against them.

Storage:

Store your backpack in a cool, dry place. Never store it against a concrete floor or wall, since moisture and the chemicals in concrete can damage a nylon pack. Remove flashlights before storing your pack. Battery acid will damage backpacks.

Sleeping Bag:

When you are camping, about one-quarter to one-third of your time will be spent in a sleeping bag. It should be warm (suitable for temperatures between 20 and 60 degrees), but not bulky or heavy. It is one of the most important parts of your camping gear.

(excerpt from "Backpacker" magazine)

After years of shivering through far too many cold nights, I assumed that chattering teeth and tingly cold toes were an unavoidable part of the outdoors experience - something to be endured in return for high mountain scenery, fresh air, and rare treasures like the sight of otter slicing through a still lake at dawn.

That's because I spent many years sleeping in a big, old, rectangular sleeping bag that looked like a giant cinnamon roll and stuffed into my pack about as well. From bedtime until midnight, the sack would heat me to the point of sweating, soaking the cotton lining in the process. The result: I'd spend the rest of the night feeling chilled and restless.

Now I sleep in either a down or synthetic mummy bag. They fluff up better than the old "cinnamon roll," pack up smaller and easier, and keep me warm and comfortable without leaving me in a pool of sweat (the synthetic fillings pull moisture away from my body, while their weather-resistant shells keep condensation at bay). On really cold nights, the hood, draft tube, and other technical innovations minimize heat loss and keep me goose-bump free.

There are three shape choices in sleeping bags:

Mummy - Cut to mimic a sleeping body, tapering from the shoulders to the feet and wrapping closely around your head and neck. Excess fabric and insulation are eliminated for a compact, lightweight package, and the contoured shape leaves less space inside for your body to heat, saving precious energy.

Rectangular - Think of a slumber party sleeping bag, and you know what a rectangular bag is. Although it's heavier, bulkier, and less heat efficient than a mummy, a rectangular sack allows more room to move around and tends to cost less.

Semi-rectangular – A hybrid of the mummy and rectangular bags, a semi-rectangular sack tapers from the knees down and wraps closely around your shoulders and torso. This shape is the middle of the road in terms of heat efficiency and weight, but it's ideal for larger folks.

Seasonable Sleeping Bags:

For Fall, Winter, and Spring camping I recommend a Mummy or Semi-rectangular sleeping bag of synthetic construction. There are several excellent interior stuffing types to look for. Hollofill or Hollofill II, Polarguard, Micro-loft, Quallofill, to just name a few of the synthetic varieties. Down (feathers) is excellent but has an extreme down-side. It is extremely difficult to wash this type of bag and also when it gets wet or damp, you **WILL** be cold. On the other hand, most synthetic bags still work well when damp or wet.

For summer camping, a light bag works well, unless you are in high mountains. If I am in a tent on a cot, a lightweight bag of almost any type or material works well. I often recommend and have used a fleece zipper blanket for hot or warm weather camping and take a twin bed sheet along to cover with on the warmest nights, just to keep the bugs off.

Care of a sleeping bag:

When you purchase a new sleeping bag, carefully read the manufacturer's instructions and put them away in a folder for future reference. Most bags recommend hand washing or careful washing (with mild detergent - Ivory flakes) in a large commercial tumble washer. Spin or drip dry. Do not throw your bag in a dryer to dry. You will destroy the insulation. Most manufacturers recommend to hang the bag out and let it dry naturally over a line. When dry, hand fluff it back to its fluffy state.

Never stuff your bag into its stuff sack for long term storage. This will compress the pile and you will quickly lose the pile that keeps you warm. It's always recommended that you hang from its end in a closet or lay out flat on a shelf (with nothing on top to compress).

A good sleeping bag is not cheap. Think carefully of how serious you are willing to get into the sport of camping before you buy. Also, expensive isn't always the best. One can be thrifty and find a wonderful bag. You just have to shop around a little.

Ground Pad / Plastic Ground Cloth:

Your ground pad (or mattress) is as important as your sleeping bag when it comes to your outdoor sleeping comfort. Your ground pad can keep you warm when sleeping on snow and ice and remove the pain of sleeping on hard ground. If you have ever lay down on the forest floor and had a small stick poke you in the back, well, that stick can feel like a log after a few hours unless you have your sleeping pad between you and the ground. Without your ground pad to insulate and protect you from the ground, the best sleeping bag on the market will not give you a good night of sleep.

There are more types and brands of sleeping pads than you have toes and fingers. Some are blue, green, gray, have ridges or bubbles, roll up, fold up, self inflate, easy to blow up, etc. etc..... The fact is, almost any ground pad is better than nothing. The only type I do not recommend are those you have to blow up and are a couple of inches thick. They resemble air mattresses you use in a pool. They do not insulate from the cold. You will be sleeping on a mattress of air as cold as the ground you are trying to stay away from. They may be soft but are cold in the fall, winter and spring.

For the average camper with the average budget, I highly recommend the closed-cell foam pads that are sold almost anywhere. I have used these on snow and rough ground and they worked well. For a step up, a "Ridge-Rest" is about double the cost of the normal closed-cell but they are softer and offer more comfort. To step even further up, the self-inflating pads are great but can get expensive.

Care for your Pad: "Be good to your pad and it will be good to you."

- A closed-cell foam pad requires little care. But leave a ridged or dimpled model, like the Ridge Rest, in a hot place such as the back window of a car, and the heat will bake the contours right out of the pad and harden it. Store the pad in a cool place, away from heat.
- A new self-inflating pad has probably been rolled up in its package for several months. The best thing to do with that new pad before your trip is to over inflate it, close the valve, and let it sit overnight to restore the interior foam to its original size. This will bring the pad to its maximum cushiness.
- A self-inflating pad should be stored flat with its valve open and in a dry, cool place like under a bed or in a closet. Make sure the shelf is dry first, and don't put it where pets can get at it. Dampness leads to mildew and degraded materials.
- Thorns and other pointy objects pose the biggest threat to inflatable pads. When choosing a place to sleep, pick an area free of stickers or sharp rocks, and put a ground cloth beneath your pad or tent. While hiking, carry the pad in a stuff sack or inside your pack to protect it, and always carry a repair kit.

- A closed-cell pad is your most durable option if you're hard on gear. But if you insist on an inflatable, buy one that's a little heavier but more durable. Ultralights are easiest to puncture.
- Bug repellent can damage pads coated with urethane for "waterproofness". The chemical DEET degrades urethane films quickly. If you get DEET on a pad, wash it off with a mild detergent and water. The same for sunscreen or any other chemical.
- Ultraviolet rays can damage a pad. Don't leave it out in the sun to dry for more than necessary.

Plastic Ground Cloth: This is nothing more than a sheet of plastic cut to be half again as wide as your ground pad and a little longer. I generally recommend this pad and use it in the tent to go under my ground-pad to protect it and to also keep moisture that will sweat up from cold or damp ground. I usually fold and roll this up and strap it to my ground pad or push down into the ground-pad stuff bag.

Clothing

I guess one could wear just about anything they wanted in the out of doors but when backpacking or camping, there is always the problem of how much of what type to take and what is the most comfortable. I will try to lightly discuss each major class of clothing and from my experience and study, make a few basic recommendations.

Long Slacks:

Rule number one: "**Never wear blue jeans backpacking**"! When they get damp or wet, they stay damp and wet. Even when they are not wet, they will rub your skin raw in the places you definitely do not wish to have a layer of skin rubbed off.

Rip-stop nylon or Rip-stop cotton blends are excellent materials for your long slacks to be made of. They wear well and dry quickly. There are many specialized brands of long slacks especially made for backpacking, but it is up to you if you wish to do go into that kind of money. They are nice but they do cost.

Unless it is cold or rainy, I generally wear shorts while backpacking. My legs get rid of a lot of excess heat. Long pants are nice on wet days, cool evenings, or brushy conditions. They can also be worn in case of lots of ticks in the area but all that does is keep them from crawling up your legs. Ticks will still drop from trees or brush to get to your body.

Loose pockets on the long slacks you choose are nice so your lip balm, snacks, and whatever small items you like to keep handy are easy to reach without having to remove your pack or ask a buddy to dig and search in your pack for you to get to these items. A web belt is also nice to keep the pants up on your waist. Web belts generally do not cut into you like leather. An elastic waist often slides down and will cut into your hips.

Shorts:

Like long slacks, Nylon or Rip-stop cotton blends are excellent. You have to decide whether you like short or longer legs on your shorts. Many hikers prefer the loose fitting nylon soccer type shorts but because those require no

belt and have no loose pockets that are handy, I still like shorts that use a belt (web). The looser and baggier the legs, crotch and butt, the better. When out in the wilderness, you should not be worried about style, but about comfort. Besides, you might make someone's day by giving them a chuckle as they pass. DEET is your only remedy for keeping ticks or other insect critters away from your legs. You might also want to consider non scented sun screen on those normally hidden legs.

Shirts:

I always recommend at least one long sleeved shirt for any trip, however hot it may be. The choice is yours, but I like an old worn out white cotton shirt or perhaps the long sleeved t-shirt type (loose fitting). The use is endless: wear under rain gear, hot sun to prevent sun burn, cool days or evenings, help keep bugs off, etc..... For winter or cooler weather I take a comfortable flannel shirt or warm cotton or synthetic turtle neck t-shirt type.

T-Shirts:

Regardless of whether my outing is for a weekend or a week or more, three T-shirts are the requirement. 100% cotton is strong but a little warmer to wear. Cotton blends do wear better. I prefer lighter colors (not black, dark blues, deep reds, etc because they are cooler. A dark shirt will quickly roast you in the sun or on a hot day. White is cool, but you may only see it nice and white once - the day you purchase it.

T-shirts with the big writing or pictures on the front and back turn out to be very uncomfortable, as most of that stuff is "cooked in rubber". This stuff does not absorb sweat and feels terrible. If you must have that stuff on your shirt try to get the type that is dyed into the fabric or keep the writing or image on the front and keep it small and high to one side.

Underwear:

I always take three pair of whatever brand or type I prefer. Several brands of special underwear for backpacking is available that reputedly keep you very dry and comfortable when you sweat and do not bind, chafe, etc. They cost! The choice is yours. I prefer my choice of newer and well fitting jockey shorts. Some people do not wear underwear but wear slacks or shorts that have the mesh underwear built in. My experience with those is that they pinch, bunch up in the crack of my butt, they do not absorb sweat,, I do not like them, but the choice is yours. Be prepared with underwear available the first time if you decide to try them. Also, some people do not wear underwear period.....

Long Johns:

I take these only for winter or cold weather camping or backpacking. Very nice if really cold and are nice to sleep in at night as they generally breath well and keep heat near your body. There are many brands of these made of many materials. Polypropylene is among the best as it wicks moisture away from your body and will keep you warmer even if you are damp. I have always used the generic cotton blend variety and they have met my needs. Again, the choice is yours.

Sweater/Fleece Jacket:

Even in the summer a sweater or fleece jacket should go with you. The sweater should be wool or acrylic as these materials will hold body heat even when wet. The same for the newer fleece jackets. If you run into a summer rain-storm you can quickly loose your body heat and one of these

items can be a life saver. I personally once sat under a dry shelter during a summer thunder storm feeling like I would freeze to death. I put on a wool sweater and quickly warmed up to a comfortable level. This item is like a first-aid kit. Never camp or hike without one. They can be a little bulky but this can be reduced by compression and a few large rubber bands. Keep in a sealed zip-lock bag until needed.

Jacket:

Unless you are winter back packing, the only jacket you should need will be of the nylon wind-breaker type. Some are lined and are a little warmer than cool nylon against your bare arms. If it is cool enough to wear the jacket, you will most likely already have on your long sleeved shirt, so the lining may not be necessary. Besides, if it is cool enough to need the jacket, layers will be best. You can use the zipper as a vent. Also, if you have a rain jacket, you can substitute that for the jacket to keep your pack weight down.

Socks:

(See item about socks in "Miscellaneous things to know")

Whether it is summer, fall, winter, or spring, **Wool socks are the best.** Wool is by far about the best material you can have for hiking socks. You should also use some type of moisture wicking type of sock liners. Polypropylene sock liners are the best. Liners will wick the moisture away from your feet and pass it on the wool which allows the moisture to evaporate. **Never** hike in cotton socks. Cotton soaks up the moisture and holds it and results in blisters and/or scalded feet.

There are several brands of wool socks and liners as well, but I personally prefer "Wigwam" brand and almost any brand of Polypropylene liners. When your feet do get damp, the liners also allow your feet to do the natural movement in your boots but cling to your foot and help prevent the friction that results in blisters. You should do all in your power to prevent blisters. Proper socks are the first step in preventing blisters that **will** quickly result in a miserable hike.

Hat:

You should always have some type of hat whether in winter or summer. Have the type available appropriate for the weather. A wool or acrylic stocking hat is great for cooler weather. Is also good to sleep in as your head is usually out of your sleeping bag and everyone knows that 75% of your body heat can be lost through your head. Keep your head warm hiking or sleeping. Any type of comfortable ball cap is good for normal weather. Also handy are the "booney" hats with the narrow brim that will help keep the sun away from your ears and neck as well as your eyes. Without a hat, the sun can quickly result in sunburn (despite hair) on your scalp and also heat your body considerably which can result in over heating or even heat stroke. Your hat will help keep you warm or cool and is a must...

Gloves:

Gloves are great in cool or colder weather. For normal spring or fall backpacking weather, lighter weight gloves should be adequate. Acrylic stretch gloves are great. especially the ones with the rubber "grippers" on the fingers and palms. They dry quickly and can be stuffed and easily put away when not needed. On cool mornings gloves are great while getting the stove lit and while cooking. Unless it is really cool, I do not wear them while

hiking, as my hands usually keep warm when walking. Nice to have and put on when taking a rest though. There are some light weight ski gloves available that are very warm for colder weather. These are usually available at winter sports suppliers.

Handkerchief:

A couple of handkerchiefs (the large red, blue, etc. bandanna type) can be extremely useful, not only for your nose, but for mopping sweat off your face and neck. Also handy for a "quick dry" towel after a quick dip in a stream or lake. Can be used as a hat ("do-rag"), emergency bandage, dish towel,,, uses are endless. I always recommend at least two on any trip. I always have one tied loosely around my neck or to the shoulder of my backpack straps.

Rain Gear:

The types of rain gear are endless. The poncho, shell type water proofed jacket, or lined water proofed jacket are the norm. Rain pants are also available and are made of the same type materials as the jackets. Light-weight plastic ponchos, jackets and pants rarely last through one using. About all they are good for is sitting at a sports event. Light plastic usually falls or tears apart in cold weather.

A poncho is handy for hiking without a pack or with a small pack. Some ponchos have oversized backs taking the pack or backpack into consideration. These are usually clumsy to use as when you are going up a hill on the trail you easily step on the front of the poncho and can trip. If they are short enough to not step on, then they are not long enough to protect you or your pack from the rain. They do allow for lots of freedom of movement underneath.

A rain jacket and rain pants of some type are recommended. Usually the waterproofed nylon jacket and pants are enough unless you are in a real rainy part of the country or have rain for hours or days on end. If so, then the more expensive rain jacket and pants are a must to have. The higher quality jackets are "gore-tex" lined ("gore-tex" lets moisture out, but not in) and usually have excellent liners that allow your sweaty body to breath. They also quite often have under arm vents and chest vents to allow moisture to escape but not get in. A hood is also usually available that will fit over a hat and can cinch up tightly with a draw string to keep the elements out. A rain jacket can take the place of the light weight jacket that is usually any gear list.

Rain pants are handy and are usually fairly light weight. They can be a must for keeping warm and dry during extremely wet periods of camping and backpacking. Your legs can give up a lot of heat. Rain pants could also take the place of long slacks listed on the gear list. If they are not of the lined variety, not always recommended because unlined pants can be very cold against the damp bare skin of your legs.

Hiking Boots:

Nothing is worse than to be out on the trail about half a day into a trip and your feet are hurting so bad that you can hardly walk another step. You have the correct type of

socks but you have blisters on your heels, or toes, or ball of your big toe, or just about everywhere. Your have tightened the boots to keep your foot from slipping around and causing blisters but your toes are jamming into the front of the boot every time you step down hill because they are too small. You may have tightened the boots as tight as they will go but your heel still slips up and down with every step because the boots are too big. The extra pair of socks you put on did not help at all. The boots cause your feet to ache because they are so stiff, they feel like ski boots. Guess you should have worn them more to break them in, or make sure they fit properly before your hike.

Whatever boots you wear, you must make sure they fit properly and are comfortable. Anyone who says that their feet are not tired or ache at the end of a days hiking is telling a “big one”. But, you can help prevent the blisters or jammed toes if you take the initial precautions well before you start on your trip.

Your feet could almost be considered about the most import part of your body to take care of before and during any hike. If you can't walk, your are in serious trouble. The first thing you must do concerning your feet is to make sure your boots fit properly when you first purchase them make sure they fit properly. If you haven't worn them in a while, make sure they still fit and make sure they are flexible and in good shape.

Purchasing new boots:

When you go to purchase boots make sure you take along a pair of the wool socks and liners you plan on using while on the trail. This way you can be assured they fit properly. Usually hiking boots that fit properly will be at least a half size larger than your regular street shoes. This is because of the heavy socks you wear on the trail being thicker than your normal every-day socks. Put your liners and socks on and walk around and get a feel for the boots. Try to stand on an incline going down hill to make sure your toes do not jam into the toe of the boots. Make sure they are not overly tight but make sure they are lot too loose. If they are too loose, you will be guaranteed to get blisters.

If you are old enough to assure your foot has reached its maximum size for a while it is worth putting a little money into good quality boots. If you are young and your foot is still growing, get a boot that you do not mind wearing around every day to school, etc. to get your money out of them. Adequate to good boots will usually cost from about \$40 to whatever you can afford. My personal favorite brand of boot is “HiTec”. This brand has always been very comfortable for me and yet economical. There are many, many brands of boots and you must personally pick for yourself.

When you purchase your boots, do your best to get a sole that is not just glued or bonded onto the leather. These type do not hold up well and the sole can separate from the uppers. The better type have a side that attaches to the sole and comes up the side of the shoe and is bonded to both the sole and shoe leather. Get a flexible sole but if it is too soft and flexible, they tend to cut and wear out faster. If too firm, they tend to wear well but do not flex or absorb impact from walking. Whether the uppers are solid leather or a leather/canvas combination makes little difference. This us usually a personal preference. I personally prefer the leather/canvas combination because they breathe better and give up moisture better. But again, this is a personal preference. Having water-proof boots is important but usually if you use the water-proof boot conditioner that you spray or paint on, you have adequate water-proofing for normal hiking. Water-

proofing can be re-applied before each serious hike. Also, really water-proof boots ("gore-tex" lined) cost a lot more than water resistant or normal boots. "Kiwi Camp Dry" heavy duty water repellent spray has always worked well for me when waterproofing. One thing to remember while hiking, "Always go out of you way as much as possible to keep from walking or stepping in mud or water". This not only protects your boots but the trails as well.

When purchasing, look for a sole lug that will get good traction but will not allow mud to clog the tread. I always look for boots with the lace hooks on the upper two or three eyes. This allows for easier lacing and adjustment. Always get boots that have metal or plastic eyes. Leather with punched eyes will eventually tear from lace pressure. Heel cups on the inside keep your heels from being pinched and thus prevents pressure blisters. Some boots come with removable foot pads and heel cups that can be taken out to clean and dry. Low tops do not offer good ankle support. Medium to high tops offer good support and will greatly assist in preventing sprained ankles. The tongue of your shoe should be attached to the shoe all the way up to where your ankle starts flexing. This helps prevent water seepage through the laces.

Care of Boots:

Always clean and dry your boots when you return from an outing. Remove any exterior mud and never put your boots near a fire or heater to dry. Place in a open area to dry naturally. Unlace and open them as much as possible. This will help the drying process and help mildew and fungi from developing. It never hurts to actually rinse the inside of your boot out with clean water while cleaning and before drying. If needed, re-apply your exterior boot oil or water-proofing when the boot is totally dry. If your laces begin to show signs of wear, replace them before your next hike. A broken lace on a hike is a real pain.

Pure Water:

What is pure Water? The most important thing is to have water free from water-borne pathogens which includes Giardia cysts, bacteria, Cryptosporidium, viruses and protozoa. These little nasties can turn a good hike or weekend outing into days and even weeks of illness and discomfort. Take care with the water you will be drinking or cooking with.

I've seen beautiful lakes up in the high mountains and pristine little creeks with water so clear, they look artificial. The water is cold and looks delicious. One thing you do not know is when the last eagle flew over the beautiful lake and did his thing over the water and thus released many little nasties into the water. As for the beautiful little creek, is there a dead field mouse hung in the branches upstream, just out of your site, whose decaying body is also releasing all sorts of nasties. A close friend I grew up with drank from just such a little stream up in the mountains of Wyoming while elk hunting. They then followed the creek upstream looking for their prey and discovered a big elk - its body decaying in the middle of the stream. My friend had not purified the water he drank from the stream and in a few hours, he was loosing everything in his body that was not attached. He came close to death over the next few days in the hospital his friends carried him into late that night. He apparently picked up some type of food poisoning and it was bad!

There is little water in the wild that I would trust to drink UN-purified. Why take the chance when it only takes a few minutes to filter or treat the water. When you wash your hands or dishes, take care to purify them as well. There are several hand purifying gels on the market that work very well. A little pool chlorine or iodine will work well in the last rinse of your dishes. I also recommend an occasional rinse of the outside of your water bottles.

How to purify water:

When in the wilderness camping and backpacking, one should always have some means of purifying drinking, cooking and wash water. There are a number of purifying chemicals on the market that work extremely well.

- **Iodine** - Iodine works very well in destroying the little “nasties” that live in “wild” water. It comes in several forms.
- **Polar Pure** - Destroys water-borne pathogens. Iodine crystals come in a little bottle made to fill and allow a specific amount of the iodine to dissolve. Then you mix a specific measured amount of the solution with your water. Always try to use clear water before you purify it. After a 15 minutes or so, the water is ready to use and drink. It does have a peculiar taste but you are thirsty, oh well..
- **Potable Aqua with P.A. Plus** - Makes water bacteriologically safe with no iodine taste. First add Potable Aqua, then add the P.A. Plus 20 minutes later. Has no after taste or coloration.
- **Potable Aqua** - Emergency Germicidal Drinking Water Tablets. A must on all wilderness trips for emergency disinfection of drinking water. One tablet, one quart of pure water.
- **Aquamira** employs chlorine dioxide, a substance used by hundreds of city water authorities to disinfect water. In an Aquamira bottle cap, mix 7 drops of Aquamira's Part A (the chlorine dioxide) with 7 drops of Part B (the phosphoric acid activator). Wait 5 minutes, then dump the mix into a liter of water. Wait another 15 minutes, or longer if the water is cold, then drink.

Tests have found that Aquamira kills bacteria, some viruses, and, most importantly, protozoans like Giardia lamblia and Cryptosporidium. That would make Aquamira superior to iodine, which does not kill crypto. Of course, these claims are pending official verification by the EPA (as of 10/4/01).

Specs

An Aquamira kit consisting of two 1-ounce bottles will treat up to 30 gallons of water and has a shelf life of 4 years. Cost is abt. \$13+

Water Filters:

A water filter in the form of a small pump to put water directly into your water bottle is the handiest type of filter. There are several top manufactures on the market. They weigh about 14 oz. On average and some work better than others. I will reference only those I have had experiences with.

- **MSR Miniworks Ceramic Filter:** Small, weighs 14 oz., Removes bacteria, pesticides, Giardia and Cryptosporidia. Has a replaceable ceramic filter element and a parts kit for eventual worn parts. Hooks onto wide mouth Nalgene bottles for easy fill

and no spill results. I own one of these and the filter element cleans easily when needed and it works well.

- **PUR Hiker Microfilter:** Also small and weighs 11 oz. Removes the same nasties as the MSR Miniworks mentioned above. Filter requires less cleaning than the MSR. A friend owns one of these and he had very good results with this while we were on an extended hike together.

As stated, the above are the only water filters I have had experience with. What you purchase is your own personal choice. Make sure you look at the items weight, ease of use, ease of repair if damage occurs in the field and the volume of safe water the filter is expected to give you with each filter.

Water Bottles:

Must be hundreds of types of water bottles available. The choice is yours but make sure the bottles are leak proof, shatter proof, and do not pick up odd flavors if food is stored in one for a day.

Nalgene wide mouth: Good bottles that hold up well and have a wide mouth for ease of use. Drinking spout lids are available. Flavor or color of the contents does not pass into the plastic.

Coleman is another good brand of water bottle. Be careful of the type with the little "pop off" opening as they can pop off when under pressure (not to be confused with the little pop up spouts). If you are in a pinch, even a 2 liter or 1 liter pop bottle will work but they are subject to splitting if dropped on rough ground. When you purchase and select your water bottles, make sure they fit the pockets or storage areas on your backpack.

Bulk water storage: When in camp it is handy to have lots of water available. A bulk water storage container can be extremely handy. Several are available that collapse into manageable sizes. One is the "**Water Sack & Pillow**". The one I have used has a 2 _ gallon capacity yet weighs only 4 oz. It is a rugged nylon outer cover with a double inner liner of 3 mil food grade polyethylene. Filled with air, makes an excellent pillow. A shower attachment is also available. Another type I have used is "**Fold-A-Carrier**". Made from durable, food grade polyethylene. A little bulkier than the Water Sack & Pillow, but handy to have in camp, if not used for backpacking.

"Hydration System" - Relatively new for the past few years. This is a flexible but tough plastic bladder bag with a tube attached that can run from the water bladder kept in a backpack side pocket or packed in a backpack. Like drinking from a flexible straw. The tube has a bite release valve that can be clipped on your shoulder strap and kept within easy reach of your mouth. No longer do you have to have a friend pull out or repack your water bottle when you need a drink. You can take a sip whenever you feel the need. I once read that when you feel thirsty you are already beginning to become de-hydrated. These bladders are great and they are very strong and do not puncture easily. My own bladder has proved to be very reliable and I now consider it a necessity. I personally like the 1_ liter

size. They come in varied assortments and also in several brand names. My own experience with "Platypus" has been good.

When you return from a camping trip, always clean and purify your water bottles and containers and dry them before closing up for storage. I always soak my bottles overnight with a tsp. of chlorine bleach and half full of water. I also carefully wash the outside to remove dirt, etc. If you put the lid on when dry, they are ready for the next trip with no cleaning necessary other than a quick rinse.

Mess Gear (eating gear):

What to eat with while in the middle of the woods? If you are alone, just eat out of the pot or package you cooked the food in, but usually one is not alone and is sharing the food. The choice of what dishes to eat from is unlimited. I have known campers to take two plastic cups that they drank and ate from during the whole trip. What ever you are comfortable with and are willing to wash and clean after you eat is acceptable. I will make a few suggestions that I have seen and experienced and you can make up your own mind.

Utensils:

If you have a small utility knife in your pack, you should not need another knife for cutting food. If you pack properly the most serious food you cut will be a hunk of cheese or beef sausage. This knife will also be handy for cutting open food packages. A spoon or two should be the only other eating utensils you will need. I recommend one soup spoon and one teaspoon made of Lexan (super lightweight and extremely strong - almost unbreakable plastic). A fork is not needed. You will not be eating steak or very lumpy food. A spoon will do everything you need to eat with. Metal spoons come in many types, etc. but are heavier. Weight can be everything. Ounces add up quickly.

Eating Dish:

Lexan also makes a nice dish but make sure you get the smaller dish (about 6" - 8 "). Also, Lexan dishes can be expensive. My all time favorite dish is an old 8" Tupperware shallow bowl from my kitchen. It is light weight, almost unbreakable, and stays reasonably cool in my hands while eating. Plus, it is a lot cheaper than the \$4 - \$5 for a small Lexan plate or shallow bowl. I have known of fellow campers that used the flexible, re-usable butter bowls for years. Use your imagination when picking a plate or bowl. One thing I do not like and that is the metal plates or bowls that come with the "mess kits". These are heavier than plastic, and hot as #@!\$ when hot food is dumped into them.

Cup or Mug:

I always recommend at least two cups to go on any trip. One for measuring water with when cooking and another to drink my favorite hot beverage from. Again, your choice of what to take us unlimited. I prefer a steel cup with a wire handle (folding or not) for big hot beverages. This cup can be filled and put directly onto the stove for heating just the right amount of water or I can also cook in it if needed. Usually comes in assorted sizes, but the 2 cup size has proven to be the handiest. Stay away from aluminum with the riveted handle. The handle on these gets as hot as what you have in the cup. As for my second cup, I like one made by Lexan. Is light weight and almost unbreakable. Does not come with measuring markers on the

side, but you can experiment at home with measuring cups and put a light scratch on the outside for , , etc. They are made of clear but shadowed Lexan and usually hold about 1 cups of liquid. Are easy to hold with hot beverages.

Mess Kit:

Biggest waste of money I can think of! Heavy, bulky, small pot is useless (will spill every time something is put into the pot and it is carried by the little wire handle). Even the plate with handle is bulky. Only thing worth while is the plastic cup with measuring markers. Keep that and sell the other parts in a yard sale. In fact, ever wondered why there are so many mess kits for sale at yard sales...???

Basically nothing else is needed to eat with while camping. Your pate or bowl, spoon and a couple of cups should be sufficient. In a pinch, one cup would do. Pick whatever you are comfortable with, but remember, you have to carry your own gear and ounces add up.

First Aid:

Take First Aid very serious. Even a scratch not properly taken care of on an extended trip can become serious. I am not going to teach First Aid. All I will do is to make some recommendations of what type of First Aid items you should have handy on any trip.

In every group of campers heading for the backcountry, one or more persons should be trained and current in CPR and First Aid procedures.

First Aid Kit:

A First Aid kit can have from 4 or 5 basic items up to 100 or more. You must assess what your basic needs are and what you may run into during your stay in the woods. How far you will be from help is the basic question. Is unlikely you will need an "expedition" type First Aid kit including everything from dental kits to suture kits. I will name a few basic items to choose from.

1. Blister Materials (Moleskin and/or Molefoam)
2. Antibiotic ointment (Plus type)
3. Band-aids (Fabric - assortment of sizes and types)
4. Alcohol antiseptic pads (in self contained packets) or Tincture of Benzoin pads
5. Non woven adhesive tape
6. Assorted sizes of self contained gauze pads
7. 1 " wide small roll of gauze (self contained packet)
8. Advil Tablets (or brand of your choice)
9. Elastic bandage (2" width minimum)
10. Antihistamine ointment
11. Antihistamine Tablets
12. Pepto-Bismol tablets and Di-Gel tablets (stomach disorders)
13. Folding Scissors - to cut mole skin, gauze, tape, etc....
14. Emergency Whistle - the plastic police whistle type is best.
Always put in outside pocket, easy to reach place on your pack.
Use in emergencies only.
15. ChapStick or any brand of lip balm. To keep in your pocket or very handy to put on your lips when needed. Use frequently.....

Miscellaneous Gear:

Miscellaneous Gear covers several items that I deem basically necessary any time I am out backpacking.

Trowel:

This is a small shovel like device that is very similar to a little garden hand shovel. It is used for your personal “cat holes” that you will be digging when nature calls. They can be made of plastic or of metal. I have used a plastic one (“Backpackers Trowel” - 2 oz) for over 10 years and it has served me well. Cost is about \$2. Another type made of metal, on which the handle folds up (“U-Dig-it” - 6 oz) costs \$17. Only you can decide how much you wish to pay for this most useful tool. Remember, weight is of the essence. Also, you should not be digging more than about 6 inches in preferably soft ground when you use it.

Compass:

This device for finding your direction should always be in easy reach anytime you are in the wilderness. No matter where you are on a trail, they often have a way of not being there before you realize it. Without a compass, it can be difficult to find out where to go next. I even take a compass with me when going on a boating trip and staying well in sight of land. There are many types of compasses available, but is recommended that unless you are a professional at using them, you should keep it simple. I recommend almost any model of Silva brand compasses. I am not going into the features needed, as even the most basic Silva brand compass has all of the features needed to find your way if you know how to use your compass and map. I do laugh at a compass that “glows in the dark”, for anyone who is trying to find there way in the dark is “nuts”.

Knife:

A huge survival knife with all of the goodies included should be left to Rambo to manage. All you should normally need is a small knife of about 3” long when closed. The Swiss Army type are the most useful. Keep this simple as well. You only need the knife blade, perhaps a screwdriver on rare occasions, cork screw to loosen a knot in a rope, and perhaps one or two other basic devices. If you meet wild animals, retreat is the best solution. I have never heard of anyone whose “handy” sheath knife prevented them from being attacked or killed. Besides, I have heard of more hikers injuring themselves by falling on their sheath knife or cutting themselves with the extra 3 “ provided by the longer blade than by wild animals. A good quality knife should be made of stainless steel so you can wash it without getting rust as a result of the washing. Keep it clean - this is one of your eating utensils as well. I always keep my knife in a small color coded nylon bag in a pocket on the back of my pack.

Soap:

The only soap you should ever need on a camping trip is “Camp Suds” or some other similar brand of bio-degradable soap. This soap is concentrated so a bottle of about 3 oz. goes a long way. A drop or two will do your normal dinner dishes, provide you “spatulate” to remove all particles and remains of food first. Of course, this is standard procedure for any experienced camper. This type soap is also an excellent body and hair washing soap. It leaves no lasting odor to attract wild animals to you, your camp site, or to your pack. Remember, just a few drops lathered up on a handkerchief will wash your whole body. A few drops will wash all of your dishes as well.

I have to put an update into this “Soap” recommendation. After some research, I have come to find out that there is a dish-detergent on the market

that is bio-degradable and is a **fantastic** grease cutter but is not listed as so. It is “Dawn”, manufactured by P&G. You can purchase an unscented version, so as not to attract animals, and use as you do “Camp suds”. It is considerably less expensive and a by far better soap for camping. You can purchase small squeeze bottles and re-package it.

Personal Gear:

A toothbrush and your small tube of toothpaste are a very important part of your personal hygiene. Just because you are in the wilderness, you do not become an animal. Your toothbrush can be downsized if you wish by cutting off half of the handle. One less “pokey” thing to pack. I keep these in a little nylon bag with a draw string so I can find them easily.

TP:

Toilet Paper, known in some circles as **AP** (“All Purpose” paper). For a weekend a flattened out _ roll should normally be enough. Keep handy in outer pocket of backpack stored in a zip-lock bag to keep dry. Do not ever forget this item or you WILL regret it.

Body Towel:

A towel is a real nice thing to have when you do come upon a lake or stream where you can jump in and clean up. Small but extremely absorbent towels that dry you quickly are available. These towels absorb 10 times their own weight. Just ring out and hang on the outside of your pack and they dry quickly.

Foot Powder:

I would hardly think of taking any hike without my foot powder. I definitely believe in the value of this small (3”) container of a most valuable product. I dust my feet freely each morning, when I stop to eat lunch or when my feet feel extra sweaty. I also dust them again before going to bed. Keeping sweat from building up and odor as well will make you a much happier camper. It also goes well on tender crotch areas that tend to sweat and become raw while hiking. I like to mix the Dr. Scholl’s standard foot powder and the same brand of Athlete’s Foot preventative powder. Makes for a much happier hike when out for a few days. A small container goes a long way when used properly.

Rope/Cord:

Whether you call it heavy cord or a small rope, I always hike with at least 50 feet of it coiled up on the back of my pack. What type you select is your choice, but I recommend the nylon parachute cord type that is about 3/16 in. diameter. This should be sufficient for the clothes lines, tie downs, and many other uses for small rope of this type. I never go camping without it. If you are in bear country, you will need at least 100 ft. of 3/8 inch flexible nylon or hemp rope for a “bear rope” to tie your “bear-bag” up into a tree each night. I found a very durable and inexpensive rope in the boating section at Wall-Mart. It was called “anchor rope”. Cost about \$6. For 100 feet and held up very well.

Matches:

Starting a fire could save your life. Make sure you keep whatever matches you take with you dry. Special metal and plastic containers are available for keeping matches in. I also have found that old prescription bottles work very well but do break easier if in a crushing situation. As for the matches, if you can find the old fashion “strike anywhere” kitchen matches, buy yourself

a few boxes to keep safely tucked away at home in a couple of zip-lock bags. The “strike anywhere” type are very hard to find anymore. I always take two containers of a dozen or so each stored in separate containers. One I keep packed with my stove, and the other in my “handy, miscellaneous item, nylon bag”. This way, if one batch does accidentally get wet, I have another supply. I do not like lighters, as you often never know when they will run out of gas or else they accidentally get discharged and are empty when you need them. Besides, matches reach into tight places like your stove or the kindling pile of a potential camp fire much easier. If you cannot get the “strike anywhere”, keep a striker glued to the outside of the match container and keep all in a dry place. Some matches are sold that are called windproof, and they do a pretty good job with starting a campfire. (Terrible for stoves, and other tight places) I also have some that are called waterproof that are lacquered and work pretty well to a degree. Always keep them in a dry place no matter what they are called or claim to do.

Sun Screen:

Better known as suntan lotion.. Always try to re-bottle into a smaller container and use a marking pen to label the new container. Always purchase un-scented sun screen as the nice smelling stuff also smells just as good to critters, especially bears. Think about that when in bear country! They can smell it long after you can't. Also, always get 30 or higher SPF. In high altitudes, the sun is brutal to the tops of your ears, face, back of the neck and back of the legs. Always apply a couple of times a day because the affect wears off and requires re-applying. Sun burn can make you miserable and totally ruin a trip. Also, there is the potentially long term affect of unprotected skin to get skin cancer. None of us wants to fool with that.

Flashlight:

Quite often new campers think that because they are out in the woods they need a big flashlight to find their way around. Actually, when it is dark one rarely strays far from camp. All you normally need a light for is to go relieve your self if nature calls, to get a little more firewood, or to find your way around in your tent. One's eyes adjust to the darkness and even on a night with no moon you can see quite well. Most likely the best flashlight for the money is the little Mini Mag-lite that uses 2 AA batteries. These lights give out a lot of light for their size and are about the most durable available. A spare bulb can even be stored in the base, and I do recommend you always make sure you have one present before you go on a hike. Actually, if you do not wish to spend about \$9 for a flashlight that could last you for the rest of your life, you could spend lots less for other double AA type flashlights but they do tend to break a lot more easily. Whenever you go camping, always start out with new batteries and be sure to carry an extra pair in case you do use lots of light and need new batteries or if the light accidentally does not get properly turned off while stored in your pack.

There are lots of lights that work well using AAA type batteries, etc. I have carried both double and single cell AA and AAA flashlights and actually, both have met my needs. Little squeeze lights work well for a quick spot of light but when nature calls, is nice to be able to not have to hold the light and other things as well. I always keep a wrist strap or a loop on my light to keep it on my wrist or around my neck. This way, I am far less likely to drop the light.

Another type of light I have carried and had good results with is the specific brand of candle light called **UCO Delux Candle Lantern**. Candle will usually one will last 8 - 9 hours. 3 replacements cost \$1.99 Always great for a weekend trip when a little light may be needed while sitting under a tree reading or whatever. Measures about 4" x 2" when closed and 6" high when open and being used. Has a spring loaded system that maintains the candle at an even height. No dripping wax. Uses 100% of the wax. If packed properly, it does not get crushed and broken. It is almost totally wind resistant because of the glass globe. Just like any open flame device, is not recommended for use in a tent.

In summary of the light topic: **The lighter and brighter, the better.**

Stoves:

A good backpacking stove is a necessity to have . The worst thing I can think of is trying to cook over a camp fire. Camp fires are dirty and very awkward to cook on. I can think of few things that a campfire is good for cooking while backpacking. A small but reliable stove is a necessity in today's "ZERO Impact" camping. There are many types of stoves. I will go through a few of the models that I am familiar with. There are several small and light ones on the market beside mentioned these that are excellent.

- MSR Whisperlite makes several excellent backpack stoves that are all very reliable.
 1. Internationale - Easy to clean and burns Coleman, white gas, kerosene, auto fuel or jet fuel. Includes windscreen, heat reflector, fuel pump and stuff sack.
 2. XKG Shaker - Burns nearly any fuel; Coleman, white gas, leaded or unleaded auto gas, kerosene. Cleans easy and comes with heat reflector and windscreen.
 3. Whisperlite Shaker - Ultralight, folds up small enough to fit into any size pot. Quiet operation. Comes with windscreen, pump and cleaning kit. Burns Coleman, white gas. Most likely one of the most popular because of its price and reliability. Easy to maintain and make repairs on when and if necessary.

These stoves require a firm and flat surface to balance well. A device also sold by MSR called "Trillium Stove Base" is designed to stabilize the MSR on snow, sand or uneven ground. It folds up to 1/3 its maximum size and will fit into the stove stuff sack or in with your pots.

I have had lots of experience with MSR stoves through friends I camp with. They all swear by their MSR stoves, regardless of the model. The MSR stoves do not come with a fuel bottle. Must be purchased separately. These come in sizes of 7, 11 and 22 fluid oz. and are made of durable aluminum painted a bright red. I recommend the 7 oz. for use with the stove and for backup fuel an 11 oz. In case of an accident with liquid fuel, I would rather loose or deal with 7 oz. rather that the 11 oz. or larger. I recommend the 22 oz. only for fuel storage use on an extended week or more outing.

- Peak 1 Apex II Multi-fuel Component Stove System: A fairly new stove on the market and I have also heard good things about it. Lights quick and easy. Burns Coleman, white gas, kerosene or unleaded gasoline. Lightweight built-in wind guards. Flame adjusts on stove and bottle. Add-on legs adjust to every terrain. Includes stove, hose, pump and 22oz capacity fuel bottle. A little bulky but stores well. Extra fuel still needs to be carried in a separate MSR type fuel bottle.
- Xpert Peak 1 - Several reliable models. Also makes the only double burner backpack stove on the market. All of these models use a butane/propane cartridge that has a patented fuel extraction system. The cartridges could be tough to find except at dealers who deal with this specific type stove. They are not re-fillable. I personally do not know anyone who owns one of these, so I cannot speak from experience on their performance although, Backpacker magazine report them as pretty good.
 1. Xpedition - A two burner stove with independently operating burners. Simmer on one and boil on the other.
 2. XPERT - Very sturdy. No words of wisdom on this one. Reputed by Backpacker magazine to be one of the best.
 3. XTREME - Plenty of heat from this one. Heavy duty. Also reputed to be good by Backpacker magazine if you need plenty of heat.
- OPTIMUS SVEA 123R - Self cleaning, burns Coleman fuel. Comes with it's own storage cup also used as a small pot or cup. Fuel is self contained. Requires no external tanks. Heat is easy to adjust. Again you will need to keep spare fuel in an MSR type fuel bottle.
- Sierra Zip Wood-burning Camping Stove - This stove burns wood. Has a small attached battery case that powers a small fan that blows the small quantities of wood or charcoal used to produce pretty hot flames. It's size is 4" x 5" and requires 1 AA battery. Reputed to heat like a small blacksmith's forge. Easy heat control with an adjustable draft. Being it has no fuel bottle, is lighter than other stoves. Only difficulty is you have to make sure that there is wood (dry, I would presume) along the trail you are camping on. Burns twigs, bark, pine cones, scrap wood or charcoal. Neat idea! Have never seen one but have read good reports on it.
- Pocket Stove - These little collapsible stoves use solid chemical fuel tablets. Produces a small hot almost colorless flame. Just enough fuel in one tablet to heat a large metal cup of water. Nice for warming a cup of water for lunch or cup of cocoa for a hot drink when you do not want to break out the backpacking stove. The chemical tablets are available almost anywhere that camping or outdoor supplies are sold. Military surplus stores also carry them. Have used often, even without the stove and just the fuel tablets placed on a rock. Handy to have around and are excellent campfire starters as well.
- Primus Techno Trail self-lighting canister stove - Setting up the Techno Trail takes mere seconds. Just screw the burner onto a propane/butane canister, rotate the three slender pot supports into position, and push the ignition. The stove almost always ignites on the first push of the button, except in very

breezy conditions. Gusts of wind slow cooking, since there's not much of a built-in windscreen, so you may want to pack a windscreen for improved efficiency. Just don't enclose the stove entirely with your windscreen; that may cause the canister to overheat.

Like almost all canister stoves, the Techno Trail's heat output drops in cold weather and as the canister empties. In testing, the temperature drop-off was most noticeable when the mercury dipped below the freezing mark.

The stove (without canister) weighs 6 ounces, a tad more than a few ultralight models out there (MSR's PocketRocket and Primus's own Alpine Micro come to mind), but it folds down to a tidy package that fits in the palm of your hand or a solo cookset.

The Techno Trail's creatively designed pot supports lock into position for stable cooking of even large pots on slightly uneven terrain. The reason: Unlike many canister-stove pot supports, these don't suddenly collapse. The supports fold away for safe packing, but should be treated with care lest they get bent.

The Techno Trail is a quiet, dependable cooker at a bargain price of about \$36.

My Thoughts Concerning Stoves:

How dependable and reliable your stove is may depend on how you treat it. Keep it safe from hard knocks and keep it clean. Always clean your stove immediately after every outing. Clean and lubricate the parts that your operating manual indicate. Always keep a repair kit with you on the trail. I know from experience when a little rubber O ring split. I replaced and lubricated it with a little olive oil. This took me about 5 minutes. When I returned home I cleaned and re-lubricated my stove properly and it was like new and ready to go on the next outing.

Be careful when flying with your fuel bottles. You cannot fly full fuel bottles of any type on a plane. Absolutely against Federal law! This includes, liquid fuel, butane/propane cartridge, or anything containing fuel. You can carry MSR type fuel bottles only if they have NO fuel smell or if brand new. I have flown with them before and have made sure they were totally dry. I left the lid off the empty bottles for a couple of weeks and for the flight. This did the trick. Once you reach your destination you can purchase fuel (always check out in advance where you can find it). Before you return home, properly dispose of any remaining fuel (liquid or gas) and make sure the bottles are totally odor free of fuel. Always ship empty fuel bottles and your stove in your check on baggage.

*Note section at end "Miscellaneous Things to Know" - Using Backpack Stoves.

Cooking Pots/Utensils and Other Associated Cooking Items:

Scorch Buster:

There is a device called “**Scorch Buster**” heat dispersion plate that is a ribbed stainless steel disk that provides more even heating when frying or simmering, helping to eliminate burned-in food residue. These are nice and are 6” in diameter and weigh 2.8 oz. Very handy to have but remember, every ounce you add on could eventually become pounds.

Cooking Pots:

There are many types of pots on the market. You can take your pick of what type or brand you like best. My all time favorite are MSR steel pots.

I have had experience with these and steel does indeed cook well without the hot spots that aluminum pots are noted for. The size of your pots depends on how many persons you intend on cooking for. Usually for two or three persons, the 2 liter pot is sufficient. You will most likely also need a 1.5 liter pot for heating water for as well. Two pots are almost a necessity. A lid that fits both pots and can be used as a frying pan is extremely handy as well. I always carry several squares of heavy duty aluminum foil for pot covering and for wrapping food I may decide to cook in the fire along the way. If used for pot covering, you can usually wash and re-use it several times if needed, for the duration of your trip.

There are some real nice pots to choose from. Again, unless money is a real factor in what you select, I would not choose aluminum. It bends, dents, and is bad for hot spots when cooking which results in scorched food. Steel or even Titanium (new on the market for the past couple of years but expensive) pots are available to choose from. Cookware is available with a non-stick coating (usually Teflon) on the inside. Might be nice if you plan on doing a lot of baking or frying. I would think you would have to be careful of the cooking utensils you use so as not to scratch and eventually damage and remove the non-stick coating.

Utensils and other associated cooking items:

- I love the spatulas and cooking spoons made of bamboo. They are extremely light and clean well. They come in a variety of sizes to fit almost any need and they are extremely sturdy. Handles can be shortened on the wide spatulas.
- Soup dippers: Best thing for this is your smaller second cup. Too many gadgets get in the way.

- I love the little stainless steel whisks that are about 6" long. Extremely handy when mixing up some soup or something that does not mix well without serious stirring.
- Small _ cup size plastic sided strainer. Necessary for properly disposing of your gray water.
- Folding strainer for separating noodles or spaghetti from the water. Can be found in almost any size. Shaped like a broad bladed knife with the strainer holes in a blade. I do not carry one of these unless I do plan on cooking something that requires separating.
- Pot holder: These gripping devices are needed to hold hot pots and pans from the edges. Several modes available but the best by far I have only found at Boy Scout supply shops. They are cast aluminum and look bulky but for gripping power they give, they are priceless. I take mine everywhere. Most backpack cook kits come with some type of pot holders. These valuable little items prevent burnt fingers and spills. They should open like pliers and clamp onto any size pot. If you buy any aluminum ones (other than the die-cast) make sure they are strong enough to lift a pot full of water from the size without bending. Steel ones are available that are also light and strong enough as well.
- Spice kit: No good camper goes anywhere without his own personal spice kit. Nothing tastes worse on the trail than bland, boring food with no flavor. Good spices are the "spice of life" when on the trail. There are many folding and zip up spice holding kits available and while these are good, a nylon bag with a draw string will work almost as well. You just do not have to empty the whole kit to get out one spice container. Used 35mm film containers are excellent spice containers. Special shaker lids made to fit these containers are also available. These lids are nice as they allow you to use only what you want, and then you close the shaker. Choose your spices according to your taste. I always have black pepper and salt. I also take a little crushed red pepper. This goes well with almost anything. Garlic powder is another necessity. Carefully select your spices and take only those you will need for a particular hike. Keep them fresh by checking before each outing to make sure critters (bugs) have not invaded your containers. They have a way of doing that between outings. Any spice you especially enjoy on the food you are taking on your trip is worth taking. Good rich flavorful food makes an outing especially enjoyable.

Walking Stick:

A good walking stick (also known as a trekking pole) is a very useful tool while hiking. It gives you extra push while climbing a hill or braces you while walking down hill, offers balance while crossing a stream, helps while crossing rocky ground, can act as a quick rain-fly pole in a downpour, etc., etc. The uses are unlimited. Some hikers feel as though a walking stick is just dead weight, but they can take a lot of strain off your legs and back while hiking once you get used to the rhythm of using one. Many are length adjustable and while light weight and made of metal, fiber-glass, and even carbon fiber. With the latest models, some hikers prefer one for each hand. They come with rubber hand grips and a wrist strap to take the strain off your wrist while gripping the handle. Once you get used to using

one, you will feel lost without one. I have used a good quality walking stick with a rubber handle and wrist strap and it was really great. For most of my hiking I have used a 5 ft. pole with the upper handle wrapped with leather to improve the grip. The choice is yours as to what you prefer, but I do recommend a good walking stick that you feel comfortable with. Many hikers now are using two of the trekking poles with the concept that four legs are better than one. See the item "Carry A Big Stick" in the Miscellaneous Things to Know section.

Tents:

Some campers do not like tents, but when it gets cold, damp, rainy, or is snowing, they usually climb in the nearest tent. On nice clear nights, the moonlight or starlight can be beautiful, but even on a clear dry night your sleeping bag will get damp. There is nothing like the security of a tent in any weather. Your tent also keeps mosquitoes and other critters from bothering you as much.

Now, my own personal opinion!! A two man tent is adequate room for 1 person. A three man tent is good for 2 persons. A four man tent is comfortable for 3 persons and you can put 4 persons in one with no gear. I personally prefer a little extra room despite the extra weight.

When you purchase your tent, you must decide the type tent you want and how much you can spend, for you can find many different types and prices. Remember, "Your tent is your home, your home is your fortress". Heard that somewhere !??? There are dome tents, A-frames, and other odd types. All are *about* equal in the service they provide. You just have to study how easy the tent is to quickly assemble. Nothing is worse than trying to quickly assemble a complicated tent in the rain... As for cost, "Usually", a more expensive tent will give you best results but not always. Choose carefully and look at several tents before you buy. Think about where you are camping and the conditions you will be camping in. Check the weight of the tent. I have used a nice inexpensive (cheap) three man tent under many varied conditions (snow, rain, hot) and it has always served me well, but sometimes I did pay with a little water seepage. It did and still does work well for my needs.

Take a look at the seams in a tent. Some of the more expensive tents will be pre-sealed with plastic or a cloth tape sealing the seams. If your seams have no extra sealant, it is recommended to use a seam sealant (comes with many tents) to seal the seams. Nothing worse than waking up in a rain storm and finding your sleeping bag soaked from water that seeped in through the seams. Note: Almost any tent will eventually get a little water. Also check the "rain fly" and make sure it covers enough of the outside of the tent to do its job. I have seen some that look like an elephant holding an umbrella. Is recommended that the rain fly covers most of the tent (Like a tent over a tent). I won't go into the mechanics of what all the rain fly does, but take my word, it is worth it!

Now!, cut a sheet of fairly sturdy plastic to put on the ground under your tent. This should be cut about 3" smaller than the base of your tent, all the way around. This will help prevent sticks, thorns and rocks from putting holes in the bottom of your tent. Will also help as an extra moisture barrier from the earth and from rain. Note I said that the ground cloth should be smaller than the tent? This allows rain to drain off the tent and onto the ground. If the ground cloth is larger than the tent, it will drip onto the plastic and then directly under your tent. Then you will have a "water bed"...

Take care of whatever tent you have. Keep it clean by washing dirt off when you get home and allowing it to dry properly before storing. Keep mud out of your door zippers. Nothing will destroy a zipper faster than getting mud and dirt clogged into the teeth. If taken care of properly, your investment will last you many camping trips and seasons.

Tip: Check the turf under your tent. When you decide on a spot for your tent, spread out your ground cloth and then lie on top of it to determine which end of the ground is up hill and where to put the head of your tent if there is a slight incline. You will also be able to detect any lumps or bumps ahead of time so you can move the tent site to the right or to the left in order to avoid them.

Food:

Food for camping is another story. Sorry, but will not go into that at this time.

Optional Gear:

There are many optional items to take backpacking and camping. I will try to think of and list a few of the more handy items. You must decide on whether the weight and “usefulness” is worth it.

- Sunglasses: Listed as a must on many lists. Will leave it up to you, but if you will be out in the open sun on open terrain and mountains, they can sure save a lot of eye strain.
- Camp Saw: These come in several types. All worth while should be light weight and when put away, should have the cutting edge well covered. Handy if cutting larger wood. Is generally suggested that if you can't break it by hand (when backpacking), it is to large.
- Fold-up “camp tool”: or whatever you want to call it. Generally comes with needle nose pliers, knife, screwdrivers, file, etc, etc. Can be very handy but can also be **heavy**. Some weigh up to _ lb. or as little as 3 oz. Popular brands are “Leatherman”, “Gerber”,.....
- Backpacking “chair”: Mention the name “Crazy Creek” and most backpackers know what you are talking about. Other brands are “Slumberjack”, “Therm-a-Rest”. In my opinion, worth their weight!!!! After spending a few years sitting on the ground, lumpy and painful logs, etc. I will never go camping without my “chair”. Some campers are even willing to carry the weight of the small folding camp stools with metal legs. A comfortable bottom means a “Happy Camper”.
- Tarp: To be light enough, this device is usually water proof nylon and is a big as you want to carry. Usually about 12'x12' . Poles are optional for you can usually tie between two trees or use your hiking sticks as polls. Used to quickly get out of the rain, to cook under, keep the sun off of you while in camp, etc. Very handy when you need shelter and do not want to be trapped inside of your tent where you cannot cook.
- Pillow: I always take a pillow when camping. Can't sleep on flat ground without one. Some campers just stuff “stuff” into their sleeping bag stuff sack and that works for them. I prefer my head as high as my shoulders when sleeping on my side. You can get nice compressible ones that go in with your sleeping bag when stuffed. Others you can blow up. I prefer the blow up type and I just put it under the head portion of my sleeping bag. Allows me to sleep well and others as well, for when my head is not propped up I snore like *#>^*!!!
- Magnesium Fire Starter: As a backup fire starter, I always carry a Magnesium Fire Starter. Can provide hundreds of fires. Always handy to

have to quickly start any wood fire. Easy to use; shave pieces of magnesium using a knife. Place next to kindling and scrape the sparking edge with a knife to ignite the magnesium. 5400 degrees F. of instant, contained heat.

- Thermometer: Nice little gadget to have. The size and shape of a GI dog tag and attached to a zipper pull. Handy on hot or cold days to keep up with the weather.

Miscellaneous Things to Know

Maps:

PREPARING A MAP:

Before you go out into the field with your map, take a few minutes to prepare it for easy use.

1. Take a sharp pencil and a good yardstick with a smooth, straight edge. Spread the map on a table.
2. Place the yardstick alongside the magnetic-north arrow in the bottom margin so that the stick lines with it perfectly.
3. Keeping the yardstick still, draw a magnetic north line along its edge all the way up the map (check the line for accuracy; you want the magnetic-north arrow to extend across the entire map)
4. When your first line is properly drawn, lay the yardstick along it again and draw a parallel magnetic-north line along the opposite edge. Move the first edge of the yardstick to the new line and again draw a line along the opposite edge. Continue moving the stick and drawing lines until there are parallel magnetic-north lines spaced evenly across the map.

These magnetic-north lines allow you to orient a map so that its top points directly north, and the symbols on the map are aligned with the actual landmarks they represent.

ORIENTING A MAP

1. Rotate the compass housing on your compass until the compass-housing arrow lines up with the direction of travel arrow on the base-plate. (notice the setting, or compass bearing, can be read as North or as 0 degrees)
2. Now place the long edge of the compass base plate alongside any one of the magnetic-north lines you drew on the map, or next to the magnetic-north arrow in the bottom margin.
3. Turn the compass and the map as a unit until the compass needle is aligned with the compass-housing arrow.

4. Now the map is oriented (which means that the features on the map are aligned with the actual features of the landscape)

PINPOINTING YOUR LOCATION

If you're not sure where you are but can see a couple of features indicated on the map, it's easy to pinpoint your location.

1. Point the base-plate direction-of-travel arrow on your compass at one of the landmark - a mountaintop, the outlet of a lake, a building, etc.
2. Holding the base-plate still, turn the compass housing until the needle aligns with the compass-housing arrow. (you've just taken a bearing on the landmark)
3. Now place the compass on the map with the edge of the base-plate touching the symbol representing the landmark. (the map need not be oriented)
4. Ignoring the needle, rotate the entire compass around that symbol until the compass-housing arrow parallels the magnetic-north lines.
5. Lightly pencil a line along the base-plate edge from the landmark symbol toward yourself.
6. Now find a second landmark, and repeat the process of taking a bearing, placing the compass on the map, and drawing a line toward yourself.
7. The point at which the two lines intersect indicates where you are.
8. To confirm your location, repeat the procedure with one or two more landmarks

FOLLOWING A COMPASS BEARING

Assume that you know where you are in the back country, and that on the map you see a lake you'd like to reach by the most direct route.

1. Place the long edge of your compass base-plate on a real or imaginary line connecting the map points representing your present location and that of the lake. (If magnetic lines have been drawn on the map, it need not be oriented)
2. Turn the compass housing until the compass-housing arrow parallels the magnetic-north lines.
3. Now lift the compass off the map and hold it at waist level with the direction-of-travel arrow on the base plate pointing away from you.
4. Without adjusting your compass setting, turn your entire body until the compass needle aligns itself with the compass-housing arrow - the tip of the needle will point to 0 degrees. The direction-of-travel arrow will be aiming at the lake.
5. Look up along the direction of travel, and if you can see the lake, you need make no further use of the compass. If the lake is out of sight - locate an intermediate landmark - a tree, boulder, or other feature - toward which the direction-of-travel arrow is pointing, and walk to it.
6. Again, hold the compass in your palm and turn your body until the compass needle aligns with the compass-housing arrow.
7. Look ahead for the next landmark along your direction of travel, and go to it.
8. Continue the process until you've reached your destination.

Using your Backpack Stove

Campers don't seem to get the concept of priming a stove. They don't remember their high school chemistry lessons about turning liquids into vapor.

Backpacking stoves work by pushing a vaporized flammable gas through a burner unit. With canister stoves, the fuel is already pressurized and flows out of the cans in a vapor state. But before liquid fuel will burn, the liquid fuels must be converted to vapor by means of heat. This is what priming does.

To prime a stove, a small amount of liquid fuel is bled out into a priming cup at the base of the stove and ignited. As this gas burns off, the gas generator – a small section of the fuel line connected to the burner – is heated to a temperature that converts liquid running through it into gas, thus priming the stove. The biggest problem campers have with priming is letting too much or too little gas bleed out into the priming cup. Following are a few simple tips for fast, efficient, and safe priming of any liquid fuel stove.

- Set up the stove on a stable platform in an area free of combustibles. Do not cook in your tent or in an enclosed vestibule, and do not prime the stove in your tent vestibule; if it flares up, you may ignite the tent.
- Don't overpressurize the fuel bottle. Anywhere from 10 to 30 strokes of the pump should suffice.
- Set up your stove and begin to pressurize the bottle. As you do this, perform a basic diagnostic check. Look, feel, smell, and listen for leaking O-rings or gaskets, especially on the pump unit. If you detect fuel around the pump head or fuel line, don't light the stove. Find the exact location of the leak. If you can fix the problem by replacing a worn O-ring or by tightening the fitting, do so. But if there is a leak or problem with the fuel line, do not use the stove until the line has been replaced.
- Open the fuel valve slightly for 2 or 3 seconds and let just a trickle of fuel into the line. A telltale hiss indicates that gas is coming out. Shut the fuel off once you see it soaking the wick or pooling in the priming cup. Remember, once you turn the valve, there will still be a bit of fuel flowing as the line empties.
- Light the fuel in the priming cup/wick. There should be a low, orange flame around the base of the burner. If the flame flares up, do not try to put it out or move the stove -- moving the stove will just spill the burning fluid. Let the fuel burn off and wait until the stove cools, then repeat the priming process.

- Beware of soot formed when white gas is burned in its liquid form. It can blacken hands and gear when it comes time to pack up the stove. To avoid soot, prime the stove with a fire-starter gel or a bit of alcohol. A 2-oz. plastic bottle of rubbing alcohol can be packed with the stove. Just squeeze a drop or two into the priming cup rather than bleed white gas out of the fuel bottle. If you use a gel, just smear a little bit into the priming cup.
- Use a windscreen and reflector while cooking. These increase fuel efficiency, though at higher elevations a tightly sealed windscreen can literally suffocate the stove. If oxygen is thin, you may need to open the windscreen a little.
- Don't use pots and pans bigger than your stove can handle. Putting a large family-sized skillet or pot on a small camp stove will force the stove flames to reach out along the bottom of the pan in search of oxygen. This could put the flames in contact with the fuel bottle.
- Don't forget to periodically re-pump and keep the fuel pressure constant as your fuel bottle pressure drops during cooking.

Toasty Tips

If you often wake up shivering, here are some ways to stay warm all night.

- Keep your sleeping bag dry. Dry your bag before stuffing it. If it's cloudy in the morning but sunny in the afternoon, spread your bag to dry at lunch or during a rest stop. Be sure to use a waterproof stuff sack.
- Keep the energy flowing. As soon as you get into camp, change out of those sweaty clothes, and have something to eat and drink. It's easier to maintain your body temperature as you set up camp than to jack it up just before bedtime.
- Eat a hearty dinner and late-night snack. You need fuel to keep your furnace burning all night.
- Hydrate. Without water, your body can't convert food into useable energy.
- Make sure your sleeping bag fits. A too-big bag means you'll spend extra calories heating empty space. If the sleeping bag is too tight, you crush the insulation. Fluff your sleeping bag well before bedtime. Wear your back country pajamas when you're trying on bags, by the way.
- Use a good ground insulator beneath your sleeping bag. Closed-cell foam works best.
- When Ma Nature calls, answer. Heating the fluid inside your bladder saps body heat.
- Wear a hat. Most of your heat escapes from your head.
- Don't pile on too many clothes. The more you wear to bed, the more likely you are to compress the bag's insulation and render it less effective. If you have to wear more than one or two layers, your bag isn't suited to the conditions.

A Long Life For Your Pack

"Good backpacks are meant to withstand major abuse," says the head of the repair department at Kelty. "But they still need regular care and maintenance in order to perform their best." Here's what is recommended.

1. On the pack, the material typically found in the back panel, shoulder straps, and hipbelt, is closed-cell foam. Submerge it in a tub of water to loosen dirt and get rid of odors. If the pack uses open-cell foam, don't submerge it because this can "malform" the foam. If you're unsure of the type of foam your pack uses, contact the manufacturer.
2. When you pick up a loaded pack, grab it by either the haul loop or both shoulder straps, but not by one.
3. Don't over-tighten compression straps. This adds unnecessary stress to the seams.
4. Don't let your pack get sunburned. Ultraviolet rays fade and weaken nylon. Clean your pack regularly with a soft brush and mild detergent. Store your pack in a cool, dry, dark place.
5. Use a rain cover to prevent saturation, which can lead to mold or mildew.
6. Take care of zippers. Clean them, lubricate them with silicone spray, and

- don't yank on them. Keep frayed fabric trimmed so that the fibers don't get stuck in your zips.
7. Keep buckles fastened to prevent them from getting stepped on and broken.
 8. Inspect stress points. Your pack's most vital links are at the attachment points for the suspension system (hipbelt, shoulder straps, and stabilizer straps). Make necessary repairs using stout upholstery thread and a heavy-duty needle. A coating of seam sealer waterproofs and strengthens stitches.
 9. Pack smart. Don't let pointed objects like stoves, cook pots, and tent stakes create wear spots in the fabric.
 10. Don't store food in your pack. Rodents think nothing of chewing through nylon. Better to hang your grub from a tree in stuff sacks, which are relatively cheap and easily patched.

Tying your Boots:

Tie boots right and you can eliminate bruised toes and blistered heels.

Remember that shoelace-tying trick your mom taught you about some rabbit running through a hole? Forget it. When it comes to hiking boots, there are better, more comfortable ways to lace your boots.

Top Security

If you keep your boots tied tightly, the tongues will stay in place against your ankle tops, eliminating friction against your leg and keeping out sticks and stones. The following two methods will keep your laces snug:

1. **The speedhook method:** Loop around the top speedhook as usual, then cross laces and wrap around the hooks again in a figure eight.
2. **The eyelet method:** Create a loop in each lace and push them through each of the top eyelets. Run the tail of each lace through the opposite loop and pull tight.

Divide and Conquer

By pulling laces tight, you secure your foot in the heel cup and help reduce the chance of blisters. In the process, however, you can also squeeze toes and bruise the tops of your feet, especially in boots that aren't well padded. These two methods let you adjust toe and ankle tension separately for a secure fit that won't hamper circulation.

The Noose

Adjust the laces along the top of your foot to the preferred tension. At the front of the ankle, wrap one lace around the other several times. The forefoot will stay loose even as you pull the collar tight around your ankle. Remember: Readjust the forefoot laces when you wear thicker socks.

The double lace

Cut your shoe strings in half and lace the top and bottom of your boot separately.

Socks:

Following is a selected cut from "Backpacker" magazine, Sept. 1999 that I thought had good information in it:

Socks with sole:

When it comes to comfortable, hard-working trail socks, wool is still king.

By Kristin Hostetter, Equipment Editor of Backpacker magazine.

Here's a pleasant thought: Each of your feet gives off a full cup of sweat during an average day of hiking. That amounts to 3 _ quarts a week for the pair. Or 45_ gallons a year. I've shared this information with a number of hiking buddies and they all have had the same reaction: "Not me!"

The reason this scientific truth is so hard to comprehend? Most of today's hiking socks do an amazing job of handling sweat, so you're unaware of moisture buildup. If you don't believe it, do what I did recently: Hit the trail wearing a hiking sock on one foot and a traditional cotton tube type on the other. After half a mile, the tube sock will be soggy, while the hiking sock probably won't even be damp.

These days, most good hiking socks are made of good ol' wool. Compared to the scratchy, baggy rag wool socks of yesteryear, the modern woolies wick perspiration quicker, fit better, and feel soft and snuggly. Because of smart construction and new-fangled wicking fibers, you can - and should - forgo those synthetic sock liners that were once standard with rag wool socks.

Note: As author of this backpacking information document, I **do not recommend doing without the liners** unless your feet are very well seasoned (tough). Liners do more than just wick moisture.

Carry a Big Stick

(Copied from an article found in "Backpacker" magazine)

Create a one-of-a-kind hiking stick that reflects your personality.

Sure, carrying a hiking stick makes me look like a rugged mountain man, but it also helps me in more pedestrian ways. By easing the load on my knees and shoulders, it helps me chew up big miles, plus I can tiptoe across loose rocks, slippery logs, and rushing streams without a wobble. Here's how to create your own personalized staff.

1. Search your local forest for a downed branch that's stout, straight, and preferably, blemish-free (no obvious cracks or big knotholes). The stick should reach your armpit and measure 1 to 2 inches in diameter.
2. Remove twigs with a pocketknife and strip the bark if you want. Round off sharp points and level knobs with a plane or file. Hold the stick as though you're hiking (your elbow should form a right angle) to figure out where your grip will be - 2 to 3 inches below the top. Customize the

grip by cutting shallow groves for your fingers like those on a steering wheel. Just above the grip area, drill a 1/2-inch hole for a wrist loop. Smooth the surface of the stick first with coarse, then fine, sandpaper. To remove residual sawdust, wipe the stick with a rag dipped in paint thinner.

3. Decorate the stick with carvings, wood burnings, paintings, emblems or bear bells. If the wood is still green, place it in a warm, dry location to cure for at least 2 weeks, and rotate it often to prevent bowing.
4. apply two coats of wood stain, allowing each coat to dry overnight, to give the stick a darker, richer hue. Then apply three coats of clear urethane varnish to seal the wood and prevent rot. Allow each coat of varnish to dry overnight. Sand the stick lightly with very fine sandpaper or steel wool after each coat.
5. Thread a 2-foot piece of rawhide lace or heavy cord through the hole. Adjust the length of the loop to fit your wrist, tie the ends in a big knot to secure the loop, then trim the ends as necessary.

Wood is a fickle creature, so remember that hiking sticks are born as much as they are made.

Allergic Hikers

(copied from an article I found on emergency medicine on the web)

If you are a hiker who may or does suffer allergic reactions to insect stings and bites, you may wish to carefully read the following:

More than 1 million Americans report allergic reactions to stings from yellow jackets, yellow hornets, white-faced hornets, wasps and honeybees. About 50 people each year die from stings, but many more suffer close calls. Since immediate medical attention is often the deciding factor, sensitive hikers and backpackers in remote areas should be prepared to save themselves or their allergic companions.

Insect sting reactions fall into two categories: Immediate and Delayed.

1. **Immediate reactions** occur within four hours of a sting.
 - a. A normal reaction consists of localized pain, swelling and skin redness, lasting for several hours, at the sting site.
 - b. Another type of immediate reaction is called a "large local reaction" because it consists of a large area of swelling surrounding the sting site. "A large local reaction can be accompanied by low grade fever, mild nausea, malaise and fatigue," says Dr. Atkins.

Treatment of local reactions in people without a history of sensitivity include aspirin for pain and ice to reduce swelling. For those with a history of large local reactions, taking an oral antihistamine is recommended, preferably one that doesn't produce drowsiness.

- c. The third type of immediate reaction, and by far the most serious, is anaphylaxis, often called anaphylactic shock. "These reactions involve multiple organ systems simultaneously and most often begin within minutes of the sting, although they occasionally begin an hour or so later," says Atkins.

Common signs and symptoms of anaphylaxis are flushing, itching, hives, swelling, sneezing, runny nose, swelling of the throat, breathing difficulties, nausea, abdominal cramping, vomiting and diarrhea. In severe episodes of anaphylaxis, an irregular heartbeat and shock can occur.

People who have had severe or anaphylactic reactions in the past should wear a bracelet identifying their insect sting sensitivity, be taught to self-administer injectable epinephrine (using prescription emergency kits sold under brand names like Epi-Pen). Backpackers in particular must keep epinephrine and antihistamines (such the over-the-counter drugs diphenhydramine, often sold under the trade name Benadryl) available in their packs. After epinephrine and antihistamines are taken following a sting, you should evacuate the victim, and call 911.

2. **Delayed reactions**, on the other hand, can occur more than four hours after a sting.

There have been isolated reports of serum sickness-like syndromes occurring about a week after a sting with hives, fever, malaise and joint pain. Such hikers are at risk for more serious reactions to future stings, and are candidates for venom immunotherapy - periodic shots similar to vaccinations, that reduce a person's sensitivity to selected irritants.

Specific Recommendations for Hikers in Sting Country

- To decrease the area of exposed skin, wear long pants when hiking, and shoes rather than sandals or bare feet around camp.
- Wear white or light-colored clothing. Dark clothing and flowery designs are more likely to attract insects. Particularly in autumn, when bees and wasps are desperately hungry, shiny fabrics like lycra (which reflects ultraviolet light, visible to many insects) will draw more assaults.
- Use unscented deodorant and rinse off perspiration after exercise. Insects are attracted to scents. Avoid strong smelling lotions, and use insect repellent.
- Cover food, drinks, and garbage around camp. Food smells are a strong attractant.

Sensitive individuals should always carry an emergency pack. Talk with your physician about exactly what to carry, but it should generally contain an oral antihistamine (in syrup or chewable tablet form) and an epinephrine injection device.

If you have asthma, keep an inhaler in the pack.
- Review how to take all prescribed medications. If an epinephrine injection device is prescribed, review when it should be used and learn the correct technique. Talk with your hiking companions about how to administer it, should you be unable to.

Buying a Better Stove

After a long, hard day, nothing is more disappointing than a stove that refuses to fire. Follow these 10 essentials for foolproof stove features and techniques.

[Mike Lanza](#), BACKPACKER Contributing Editor, March 2001

1. Search for stability. If your cook pot is larger than 2 liters (or 2 quarts) or you often cook on uneven surfaces, buy a stove with wide pot supports and legs that provide a stable base.
2. Consider fuel placement. To use one of the popular backpacking ovens with your stove, opt for a stove with a remote fuel source—not one that sits atop the canister or tank—so the fuel is not subjected to the heat that builds up under the oven.
3. Choose convenience. If you camp only in temperatures above freezing, choose a canister stove for maximum flame adjustability, convenience, and ease of use.
4. Assess fuel availability. When you travel by plane to your backpacking destinations, you have to buy fuel there or ship canister fuels separately. Some types are hard to find at local gear stores, but white gas is widely available in North America.
5. Lose some weight. Long-distance backpackers should consider a liquid-fuel stove because of the fuel's weight savings and storage flexibility.
6. Invest in versatility. Overseas travelers should invest in a multi-fuel stove that burns kerosene and auto gas.
7. Think cold. If you cook in freezing temperatures, get a liquid-fuel stove, preferably one with controls that are easily manipulated while wearing gloves or mittens.
8. Dare to repair. If your stove is field repairable, buy a repair kit and keep it with the stove. Practice by taking your stove apart at home.
9. Block the wind. If your stove doesn't come with a windscreen, buy one.
10. Get a license. If you cook on snow, get a base that fits your stove, or use an old license plate.

Buying A Better Pack:

There's no single piece of equipment more crucial to your backwoods enjoyment. Here's suggestions on how to make the right choice.

1. Measure your torso. To get a proper fit, you must know your torso length. To find out, drape a soft tape measure from the seventh vertebra (the bony protrusion at the base of your neck) down along the contour of your spine to the low point between your hipbones.
2. Check those hips. When trying on packs, make sure you get the hipbelt positioned properly—that is, directly on the crest of the hips, not around the

waist. The majority of the load will be carried by the hipbelt, so make sure it's comfortable and fits snugly, without slipping.

3. Practice patience. Your backpack may be your most important piece of gear, so take your time with the selection process. Before you leave for the store, toss all your usual backpacking gear into a duffel bag. Once you narrow down the options, load the packs and walk around the store for 20 minutes to make sure that the gear all fits inside and that the pack carries the load comfortably.
4. Treat yourself. Buy the best pack you can afford-as long as it fits. Durability and quality rank right behind fit as important considerations.
5. Know your load. Determine what and how much you'll be carrying. Are you planning to spend, at most, 1 or 2 nights out at a time? Will you be hiking in the winter? For short outings in the summer, you can get by with a smaller pack, but snowy trips require more capacity, plus external gear-lashing options.
6. Consider your trails. If you plan to hike mostly on well-maintained backcountry trails, you might find an external frame pack more comfortable. If your hiking will take you off-trail or into rough, rising terrain where balance is crucial, an internal frame will offer greater stability and comfort.
7. Think versatility. If you like to go for an evening scramble after you set up camp, look for a pack with a daypack conversion option.
8. Respect your idiosyncrasies. Packs are like spouses: You shouldn't get one hoping it will change your bad habits. If your personal motto is "A place for everything and everything in its place," look for an external frame style with lots of pockets. If you want to grab your water bottle on the go, don't frustrate yourself by falling for that nifty new pack with pockets that are just out of reach.
9. Plan with your partner. If you are hiking with a partner or group, figure out how much community gear (tents, stoves, food, etc.) you'll be carrying. Then buy the smallest pack that'll work so you don't have room to carry all the excess junk that usually shows up at the trailhead.
10. Think drink. If you favor a hydration tube for you fluid needs, find a pack ready-made to handle a bladder. If not, look for deep water-bottle pockets that can hold a quart-size bottle.

Buying A Better Filter

It's simple: Unless you like getting sick, treat all of your water. Follow these 10 essentials to find and maintain the right filter.

*From **Backpacker Magazine***

1. Travel light. If you're a solo traveler who doesn't like the flavor or lag time of tablets or drops, consider a bottle filter. The dunk-and-drink feature is the quickest way to a cool drink.
2. Travel even lighter. If you're a solo traveler who likes to move as fast as possible, consider chemical tablets or drops like iodine or chlorine

dioxide. These products weigh next to nothing, and one bottle is usually enough for a 5-day trip.

3. Go large when company comes. If you frequently travel with big groups, opt for a big pump and/or gravity-feed filter designed for cleaning high volumes of water.
4. Remember Plan B. When hiking with large groups or heading out for more than a week, take backup water treatment, whether it's a bottle of drops or a spare filter element. Groups may want to take several filters so poor Joe Bob doesn't have to spend 3 hours pumping 26 quarts of water through the group filter.
5. Practice before purchasing. Before you buy, ask the salesperson to remove the filter from its packaging and let you pump it. This will give you an idea of each unit's ergonomics.
6. Figure out your fixes. Take a few minutes to look over the owner's manual. Be sure that the maintenance and troubleshooting sections are clear and detailed, since you'll eventually find yourself sitting by a stream trying to get your filter cranking again.
7. Dry out early and often. After filtering, pump any excess water out of the unit's system so cooties have less moisture to accelerate growth. Lay it out to dry while in camp. If your chosen filter doesn't come with a mesh storage sack, purchase one separately. The mesh allows better airflow, so your filter dries out more quickly.
8. Clean the pipes. All filters eventually plug up, so be sure to purchase any extra maintenance equipment for the model you buy. Maintenance kits often include spare O-rings, scrub brushes, and tiny tubes of lubricant.
9. Prevent freezer burn. When hiking in places where nighttime temperatures dip below freezing, bring your filter into the tent. If water freezes and expands inside the filter, it can crack and ruin the cartridge.
10. Stop silt cold. Extend the life of your cartridge by using a bandanna to filter particles out of silty or dirty water. When dipping from a particularly muddy stream, let the brown stuff settle to the bottom of a pot before pumping it.