

BSA TROOP 210 GEAR GUIDE

*Updated 11/03/03

Here are a few tips from Troop 210 to help you select the proper equipment for your son to use on campouts and backpack trips with the troop. You can equip your son for a very reasonable price, and you do not have to buy all the equipment at once. Garage sales are good places to pick up some great deals but take care not to waste your money on outdated or worn out gear. One of my favorite places is thrift stores. There is an abundance of clothing (and gear) in all sizes available at thrift stores and garage sales. The savings are always 75%+!

Since there are literally millions of Scouts and since they ALL camp, the major camping gear makers (especially Coleman) carry special lines of good, boy-sized equipment at affordable prices. Much of it even has the word “scouts” or “scout sized” on it.

THE BARE ESSENTIALS

As you start shopping for equipment this is the order of importance in which you should buy it:

1. **SLEEPING BAG** - a good bag is a must. However, you don't have to spend a great deal of money to get a decent one. I recommend a bag that is rated for at least 10° weather and which weighs 4 pounds or less. Target, Sports Authority, Outdoor World, Travel Country, Campmor (mail order or online) and Wal Mart are good places to shop although you may be hard-pressed to find a 4-pound bag at Target. Remember that if your son is going to backpack with the troop, the lighter and smaller the bag is the better, which may ratchet up the price. Stay away from down and look for the synthetic fills, as these will maintain some warming capability if the bag gets wet. If the bag does not come with a stuff sack, then buy one. Be sure that stuff sack is water resistant and that it has a pull cord drawstring on it. This will keep the bag clean and dry as your son comes and goes from a camping trip. (Bag prices range from \$20-hundreds of dollars. I have heard that someone picked up a 20°, 3.5lb bag – scout sized – made by Slumberjack for \$89. Coleman makes a 0°, 5lb bag that sells at Target for \$60, although it is probably heavier than 4 pounds. Other brands that are excellent, but cost more are: North Face, Kelty, Marmot, Mountain Hardware, and Moonstone. Stay away from the bulky \$20 bags; they are the WORST thing for backpacking and provide no warmth whatsoever.) You should consider the size your son would be when he becomes an adult. Sleeping bags come in regular (up to six feet long) and long (up to six and one-half feet) lengths. Since your son's bag will (hopefully) be with him into adulthood, it will have to fit him when he reaches his adult size. Lastly, remember that your son is going to have to lug that bag through hundreds of nights of camping. Do not scrimp on the sleeping bag! Let me know if you would like me to accompany you on your shopping trip.
2. **SLEEPING PAD** - for placement underneath your son's sleeping bag. This is necessary not only for cushioning, but for warmth. Without a pad your son is sleeping on wet or cold

ground. Pads supply extra comfort, but more importantly they act as moisture barriers against the wet and potentially cold ground. However, DO NOT send him with a mattress; a pad does not have to be thick to work. Suitable pads can be found at Target even for under \$10. More high tech pads can be found at any sporting goods store. I have found that Thermarest stand the test of time and are easy to use as well as being quite efficient as a moisture barrier while providing substantial comfort. Look for the longer and wider versions. Pads should be small and very light weight (most are only a few ounces) and take up very little space. (Never send a bed pillow either. He can roll up his jacket and throw it into his sleeping bag's stuff sack.)

3. **BOOTS** - are the single most important piece of camping and backpacking equipment there are and they are essential to any safe, comfortable camping trip. Once again, they range in price from cheap to outrageous. Watch for sales. Also, please, please don't buy the boots too big thinking he will grow into them. It's okay to buy them a little large (maximum one-half shoe size), but have him wear two pairs of socks. The last thing that you want is to have your son's boots sliding around when he walks. This will cause serious blisters and various other aches and pains for your boy. In terms of boots, once you have purchased them, encourage your son to wear them often to break them in. Have him wear them to the mall, grocery shopping, etc. Do not send him to school wearing his boots. Please waterproof the boots before each outing. The sprays are ok at best. The roll on or wax based products are better and last longer. Some boots are made with a Gortex membrane, which does help keep water out, but some people complain that their sweat also stays in. Stay away from mesh on the shoe, as this is an easy target for moisture seepage. See me for the recommended water treatment applications.

4. **BACKPACK** - a good pack can make the difference for your son between a miserable experience and a great adventure in the wilderness. When selecting a pack:

DO -

Have your son try on the pack at the store and make the store personnel load it up to verify the fit.

Make sure the pack fits snugly around your son's hips. (This is where he will carry the total weight of the pack and it is essential that the waist strap fit well.)

Make sure the shoulder straps are not draped around his shoulders. They should actually extend straight back. Otherwise this means he is carrying the weight of the pack on his shoulders instead of his hips.

Keep in mind he is growing and look for a pack that will shrink then grow.

Make sure the pack is not too big and roomy. This leads to the temptation to overload it.

Remember that the total weight of the fully loaded pack should not exceed 30-35 pounds (or 1/3 your son's body weight). 20-30 pounds would be best for some of our smaller kids.

Watch for sales. Decent packs range from \$50 to \$200. Stay in the economical range since your boy will outgrow this pack in a few years. Be sure it is a quality pack.

DO NOT -

Get confused between a backpacking pack and a daypack. Ask for help from the store people. And I am sorry to report that you CANNOT get a high-end backpacking pack at Target.

Borrow a pack from an adult and expect it to be usable by your boy unless he is a teenager (aka a boy in an adult body). If you must borrow one, adjust it to fit. Be alert to the fact the waist strap MUST fit snugly.

Let your son overload his pack and don't YOU overload his pack. He really won't need those extra socks or that Army blanket. (The blanket is too heavy and guess again if you think he will change socks on a campout unless he steps into a creek and even then....)

Let your son wear the waist strap under his belly. Some of our guys have tummies already and are used to wearing their pants underneath their gut. They absolutely cannot wear their backpack like this, as it will put the weight of the pack on their shoulders. Make sure they know to put their packs on with the buckle over their belly buttons.

Good places to purchase packs include: Outdoor World, Sports Authority, Travel Country and Wal Mart. There are also consignment sporting good stores around like Play It Again Sports on Colonial. (Page 228 of the *Boy Scout Handbook* shows a picture of an external frame pack. These are the least expensive and easiest for the boys to use. Page 229 shows an internal frame pack. This type is best for mountaineering as it hugs the body but is difficult to pack because most brands have only one large compartment. Also, internal frame packs can get a little pricey.

It is a good idea to get your boy in the habit of using a backpack for every campout because he will be able to keep all his gear together instead of having it tossed around loose – a sleeping bag here, a duffle bag there, a sleeping pad who knows where.

CANTEEN/WATER BOTTLE - This should be a good quality water bottle that will fit easily into a backpack and will not leak. (Page 209 of the *Boy Scout Handbook* shows a good water bottle. The opening is the right size for a water purifier to snap onto it.) One of the best brands is Nalgene. Look for the quart size with the wide mouth. Pick up two or three.

FLASHLIGHT (and extra batteries/bulb) The troop provides lanterns on car camping trips, to light the camp at night, but those after-dark trips to the outhouse make the use of a flashlight necessary. In addition, it is against BSA policy (and safety rules in general) to have lanterns (flames) inside tents. His flashlight will be the only way your boy will have light in his tent and/or be able to find his way to the outhouse (or the nearest bush) in the dark. Maglites are the best brand in terms of durability and they come in all sizes. However, they are the heaviest. If you do go the route of Mag-light, look for the mini-Mag. Generally, look for lighter durable non-breakable, waterproof lights. It is not necessary to buy a large light. I use a two cell “double A” battery plastic flashlight. If you feel like going exotic here, headlamps are very good. Remember that weight ratio is key; the weight of the flashlight should be about the same as the batteries.

THE “NICE TO HAVE” NONESSENTIALS

Okay, those are the essentials that you boy will use on EVERY campout. This next list is the recommended equipment that he will find useful for backpack outings (in addition to the above listed gear):

7. **MESS KIT & EATING/COOKING UTENSILS** - You do not have to spend a lot of money. A decent, lightweight mess kit is under \$10 and available at stores like Target (do you get the feeling I spend a lot of time in Target?). These come with a drinking cup, a small pan with lid, a plate and a skillet. Do not forget a knife and fork and a large spoon for cooking and eating. Another must-have is a pot grabber. This device looks like a pair of bent pliers that holds onto the side of a pan and keeps the pan from rocking and spilling. They cost about \$2. (Page 264 of the *Boy Scout Handbook* shows a picture of a mess kit.) **The better lighter-weight alternative would be a decent sized plastic bowl with non-breakable plastic utensils. Plastic utensils are best since they do not conduct the warmth out of the foods. Look also for a sierra cup. Remember, plastic is best.**

8. **STOVE** – The Troop will supply stoves. **DO NOT PURCHASE A STOVE.**

9. **TENT** - The following is provided to acquaint you with your options, but please check with the Scoutmaster on the status of the Troop tents. If your boy is interested in going on all troop backpacks, you may want to look into a small, two-person tent that weighs four pounds or under. And don't be confused when the tent box says “two person.” This really means “one

person and his stuff.” (Page 238-39 of the *Boy Scout Handbook* shows pictures of different types of tents. The dome tent featured comes in all sizes from one-man to family sized.)

There are some good buys on cheap, small tents to be had. I have seen some tents at Target for \$30 that weighs about 3.5 pounds. However, watch out for cheap tents because the mesh is sometimes second-rate and will let mosquitoes and ticks through. An indulgent grandparent may want to consider as a special birthday one of the more expensive backpacking tents that are available. Like all other camping gear, tents range in price. The most expensive tents are the four-season tents. As yet we have no plan to backpack in the Arctic, so a \$500 expedition-quality tent would be total overkill.

Speaking of wet weather, tents that are considered the best for backpacking have nylon floors to make them light weight. Also, look for something called a vestibule. It is also know as the tent’s “fly” and is essentially an extra layer of waterproof material that lays on top of the tent. I recommend a tent that has a vestibule, which goes, all the way down to the ground. Those are best at keeping the inside of the tent drier during rain. I recommend taking a look at the middle line entries for either Eureka, North Face, Black Diamond or Mountain Hardware.

Make sure you also buy a tarp to go under any kind of tent to serve as a ground cloth. Buy a nylon tarp that is the same size as the tent or as close as you can get. Some tent manufactures do make footprints that fit the size of the tent. A nylon tarp will protect the bottom of the tent from tearing on sharp rocks and will give an extra-added layer of insulation against the wet ground. If the tent has a nylon floor, it will keep the floor dry.

CLOTHING SUGGESTIONS AND HINTS

Rule No. 1 in hiking and camping clothing is “avoid cotton.” This is because cotton holds moisture and dries very, very slowly. In wet weather, if cotton stays wet for a very long time, it can cause hypothermia. Here is a short list of clothing made of cotton that you should **NOT** include on camping trips:

1. Jeans;
2. T-shirts
3. Sweats;

In the summer time, the above-listed clothing is okay. However, for cooler weather camping and especially backpacking, avoid cotton. Period.

In general, unless they are very well worn and comfortable, jeans are not good for hiking due to chafing and besides, they are made from cotton.

Like all other camping gear, it is possible to spend a fortune on high-tech camp clothing. However, if you are like me, you will have to make do with what you have available. Check your closet or your boy's closet (or his floor or under his bed) for the following:

1. Nylon mesh – these were popular up until very recently so chances are good your boy will have these already. The nylon dries very quickly and is very warm. The open mesh will allow sweat to evaporate.
2. Nylon warm-up suits - these are great since they are very warm, lightweight, comfortable, and will also dry very quickly.
3. Polyblend sweats - check the label for fabric content. Much of the sweat wear available is 50-60% poly with the rest being cotton.
4. Wool Pendleton-type shirts and pants – wool is nature's "high tech" fabric. It will stay warm even when it is very wet and it dries quickly.
5. Athletic socks – those Nike (or other name brand) socks your kid insisted on having to be cool are not great for hiking. Unbeknownst to your son, not only are they hip, but they are made to keep sweat from being a problem, but they do stay wet once they get wet from rain. Wet, sweaty socks are the leading cause of blisters. If you can afford it, look for the socks that are designed for hiking. Often, these are blends of wool and other materials, which add cushioning and water wicking.
6. Fleece wear - again, this stuff is warm, lightweight, NOT cotton and very likely to already be in your son's wardrobe. Often, thrift stores carry a vast selection at great prices.
7. Remember layers are the secret to happiness in the outdoors.

How to Choose a Backpack

In the last year, 29% of Americans camped overnight at least once. Less than a fourth of that group actually hiked and camped more than 1/4 mile from where they parked their vehicle.

— Leisure Trends Group, 1999 data

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ome people need to get out more. Way out, that is — beyond the limits of a day hike, out to lovely, lonely places where a person has the time and space to absorb the deeper satisfactions of what John Muir described as "vast, calm, measureless mountain days."

It takes a backpack to get you there. Modern backpacks, unlike their shoulder-gouging ancestors that you sometimes still see hanging in a neighbor's garage, feature intelligent design concepts that provide surprising comfort and load-carrying efficiency. Such advancements have made the art of self-propelled adventure a much more agreeable pursuit.

Here are some tips gathered over the years that can help you sort through your options:

Select Your Style: Internal or External

Long-haul backpacks (suitable for 2-day trips or longer) are known as frame packs, meaning a metal frame supports the packbag and helps focus the weight where your body can most effectively carry it — on your hips. Manufacturers offer 2 styles of frame packs: **internal-frame packs** and **external-frame packs**.

Internal-Frame Packs

Internals feature a narrow, tower like profile and integrate their framework inside the pack, behind the shoulder harness. The frame usually consists of "stays," or flat bars, about an inch wide and 1/8-inch thick. Stays are usually aluminum and are configured in a V-shape. Alternative frame materials (such as composites) and stay-alignments (parallel, X-shaped; U-shaped) are sometimes used. Stays are removable and can be shaped to conform to your torso.

Internals are popular packs with many advantages:

- **Flexibility.** Stays make internals stiff, but not rigid. This allows the pack to more easily move in harmony with body movements, a big plus for climbers and skiers.
- **Balance.** Internals hug your body. This holds your equipment closer to your natural center of gravity and helps you keep your balance when it counts — for example, while you're scooting across a log above a stream.
- **Stability.** Compression straps are everywhere on an internal. You use them to cinch down your load and keep individual items bunched together. This keeps them from shifting and throwing you off-balance if you make any abrupt moves.
- **Maneuverability.** Because internals feature a slimmer shape, it's easier to swing your arms freely — another reason why these packs are popular with climbers and Nordic skiers. This narrow profile also helps hikers whenever they have to squeeze through tight spots or when they're bushwhacking through thick brush.
- **Adjustability.** Internals use suspension systems (involving the shoulder harness and hip belt) that can be adjusted more precisely than external-frame systems.

The downside of internals:

- **The black hole.** Most internals have 1 cavernous main storage compartment, plus a separate section for a sleeping bag. Other than a lid pocket, nearly everything gets stuffed into that single, deep compartment. So, if it's necessary to find 1 particular item during a rest stop, you may have to hunt a while to locate it.
- **Hot stuff.** You'll sweat more wearing an internal because it rides so close to your back. The design offers little room for ventilation.
- **Cost.** Internals typically cost more than externals of a similar size.

External-Frame Packs

Externals connect a packbag to a rigid frame made of aluminum tubing. Externals ruled the backcountry until internal-frame design was introduced in the late 1970s. Internals have surged in popularity, yet externals are still a great choice for transporting heavy loads along trails. With an external, the pack's weight sits more squarely on your hips; with an internal, the back, shoulders and hips share the load.

The advantages of externals:

- **Cooler to carry.** An external's load does not sit flat against your back, allowing air to circulate.
- **Easier to pack.** Externals feature at least 2 main compartments plus several side pockets. You can organize your gear into

"zones" and locate it more easily.

- **Heavy loads won't sag.** They might in an internal, depending how you pack it. Plus, since your center of gravity sits higher in an external, it's easier to walk upright.
- **Cost.** You'll pay less for an external.

The shortcomings of externals:

- **Minimal agility.** They tend to make you walk more stiffly, making externals cumbersome when you try to walk off-trail. Attempting to scramble up rocks or hop across a boulder field while wearing one is difficult, even unpleasant.
- **Poor traveling companions.** Sometimes you can squish a loaded internal into a car trunk or back seat; an external frame won't give an inch. Plus, in the luggage-transport systems of airports, externals sometimes can take a pounding.

Rucksacks

Rucksacks are a third category of overnight packs. These are usually frameless packs (some models include a single stay) that can store between 2,500 and 3,500 cubic inches of gear, enough for 1 or 2 nights — or more, if you are an ultralight specialist. These are essentially overgrown daypacks and often feature lightly padded backs. They are popular with skiers, trail-runners, rock scramblers and peak-baggers.

Which Is Best for Me?

The answer depends on your hiking style and the types of places you explore most often.

Which people are better suited for an **internal**?

- Climbers/mountaineers
- Scramblers/peak-baggers
- Skiers
- Off-trail (cross-country) hikers covering rough terrain

Why? The snug fit of an internal allows your load to move with you, helping you stay balanced and agile on uneven terrain. Recreational backpackers have also grown to prefer internals, valuing their comfort and versatility. Internals have emerged as very popular general-purpose packs, typically outselling externals by a sizable margin.

Which people are better suited for an **external**?

- Beginning hikers
- Hikers hauling heavy loads over easy to moderate trails and terrain

Why? Externals appeal to juniors and beginners because they cost less. For people toting monster loads, the frame becomes an efficient

extension of your upper thighs and pelvic region — an area of stout bones and thick muscle groups that are well suited to the task of bearing the weight of a backpack. Are externals becoming obsolete? Do not count on it. Tradition is on their side, and they are a great bargain.

What Features Should I Look For?

Hip belt: Generously padded hip belts (unlike the thin cloth waist belts found on Sixties-era backpacks) represent a major advancement in pack design and greatly enhance your ability to carry tonnage into the backcountry.

Most consist of various grades of foam: open-cell foam for cushioning, closed-cell or molded foam for firmness. The hip belt should straddle your "iliac crest" — the 2 prominent bones on the front of your hips. This is the area where your pelvic girdle begins to flare out, providing the hip belt with a stable, fortified foundation.

Some packs offer interchangeable belts, permitting a more customized fit, and even belts where the angle of the fit can be adjusted. The hip belt's padded ends should not touch; you need some space to be able to cinch the belt securely. On the other hand, don't tighten a belt excessively. Your hips could be irritated if you do.

Internal-frame models include a lumbar pad. This large pad should offer cushioning yet should not feel spongy. If it does, it could break down quickly under a load.

Framesheet: Some internal packs place a thin but stiff sheet of plastic between you and the packbag. Often this is a material known as HDPE, or high-density polyethylene. This adds stiffness to the frame without adding much weight. Plus, it prevents objects in your pack from poking you in the back.

Internals sometimes include some type of mesh or foam panel that rests near the middle of your back. This is an attempt to separate the pack from your back and encourage some airflow between the two. It offers modest help. Here is a trail-tested truth: Count on having a sweaty back if you tote an internal.

Suspension system: This involves the shoulder straps (padded and contoured), load-lifting straps, a sternum strap and belt-stabilizer straps. These items, and tips for adjusting them, are discussed in the attached *Fitting a Backpack*. So-called ladder suspensions typically allow you to reposition the shoulder harness in 1-inch (or, preferably, smaller) increments. The more fine-tuning a pack permits, the better the fit.

Packbags: Common materials are packcloth (a sturdy grade of nylon) and Cordura, a burly fabric with a brushed finish. Both resist abrasion and are coated for water resistance. Cordura is tougher and a bit heavier. Ballistics nylon, a strong, lightweight material, has popped up in newer pack designs and seems to work well. Internals usually offer an "extendable collar" or "spindrift collar" — additional nylon with a drawstring closure that allows the main compartment to stretch higher and hold extra gear.

Detachable pocket: Many internals allow you to detach the "floating lid" pocket from the pack and convert it into a fanny pack or daypack. That's a handy feature when you choose to make day hikes from a backcountry basecamp.

Water-bottle holders/hydration pockets: Externals offer plenty of side pockets where you can stash a water bottle. Internals rarely do, although several now offer elasticized mesh "holsters" on the side where you can keep small bottles handy. Hydration systems (water reservoirs, or bladders, connected to a long sipping hose) have boomed in popularity. Many high-end packs now offer such systems.

Extras and attachments: **Lash points** allow you to attach even more gear to your pack if you feel the need. Climbers and early-season hikers should look for **ice-axe loops**, **daisy chains** (a series of small loops where you can dangle gear, such as carabineers) and **crampon patches**. A so-called **shovel pocket** holds items tight against the back of your pack; it's a good place to stash wet things. All of these extras, of course, add weight to a pack.

Loading options: Most internals are "top-loaders," where all gear passes through one big hole at the top of the packbag's main compartment. This requires you to keep quick-access items near the top. Some internals now provide zippered, slit-like openings on the sides of their main compartments. This allows you to stash smaller items (water bottles, for instance) lower in your pack but still have quick access to them. Most externals, meanwhile, are "panel-loaders." In this configuration, a zipper follows a U-shaped track along one side of a compartment. When unzipped, the compartment's side panel falls away like a flap to give you wide access to the compartment's interior.

Packs for women: Several packs, both internal and external models, have been modified with narrower shoulder straps, smaller hip belts and shorter torso lengths.

Packs for kids: External-frame packs are traditionally the first choice for a youngster's first pack. Some options: The REI Long Trail Jr., the Long Trail Regular and Long Trail Large; the JanSport Scout II and the Kelty Yukon. Midsize daypacks may be sufficient if an adult can transport the child's sleeping bag. If your child needs to be self-sufficient, one of the beginning externals mentioned, all under \$100, represent good choices.

How Much Can I Expect to Spend?

Some stores offer some external-frame packs for less than \$100; a few high-end internals sell for nearly \$500. Most internals cost between \$200 and \$300. Externals rarely exceed \$200.

If you regularly visit the backcountry and anticipate at least one overnight trip per year, invest in a quality pack with a capacity that matches your ambitions. Inexpensive discount store backpacks are poorly made, rarely last, have inadequate padding and can be miserable to wear. An uncomfortable pack can ruin an otherwise beautiful outing.

Consider renting a pack before buying your first backpack. It will help you become better acquainted with how a pack fits and performs. A good rental shop will adjust a pack to conform to your body.

What's the Right Capacity?

As the phrase goes, your numbers may vary. But here's a general guide for internals:

Up to 3,000 cubic inches: Good for day hiking or a 1-night trip in warm weather where your supplies will be minimal.

3,000-4,000 cubic inches: Enough space for 1- or 2-night trip. You can go even farther if you team up with a partner who could help carry the load of shared items.

4,000-5,000 cubic inches: Generally good for up to 3 days of overnight camping.

5,000-6,000 cubic inches: Can accommodate up to 6 days of overnight camping. The lower end of this range is good for most backpackers. Don't buy too large a backpack, though, if you don't anticipate needing the space. The more compact and lightweight your load, the better.

6,000-plus cubic inches: For long hauls lasting a week or more.

Keep in mind: Capacity figures for internal and external packs **vary significantly**. Sleeping-bag storage accounts for the discrepancy. Internals carry sleeping bags in a special compartment behind the hip belt, and synthetic bags can consume 2,000 or more cubic inches of a pack's stated capacity. With externals, bags are usually strapped to the underside of the packbag. This does not influence the pack's capacity figures.

By the numbers: Not every manufacturer measures cubic inches the same way. So one company's measurement of 4,000 cubic inches may differ a bit from another company's calculation.

Weight: Internals tend to be a touch lighter, but the differences are minimal. Large packs can weigh up to 8 pounds. That's 8 pounds on your back before you add any gear! This should remind you to buy a pack that fits your ambitions. If you hike only modest distances, you don't need a monster pack.

How Do I Know If It Will Fit?

Fit is crucial. Follow the guidelines detailed in, *Fitting a Backpack*. **DO NOT SKIP THIS STEP!**

Instruction on:

- Measuring your torso

- Selecting a pack size appropriate for your torso length
- Custom-fitting a pack to your body

What Else I Should Know?

- As our fitting clinic points out, people may be the same height yet have different torso lengths. Make a backpack purchase based on your torso length.
- How do you hoist a heavy backpack onto your back? Study the tips found in [Packing a Backpack](#).
- If a pack feels burdensome while you walk, consider porters in Nepal who still transport large loads on their backs using a tump line — a long strap of fiber that wraps around the load, then is worn across the forehead.

Quick Review

Internal-frame packs, with their body-hugging design and low center of gravity, are ideal for any outdoor activity — mountaineering, skiing, scrambling and hiking on- or off-trail. They offer you good balance and more freedom of movement. Internal packs are the popular choice of most outdoor adventurers.

External-frame packs are good choices for carrying heavy loads over easy to moderate terrain, primarily trails. Their rigid design makes you walk more stiffly and is not the best for rock-hopping or other types of cross-country travel. They cost less than internals.

Rucksacks are, in essence, extra-large, frameless daypacks that can accommodate enough gear for a lightweight overnight trip.

Fit is crucial. Make sure you review [Fitting a Backpack](#) and make the effort to have your pack customized for your torso.

How to Pack Your Backpack

You've planned, shopped and prepared. Now it's time to load up and head out. What's the smartest way to get all that gear into your backpack?

It depends on what you're carrying (internal-frame pack or external?) and where you're going (on-trail or off-trail?).

Internal-Frame Packs

- Whether you're traveling on- or off-trail, keep your **heaviest items close to your back**, centered between your shoulder blades.
- For **on-trail** travel, keep heavy items **higher** inside your pack. This helps focus more of the weight over your hips, the area of your body best equipped to carry a heavy load.
- For **off-trail** exploration, reverse the strategy. Arrange heavier items **lower** in the main compartment, starting again from the spot between your shoulder blades. This lowers your center of gravity and increases your stability on uneven terrain.
- Stuff your **sleeping bag** into its lower compartment first. Squeeze in any additional lightweight items you won't need until bedtime (pillowcase, sleeping shirt, but nothing aromatic). This will serve as the base of the main compartment, which you'll fill next.
- **Tighten** all compression straps to limit any load-shifting.

External-Frame Packs

- As with an internal, keep your **heaviest items close to your back**, near your shoulder blades.
- Externals are recommended for **on-trail travel only**. Load heavier items **high** inside your pack and close to your body. Doing so centers the pack's weight over your hips and helps you walk in a more upright position.
- Pack your **sleeping bag** in its stuff sack. Finish loading your main packbag, then strap the bag to the lash points on the bottom of the packbag. If rain seems likely, consider stuffing your sleeping bag inside a second stuff sack or wrapping it in plastic.

Tips for Either Pack Style

- **Women** and people of short stature often find they prefer to pack the weight low whether they're traveling on- or off-trail, regardless of which pack style they're carrying. You are the ultimate judge of what feels comfortable to you. Experiment with different load arrangements to determine what feels best.
- Make sure some items are **easily accessible**, packed in places where they can be reached with a minimum of digging:

Map

Compass

Sunglasses
Snack food
First-aid supplies
Rainwear

Insect repellent
Flashlight/headlamp
Water bottles
Packcover

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- Don't waste empty space. **Cram every nook** with something. Put a small item of clothing inside your pots, for example. Smaller items, such as food, pack more efficiently in individual units rather than when stored loosely inside a stuff sack.
- If you are part of a group, **split up** the weight of large items (a tent, for instance) with other group members. Don't make 1 person become an involuntary packhorse.
- **Cluster** related small items (such as utensils and kitchen items) in **color-coded stuff sacks** to help you spot them easily.
- Minimize the number of items you **strap to the outside** of your pack. Gear carried externally may adversely affect your balance. Secure any equipment you carry outside so it doesn't swing or rattle.

Tips: How about **long tent poles**, for example? Stow them horizontally with your sleeping pad across the top of an external pack; with an internal, carry them vertically, secured behind the compression straps on one side of the pack with the ends tucked into a "wand pocket" at the pack's bottom. A **daisy chain** and **ice axe loops** are designed for specific mountaineering gear; feel free to improvise with them, but don't get so creative that you jeopardize your comfort or stability.

- Make sure the cap on your **fuel bottle** is screwed on tightly. Position it below your food inside your pack in case of a spill.
- Carry a **packcover**. Backpacks, though made with waterproof fabric, have vulnerable seams and zippers. After a few hours of exposure to persistent rain, the items inside your pack could become wet—and thus much heavier.
- **Quick repair tips:** Wrap strips of duct tape around your water bottles; in case a strap pops or some other disaster occurs, a quick fix could keep you going. Take along a few safety pins in case a zipper fails.

Do you aspire to be a truly organized adventurer? Then before you reach the trailhead you should:

- **Evaluate** what equipment is needed for this specific trip.
- Review a **checklist** before you leave home to make sure you have everything you need.
- Double-check your **older gear** to make sure it's in good working order.
- Pre-load your pack the night before your hike begins. Or, a few days before your departure date, **rehearse packing** for this trip. If you're missing something, it's better to discover this fact early.

Packing your Backpack

The way you pack your backpack will affect how easy it is to carry, how comfortable you are on the trail and how easy it is to find your gear. It's important that you pack wisely.

Step #1: Decide What to Bring

Different trips require different gear and clothing. The specific items you need depend upon the location of your trip, the expected weather conditions, the difficulty of the route and the number of people involved.

Experience is the only way to know for sure what you want with you in the wilderness. Until you have a few trips under your belt, stick to the basics. Focus first on the items that address basic needs: shelter, food and water and wilderness safety.

Step #2: Pre-Packing Checks

- **Check equipment condition and operation**
Make sure your gear is in good working order before you pack it. Pay special attention to important survival items such as water filters, stoves and tents. Create a well-stocked repair kit to handle basic repairs in the field and carry it with you on every trip.
- **Double-check the essentials**
Many a cold, dark, hungry night has been spent in the wilderness because someone forgot to check the batteries in their flashlight or the fuel level in their fuel bottle. To avoid similar problems, create a list of "Essentials Checks" that you can run through before leaving home.
- **Learn to share**
With a little bit of extra planning, you can save space, weight and effort by identifying gear items that can be shared with your fellow backpackers. Sharing equipment cuts down on needless repetition and lightens everyone's load. Typical "community gear" items include tents, cooking stoves, pots and pans, lanterns and water treatment systems.

Step #3: Organize your Small Items

Backpacking trips typically involve dozens (if not hundreds) of pieces of equipment. To keep things manageable, you need to get certain smaller supplies organized before you start throwing gear into your pack.

Pack small items like first-aid supplies and kitchen utensils together in gear bags to keep them from disappearing in your pack. Group similar items together (kitchen supplies in one gear bag, first-aid gear in another, basic camp tools in a third). This will help you keep track of small items and cut down on time-consuming pack searches.

- Group the same items together on every trip so you can memorize the groupings over time.
- Develop a system for identifying these general storage bags. Use different colored bags or label them clearly.

Step #4: Develop a Packing Plan

The key to smart packing is developing a logical system that you can follow trip after trip. The more often you use your packing system, the easier it will be for you to find the gear you need quickly and easily. Let experience be your teacher, too. If you find your system cumbersome or confusing during your first several trips, make adjustments.

Step #5: Focus on the Most Important Factors

To develop a successful packing plan, you need to concentrate on 4 very important variables:

- **Weight/balance**

A well-balanced pack is more comfortable on the trail, easier to carry and easier to maneuver when the going gets rough.

The best way to carry any load on your back is to center it over the largest and strongest bones/muscles of your body--the pelvic girdle, the thighs, the buttocks and the upper thigh bones. This keeps the equipment load close to your natural center of gravity and minimizes the effort needed to keep everything balanced. To distribute the weight of your gear correctly:

- Pack the heaviest part of your load as close to your back and as near to the top of your spinal column as possible, centered between your shoulders.
- Balance your gear load from left to right, and counter-balance the heavy items near your shoulder blades with a few heavier items near the bottom of the pack.

*Women tend to have slightly lower centers of gravity than men. Thus women often feel more comfortable with their pack-weight centered slightly lower against their backs.

A note on terrain

If your backpacking route crosses rough terrain (or your plans involve activities like skiing or climbing with your pack on), you may find it easier to balance and maneuver by shifting your weight load slightly lower on your back. If you make this shift, be sure to keep the weight load close to your body and centered between your shoulders.

- **Accessibility**

Pack your gear so the items you need most often during the day are in the most accessible spots in your pack. Store items like your tent, sleeping bag and candle lantern first, since you won't need them until you set up your next campsite. Then make sure the items you need most often (like water bottles, sunglasses or your map) are in easy-to-reach places: near the top of your main pack compartment, under your pack's top flap or in your external pack pockets.

Taking time to think ahead will save you lots of time and hassle on the trail. And don't worry if you can't think of everything the first time out. Experience will teach you quickly what items you need nearby.

Typical day-use items

- **First-aid kit** - Keep this in an easy-to-reach place at all times.
- **Extra water** - Often stored (in a small bottle or convenient collapsible sport bladder) in an external pocket, so you don't have to take off your pack every time you get thirsty.
- **A light snack** - Usually stored in an easy-to-reach external pocket for the same reason. Energy bars make great compact, easy-to-store snacks

- **Map and compass** - Maps are often stored just under the top backpack flap (in a watertight case). Compasses are usually stored in external pockets (or on a lanyard around your neck).
- **Rainwear** - Outer layers should be stored near the top of your main backpack compartment so you can get to them quickly if the weather changes.
- **An extra clothing layer** - One should be stored near the top of the main pack compartment.
- **Sunglasses/sunscreen/insect repellent** - These are usually stored in an external pocket.

- **Comfort**

An uncomfortable backpack can make even the shortest trip unpleasant. To maximize the comfort of your loaded pack, consider:

- **The fit of the pack itself**
When it comes to comfort, nothing is more important than finding a backpack that fits correctly. A properly fitted pack will match your torso-length and body shape.
- **The amount of weight inside**
In general, the less weight you carry on your back, the more comfortable you'll be on the trail. Experts often suggest that backpackers carry no more than 30% of their body weight on their backs. But experience will likely teach you that this is far more than you want to carry mile after mile.
To figure out how much weight you can handle, start with a moderately light pack on your first few trips, and then slowly add a little more weight each time you go out. If your back starts to hurt, your knees start to ache or your attitude takes a turn for the worse, chances are you've exceeded your limit.
- **The way gear is placed inside**
Keep in mind that many backpacks ride close to your body. Corners, sharp edges or points sticking toward your back can cause discomfort. To avoid such problems, store gear flat against the inside wall of your pack. And if your backpack doesn't have padding between the main pack bag and your body, pack a clothing layer or 2 against the inside wall for extra cushioning.

- **Impact/water protection**

Backpacks get bumped, dropped and sat on all the time in the wilderness. So it pays to protect certain gear items from impact damage. The cheapest way to do this is to wrap fragile items like cameras, binoculars and camping stoves in clothing layers and pack them near the center of your pack. For even more protection, store them in special hard-walled cases or padded bags.

Most modern backpacks are made of water-resistant, coated nylon to keep your gear protected from occasional rain showers. Pack covers are also available to keep moisture at bay. But important items like the ones listed below require additional protection just to be sure.

- **Sleeping bag** - Protect your sleeping bag from water by lining its stuff sack with an extra plastic bag. This is especially important if you use an external frame pack, since your sleeping bag will probably be stored outside of your main pack bag.

- **Matches** - Always store these in a watertight container, even if they are designed to work in wet conditions.
- **Maps** - Store your maps in some sort of watertight case--preferably one that is clear (so you can read the map without having to remove it).
- **First-aid supplies** - These should be housed in some sort of water-resistant pouch or box to keep important items dry

Final Packing Hints

When to pack

Avoid last minute packing. Give yourself extra time to pack carefully, to rearrange and reorganize if necessary, and to look for (or replace) any gear items that you can't find.

General tips

- Pack clothing and other soft items between hard items to use space efficiently and to cut down on noise.
- Keep the number of items you strap to the outside of your pack to a minimum. The further away something is from your natural center of gravity, the more effort it takes to carry it.
- Strap down items carried on the outside of your pack carefully and tighten all compression straps to limit equipment shifting.
- Double-knot all lines, tie off all straps and tuck in anything that's hanging off of your pack to avoid snagging branches and rocks.

Overnight Backpacking Checklist

(Choose items that match your trip plans and the expected weather conditions)

The 10+ Essentials

Extra clothing layer(s)	Map of area (in waterproof case)
Drinking water	Compass
Food	Headlamp or flashlight (with extra batteries/ bulbs)
First-aid kit	Sunglasses (with retaining strap)
Pocket knife	Sunscreen
Matches (in waterproof container) and fire starter	

Hiking Clothing(Men's/Women's/Kids')

Quick-drying pants/shorts	Fleece jacket or wool sweater
Short-sleeved shirts	Wicking long underwear (top/bottoms)
Long-sleeved shirts	Regular underwear
Warm pants (fleece or wool)	Quick-drying swimsuit
Fleece or wool vest	

Outerwear(Men's/Women's/Kids')

Rainwear (top/bottoms)	Fleece or wool gloves/mittens
Wide-brimmed rain/sun hat	Waterproof gloves/over mitts
Warm hat (fleece or wool)	Bandanna

Footwear(Men's/Women's/Kids')

Hiking socks	Extra laces
Wicking liner socks	Gaiters
Hiking boots/shoes that match the terrain	

Camping Gear

Backpack	Funnel
Day/summit pack	Matches/lighter
Pack cover	Cook set, dishes
Tent, tarp or bivy sack	Cooking/eating utensils
Rainfly	Drinking cup
Tent stakes	Pot grabber
Footprints	Biodegradable soap
Tent broom	Pot scrubber/dish towel
Sleeping bag (in waterproof stuff sack)	Plastic garbage bags
Compression sack	Resealable plastic bags
Sleeping pad	Water filter/purifier
Sit pad or sleeping pad chair kit	Water-purification tablets
Extra nylon stuff sacks	Water bottle(s)
Food (adequate supply for your trip)	Collapsible water container
Stove and fuel	Lantern

Personal Items

Toilet paper	Lip balm (with sun protection)
Toothbrush and toothpaste	Insect repellent
Small bath towel	Head net
Brush/comb	Trowel
Other personal toiletry items	

Other/Extras

Altimeter

Binoculars

Field guides

Camera and film

Notebook and pencil

Travel games

Watch/alarm clock

Weather radio

Repair/sewing kit

100-foot accessory cord

Axe/saw

Money

Photo ID

Camping/fire permits, if
needed

Fishing license

Trip Plan (left with a
responsible friend)



How to Fit a Backpack

Forget about the color and the fancy logos. What really matters when selecting a new backpack is making sure that it's a good fit for your body.

You want to choose a pack well suited to your individual dimensions, then you need to customize it to your body shape. Here are some tips to help you accomplish that:

Determine Your Torso Length

Torso length is a crucial measurement. It is important to distinguish between your height and the length of your torso. Just because you are a certain height — say a 5' 9" female or 6' male — does not mean you automatically need a "large" or "tall" pack. Your torso length, not your height, determines your pack size. Here's how to measure yours:

- Enlist the help of friend. Have that person locate the bony bump at the base of your neck, where the slope of your shoulder meets your neck. (It's known as the 7th vertebra.) Tilt your head forward to locate it more easily.
- Using a flexible tape measure, ask your friend to start at that spot and measure down your spine, following the curves of your back along the way.
- Place your hands on you hips so you can feel your iliac crest—the twin pointy protrusions on the front of your hips. (The iliac crest serves as the "shelf" of your pelvic girdle, the area that is gripped by your pack's hip belt.) Position your hands so your thumbs are reaching behind you.
- Have your friend finish measuring at the point where the tape crosses an imaginary line drawn between your thumbs. This distance is your torso length.

Generally, your measurement will fall into one of these frame-size categories:

Small: Up to 17 1/2".

Medium/Regular: 18" to 19 1/2".

Large/Tall: 20" and up.

Pack manufacturers typically use general terms (small, medium, large) to identify their frame sizes; look at each pack's technical specifications to find the actual numeric range.

A person with a measurement right on the border (say, 17 3/4") might want to visit a supply store to try on both a small and medium version of a particular pack. Some product lines include adult packs sized to fit torso lengths as compact as 14" (10" for children) and as long as 23". If your measurement lies outside that range, you might require a custom-built pack.

Determine Your Hip Measurement

While not as crucial as your torso length, your hip measurement is useful to know. It's very helpful if you are considering a pack that offers interchangeable hip belts.

Take your tape measure and wrap it around the top of your hips, the "latitude line" where you can feel

your iliac crest — those two pointy bones just above the front pocket on your pants. A properly positioned hip belt will straddle your iliac crest, about an inch above and below that line.

Test Fit Your Backpack

How do you know if it's going to feel good without first trying it on? A comfortable fit, after all, is crucial to your satisfaction.

Ideally, you should visit a store and find an expert person and try on some packs. If that's not possible, try the procedure described below at home with any pack you order. If it just doesn't feel right, send it back. We don't want you to try and lug an uncomfortable pack into the wilds. To be fair, you need to keep in mind that no fully loaded pack ever feels truly "comfortable." What you are seeking to avoid is any sharp or unreasonable discomfort.

A Good Fit, Step by Step

If possible, start with about 20 or 30 pounds of weight to place inside the pack: sandbags or weighted pillows supplied by the store; items of personal gear packed into stuff sacks; climbing ropes. (If you're able to visit a store, throw some things in a duffel bag and bring them with you.) Distribute these throughout a pack's interior, keeping the weight close to your body with the heaviest portion near your shoulder blades. Next:

1. Loosen the pack's shoulder straps, load-adjustment straps and hip belt.
2. Slip your arms through the shoulder straps.

Tip: What's the best way to hoist a heavy pack on your back, you ask?

3. How to Hoist a Loaded Backpack

Once you stuff your backpack, how do you get that big honker on your back? Try these steps:

- I. With the pack sitting upright on the ground, move one of your legs close to it and, with one hand, grab the pack's haul loop. (That's the half-circle of webbing stitched into the pack just above the shoulder harness.)
- II. Using a wide stance with knees bent, slide the pack up the side of your calf. Bring it up to your thigh and let it rest. Your thigh should be roughly parallel with the ground.
- III. Steady the pack with one hand. Slip the other arm and shoulder through one of the shoulder straps, pushing your shoulder in as far as you can.
- IV. Without any abrupt or jerking motion, swing the pack onto your back and slip your arm through the other shoulder strap.
- V. Buckle the hip belt first, then cinch down the shoulder straps. You're set to go! When you're ready to remove the pack, be sure to first loosen the shoulder straps.



Tip: As you walk throughout the day, tinker slightly with the tightness of your hip belt and shoulder straps. A brief amount of relief might help your hips or shoulders feel less fatigued.

1. Position the hip belt so it basically straddles your hipbones (iliac crest); close the buckle and make the hip belt straps snug.

Tips: The belt should completely, comfortably cover your hips, but its 2 ends should not touch. If the belt is too loose or too tight, reposition the buckle pieces on the hip belt straps. If this doesn't give you a secure fit, you may have to try a different pack or hip belt. Do not tighten your hip belt excessively. Keep it snug, but if it's too tight or too long on the trail, you'll have sore spots on your hips the next morning.

2. Cinch the shoulder straps down tightly, then ease the tension slightly.
3. Look sideways in a mirror. Check the position of your shoulder straps:
 - For internal-frame packs: The padded sections of the shoulder straps should wrap around the crest of your shoulders comfortably and attach to the frame about 1" below that point. No gaps should appear
 - For external-frame packs **without** load-lifter straps: The shoulder straps should attach to the pack frame at a point slightly higher than the top of your shoulders.
 - For external-frame packs **with** load-lifter straps: The padded sections of the shoulder straps should wrap around the top of your shoulders comfortably and attach to the frame about 1" below that point.

1. Check your load-lifter straps. These should attach to your shoulder straps at a point just above your collarbone and just below the top of your shoulders. From there, they should rise up to join with the frame at an angle of between 40 and 50 degrees. If the angle is higher than that, your frame is too long. Any lower and your shoulders will carry too much of the load.

2. Check the shoulder strap length and width:
 - The buckle on the strap should be far enough below your armpit that it won't chafe. How far? Try a hand-width.
 - The straps should be far enough apart that they don't squeeze your neck, but close enough together that they don't slip off of your shoulders during hiking. The width is sometimes adjustable.
 - Women need to pay special attention to the fit of shoulder straps. On some unisex packs, the distance between shoulder straps may be too wide, or the straps themselves are wide enough to gouge an armpit or breast. If you find a good fit is elusive, seek out a pack designed specifically for women.

1. Check for a good torso fit. If the pack fits you correctly, you should be able to redistribute the weight of the pack between your shoulders and your hips simply by loosening and tightening your shoulder straps slightly.

Tip: Make any adjustments by moving the shoulder harness up or down, using whatever means

the individual pack provides. On a "ladder" system, for instance, you can rethread the webbing and fasten it at a new position on the ladder.

2. Adjust the sternum strap. Position it about 2" below your collarbone. You should be able to breathe comfortably when the strap is fastened. It is not essential that you keep your sternum strap fastened at all times. It is most helpful when you are negotiating uneven terrain.
3. Check for comfort:
 - Does the pack feel good on your back?
 - Does it pinch or bind or unusually restrict your movement?
 - Can you look up without hitting the pack with your head?
 - Can you squat down without cutting off the circulation to your legs?

This may seem like a lot to keep in mind, but all of the above will become automatic as you gain experience. Now walk around with your pack. Climb and descend a flight of stairs. Hop from spot to spot. Reach. Walk a line. If anything is pinching, try adjusting the various straps.

Additional Considerations

Bending the stays: The stays that serve as the frame of internal-frame packs are almost always removable and can be bent to conform to the contours of your torso. How meticulously and precisely should they be bent? It's a matter of choice. It's usually sufficient to give the stays a modest bending so they follow your spine's natural S-shape.

Ask for help from a friend. Have that person hold the bottom of 1 stay against the back of your hip, then mark with a pencil or tape the spots where your spine makes its biggest curves. Place the marked portions of the stay on the edge of a firm, durable surface and gradually bend the stay to assume the desired shape.

Breaking in your pack: Ideally, make your first trip with your new pack a short one. You can make some modest adjustments during rest stops. Over time, with regular wear, items such as internal stays and the padded hip belt will conform to your body configuration.

How to Choose the Right Sleeping Bag

Sleeping bags keep you warm by trapping and holding a layer of "dead" (non-circulating) air next to your body. This air, which is warmed by your body heat, forms a barrier between you and colder air and/or surfaces.

Step #1: Consider the Kinds of Trips You Have Planned

Your sleeping bag will take up more room in your backpack than any other item. So choose the lightest and most compact bag you can that will keep you comfortable. Just how much bag will you need out in the wilderness? Consider:

- The kinds of wilderness areas you want to explore
- The times of year that you will be taking trips
- The kinds of weather and temperatures you are likely to encounter

Step #2: Choose the Right Warmth

The warmth or "comfort" rating of a sleeping bag tells you what temperatures the bag is designed to keep you comfortable in. When deciding on the right comfort rating, follow these basic steps:

- Estimate the range of nighttime temperatures that you are likely to encounter. Most fair-weather campers sleep in temperatures between 20 and 45 degrees Fahrenheit. This will vary, however, depending upon climate, time of year and elevation.
- Adjust your estimated range up or down slightly to account for personal factors like a tendency to "sleep hot" or "sleep cold" or a preference for pajamas.
- Match your adjusted temperature range to manufacturers' suggested comfort ratings. Remember - these ratings are general guidelines only. But they will help you narrow down your choices.

Tip: Look for a bag built for temperatures at the low end of your estimated range. Why? Because it's easier to unzip your sleeping bag to cool down a little than it is to get up in the middle of the night and put on an extra layer of clothing when you're already freezing!

Step #3: Think about Insulation

The insulation inside a sleeping bag determines (to a large degree) how heavy the bag is and how much room it takes up in your pack. It can also affect how long your bag lasts. There are many different insulations (or "fills") available today.

Your Options

Natural insulation (Goose Down)

- Positives - The lightest, most efficient, most compressible and longest lasting insulation available!
- Negatives - An inefficient insulator when wet, and it takes a long time to dry. Not the best choice for backpacking in wet climates or during wet times of the year. Down is also more expensive than synthetic fills.

Synthetic insulation

- Positives - Insulate more effectively than down when wet (they still provide only marginal performance, but it's better than nothing). Dry more quickly than down and cost less.

- Negatives - Synthetic insulation can't match the overall performance of down in cold, dry conditions (though some of them come close). Tend to be less durable.

The world of synthetic insulations

Most stores carry a wide variety of synthetic insulations. To compare them, you must consider their loft (the amount of dead air that they can trap), their weight and their compressibility (how tightly it can be packed down for storage). Durability (how long an insulation can maintain its loft before it begins to break down and trap less dead air) is also important.

The world of synthetic insulations is always changing, as manufacturers create lighter, loftier and more durable insulations. This means the bags you have to choose from are better than ever. But it also means that comparing specific insulations against one another can be challenging.

Step #4: Think About Shape

The shape of a sleeping bag affects how comfortable it is to sleep in, how warm it is and how much room it takes up when packed.

Mummies

These are narrow, close-fitting bags designed to save weight and maximize heat retention. They start narrow at the feet, get slowly wider toward the shoulder, and then taper to an insulated, fitted hood.

- Positives - The slim cut increases efficiency and saves space and weight. Hoods retain a lot of warmth.
- Negatives - The narrow shape can be restrictive, uncomfortable to sleep in for some people.

Semi-rectangular

These bags offer more sleeping room than mummies, but they are slightly heavier and bulkier as a result. Most have hoods and a relatively tapered shape to conserve warmth.

- Positives - Good heat retention and a little more room to maneuver.
- Negatives - They are less efficient (more space to keep warm) than mummy bags and they can still feel restrictive to some people.

Rectangular

These are warm-weather sleeping bags. They're built to be roomy, and as a result, they let a lot of body heat escape. Many rectangular bags can be unzipped and used as comforters. Most do not have hoods.

- Positives - They're versatile; squared off shape allows for lots of room to move around.
- Negatives - They are inefficient insulators, too heavy/bulky for most weight/space-conscious backpackers.

Step #6: Consider the Extras

Most of the "extra" features available in modern sleeping bags help you hold in more of your hard-earned body heat. These features allow you to carry lighter, less bulky bags, yet still stay warm when the temperature drops.

- **Hood** - You can lose up to 50% of your body heat through your head. A hood traps this warmth and holds it in -- it should be considered essential on all cold-weather bags (+35 degrees or lower). Make sure the hood you choose is comfortable, snug and easy to adjust.

- **Collar** - This is a big neck gasket (located at shoulder level inside the sleeping bag) that helps hold heat inside the bag. They are usually found in cold-weather sleeping bags.
- **Draft Tubes** - This is an insulation-filled tube that runs alongside the main sleeping bag zipper to keep warmth from escaping. They are most commonly found on moderate- to cold-weather bags.

Step #7: Take a Test Drive!

To find out if a sleeping bag is the right size for you, hop in and try it out. It should be roomy enough to be comfortable, yet snug enough that you don't have lots of extra space to warm up. Check the length as well. Most sleeping bags are available in 2 standard lengths: "regular", which fits adults up to about 6'0" and "long", which fits adults up to about 6'6". However, some bags are available in extra-long cuts, while others are built specifically for women, short adults and even children.

How to Choose a Tent

Wind. Rain. Cold. Bugs. Dust. Creepy crawlers.

All of the above qualify as good reasons to carry a tent into the backcountry. Privacy is another nice feature a tent provides. Then there's that intangible sense of security that you feel you once you're inside and you zip the door shut for the night. It's impressive how much comfort and reassurance we humans can find between a few well-stitched panels of nylon.

You'll find no shortage of options when you shop for a tent. With so many choices, how do you know what's best for you?

The Basics

You'll be happy with the tent you select if you make sure it is:

- Lightweight.
- Strong, durable and made with quality components.
- The right size for your long-term plans.
- Suitable for the toughest weather conditions, warm or cold, you might encounter on any future trip.

How do you do this? Study the guidelines we offer here. Compare notes with friends who have experience with tents. Rent or borrow a tent and take it out for an easy overnight trip to get familiar with how tents work. You'll soon learn what features are most important to you.

What follows are guidelines that will help you make an informed decision.

Understanding Tent Specifications

When surveying online selection of tents, you'll find each model is accompanied by a general description and a list of specifications. These "specs" look technical, but the information is really quite helpful.

Understanding Your Needs

As you compare tents, ask yourself a few questions:

- WHO: For the majority of your trips, how many people will be in your party?
- WHAT kind of tents offer the best designs to accommodate your needs?
- WHEN: Which times of year do you plan to use your tent?
- WHERE do you plan to travel, and what are the worst weather conditions you might encounter?

Number of People

Your first task: Think through your ambitions for the present and the future. For the majority of your trips, how many people will be in your party? Just yourself? Two people? Four, perhaps?

If you're hiking with companions, do you plan to share a tent or carry individual shelters? Sharing a tent is a smart move because you can also share the load. One person carries the main tent body and poles while someone else totes the rainfly and stakes. Separate tents are nice for privacy, but it means more weight in everyone's pack. **Tip:** Enjoy your friends; share the tent.

It's not unusual for frequent backcountry travelers to own more than one tent. It's nice, for instance, to have a [bivy sack](#) or lightweight 1-person tent available if you decide to take a solo trip. For your first purchase, select a tent that best serves your primary style of travel.

Now, what are your options?

Tent Capacity

Manufacturers classify their tents according to **sleeping capacity**: Solo tents, 2-person tents, 3-person tents, group tents (or, 4-person tents) and family tents (nylon hotels with enough headroom to allow you to stand upright; designed for car camping). You'll also find references to items such as 1-to-2-person tents or a 2-to-3-person model. To better understand what all this means, below we'll "go inside the numbers" to explain some terms in detail.

Range of Tent Sizes

Solo (1-person) tents: Personal, lightweight shelters for the rugged individualist—and not another soul. You'll find no fudge factor for extra space in this minimalist category, which includes bivy sacks.

1-plus or 1-to-2-person tents: These are shelters with enough space to 1) provide a spacious shelter (at a reasonable weight) for a solo hiker and 2) accommodate a snug fit for 2 people. Examples: Sierra Designs Clip Flashlight CD, Moss Starlet.

2-person tents: The most popular size in backpacking tents, with plentiful choices. Designs can vary widely, so seek out one that offers a combination of features that appeal to you. Examples: Walrus Rapeede XV, Sierra Designs Orion CD.

2-to-3-person tents: These are 2-person tents cut wider (and often taller) to provide extra elbow room for its inhabitants. In a pinch, you could squeeze in a third person; it's unlikely, though, you would want to do so on a regular basis. These models can make good choices for parents who occasionally want to include a pre-teen child in their trip. Examples: REI Trail Dome, North Face Nebula.

3-person tents: If your trail party is consistently a threesome, these models are custom-fitted for your needs. Or, if you have a 2-person party and you simply prefer loads of room inside a tent (and don't mind carrying a little extra weight), these models offer a luxurious amount of space. Examples: Moss Little Dipper, North Face Stratos.

4-person tents: Compact, low-profile group backpacking tents designed to be split up and carried by all members of the party. They typically weigh between 13 and 16 pounds. These also make good car-camping tents for those who want to avoid the bulk of a traditional cabin tent and don't mind a tent where you can't stand up. Examples: Kelty Vortex 4, Sierra Designs Stretch Prelude.

Family tents: A few models, such as the Moss Base Camp Titan, are huge backpack-styled tents (small-diameter poles, lightweight fabrics) that can be transported in the wilderness by several people who share the load. Standard family tents, meanwhile, use inch-thick poles and heavy-duty materials that are great for drive-in campgrounds.

Getting a Good Fit

How do you know if a tent is a good fit—physically—for you?

Here's one technique—not perfect, but pretty good—to help you envision how you might fit into a tent: Measure your backcountry sleeping pad and use its dimensions as a general guide when you consider a tent's measurements.

- **Example:** The popular Therm-a-Rest standard model from Cascade Designs is 72" long and 20" wide. Width is the crucial measurement. To fit two people inside a tent, you will thus need at least 40 inches of width to feel even marginally comfortable—if you don't mind sleeping close. If you need a few inches of separation, then add a couple of inches to your measurement. If you thrash around a lot at night, you might need to add several inches.

Compare your numbers with the **floor dimensions** provided with each tent. That gives you some idea of how snug, or spacious, a tent might feel. Floor dimensions, of course, indicate only the *maximum* width a tent offers, typically the spot where your shoulders lie. Tents often taper in the foot sections, and walls angle in toward the ceiling. All of this impacts the amount of space found inside a tent's walls. Roomy tents are nice, but tend to weigh more.

Tip: Looking at 2-person tents? Consider one that could adapt well to some of your other travel plans. Maybe you're anticipating future solo hikes, or a long-distance bike trip. If so, a 1-to-2-person model might be a good choice. If you're a couple and you sometimes invite along a friend or relative, consider a 2-to-3-person, or even a 3-person model. You'll like the flexibility (plus that extra bit of space) those models give you.

Types of Tents

Most tents fall into 2 main categories: 3-season (general backpacking) and 4-season (winter/mountaineering) models.

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Lightweight **3-season tents** are designed for spring, summer and fall usage in temperate climates. They perform well in wind and rain, though their designs are not suited to handle significant snow loads. A 3-season model won't collapse if 2" of snow falls on it, but 20" might be a problem.

Super-sturdy **4-season tents** usually integrate 1 or 2 additional poles into their designs to fortify walls and help them stand firm against severe wind or heavy snow loads. Winter tents feature some type of rounded dome design. This eliminates flat spaces on a tent's rainfly where snow can accumulate. Of course "winter/mountaineering" tents work just fine during mild conditions. Their extra poles will make them a touch heavier than their 3-season cousins.

Convertible tents are 4-season models that can be adapted into 3-season tents. This usually involves shedding one or two poles from the tent's 4-season design. Models may also offer zippered panels that can be opened during milder conditions or feature a detachable vestibule. Examples: Sierra Designs Omega CD, REI Convert Mountain 2.

Warm-weather tents are lightweight shelters, usually designed for 1 or 2 people that feature large mesh walls to for superb ventilation. Examples: Walrus Micro Swift, REI SoloLite, and North Face Slickrock. They can be used in 3-season settings, but their special appeal is their usefulness in warmer, humid climates.

Single-wall tents are designed with the minimalist in mind. Essentially, they are rainflies equipped with a few vents you can zip open during warmer conditions. Example: Mountain Hardware Kiva.

Sleep screens are mesh coverings (some fully enclosed, some not) that keep you shielded from bugs, but not rain. Handy in warm conditions.

Bivy sacks are minimalist solo shelters that offer little space for anything but you and your sleeping bag. If saving weight is your chief priority, a bivy is worth considering. If you like room to move inside your shelter, look elsewhere.

Right Place, Right Tent

A standard rule for selecting gear is this: Always make your choice based on the toughest conditions you estimate you might face. When faced with a toss-up decision, it's better to be a little over-prepared than under-prepared.

This applies to tents. It's good to consider where, and in what conditions, you will be relying on your tent for shelter.

Are you primarily a desert explorer, or regularly visit places where humidity is a factor? **Ventilation** will be your first consideration. Look for a tent with ample window or skylight space, plus a door that includes a mesh panel.

Do you camp often in rainy climates? Take a look at roomier tents, and consider adding a gear loft. That's basically a piece of interior netting that stretches out, hammock-like, near the ceiling of your tent. Overnight you can dangle damp items from a loft and hasten their drying process.

If you camp in a variety of climates and sometimes leave yourself vulnerable to a winter storm, choose a tent capable of handling the harshest cold-weather conditions you might experience. If something unexpectedly nasty rolls in, you want to be prepared. Your best bet is likely to be a convertible 4-season tent.

Additional Considerations

Here is a list of helpful tips and reminders.

Weight: As a general rule, a group tent should weigh no more than four pounds per person. Some 1-person or 1-plus tents exceed that guideline — understandable because a solo hiker will be toting all tent components (stakes, poles, etc.) on his or her own.

Freestanding or stake-down models? A "freestanding" tent stands up on its own without the use of stakes. You can pick them up, move them around, and shake them out. Freestanders, of course, can also blow away in a powerful wind unless you secure them with (what else?) stakes. Stake-down models require stakes to remain upright. They often use fewer poles, though, making them lighter. For instance, the packed weight of the venerable 1-to-2-person Sierra Designs Clip Flashlight is just 4 pounds 5 ounces.

Pole sleeves or clips? Poles hold the tent's canopy upright and give you space to move around inside. Poles connect to the tent in one of 2 ways—via sleeves or clips. Some tents have "continuous" pole sleeves, meaning you don't have to thread poles through multiple sections of smaller sleeves. It makes tent setup a little easier and speedier. Clips are a breeze to use. They generally provide a larger gap

between the rainfly and canopy, which helps minimize **condensation**. Sleeves are considered more stable.

- **Note:** In damp or wet conditions, avoid letting your tent canopy touch the rainfly. If it happens, count on moisture invading your tent space at that point. Use guy lines to keep it taut.

Ventilation: On balmy or humid nights, you want your tent to encourage air flow. If you frequently hike in warm-weather environments, consider tents that offer plenty of mesh openings to take advantage of nights when you don't need a rainfly.

- **Note:** Ventilation is one reason why you want to buy a quality backpacking tent. Inexpensive **department store tents** offer very little (if any) breathable fabric on their canopy walls. If you're inside such a tent on a mild night, your body heat can turn it into a sauna and leave you sweltering. These tents may also include lower-quality poles and irregular, mass-production stitching. Their low prices are head-turners, true, but their durability is suspect. These tents may be fine for backyard campouts, but not for long-term trips into the backcountry.

Price: This is a broad subject. There are solutions to accommodate campers with budgets of all kinds.

Pole sections: Length is a factor to some people. Shorter sections are handy, making it possible to pack a rolled tent in a more compact spot inside your pack. Long poles often must be carried vertically while strapped to the outside of your pack.

Shape: The most popular shape in tents these days? Domes. Their symmetric design, strength-to-weight ratio and relative ease of assembly has endeared them to the camping and hiking masses. Weight-saving designs, particularly wedges, have also remained popular.

Ground cloths: Many manufacturers are now creating "footprints" of their tents—customized ground cloths cut to fit a tent's floor design precisely. Most come with attachment points that connect them to the tent. Both footprints and traditional ground cloths/tarps help shield a tent's floor from abrasion and, in the morning, offer you a dirt-free place to roll up your tent. It's smart to carry one.

Extras: Look for helpful nuances such as inside wall pockets (very nice to have), gear lofts, factory-sealed seams and convenient vent windows. Roomy vestibules are also nice.

Setup: Practice setting up a new tent before you take it into the backcountry. If you need to seal the seams, you'll have to set it up before your first trip.

Does Everybody Need a Tent?

Some hardy souls will argue that a tent is a burdensome luxury. Ultralight advocates point out that a tarp, some cord and some ingenuity are all people need to create sufficient shelter in the wilderness.

In many situations, that's a valid point. But then an unexpected overnight weather front blows through, or skeeters arrive by the thousands, or you're not really sure if a nearby ant hill is inactive after all. A night or two like this is usually all it takes to convince most recreational hikers that the full enclosure a backpacking tent provides is worth a little extra bulk and weight in their packs.

Chosen wisely, a tent will add only a modest amount of weight to your load. In return, it will give you the confidence to know you are equipped to take shelter from just about any rude surprise nature may dish out during your trip.

Quick review

- Tents serve both a physical and psychological function; they protect you from the elements and surround you with a sense of security.
- Anticipate what awaits you in the backcountry — the weather, number of people in your party — and seek out a tent equipped to accommodate your most demanding ambitions.
- General backpacking (3-season) tents are excellent performers that tend to be lightweight; winter/mountaineering (4-season) tents are good year-round, and give you an extra buffer of stability during harsh conditions.

QUESTIONS?

As you shop, do not hesitate to ask store personnel for suggestions or tips. Or feel free to ask me about suggested gear for boys. I have had backpack awareness training through BSA and would love to answer any question you have.

Also your best reference guide on clothing needs and camping gear needs is – ta da – the Boy Scout Handbook. Not only does it show the equipment but also it describes its use and proper care. At our weekly meetings, we sometimes will discuss equipment and gear so you may want to consider sitting in on those nights to see what other members of the troop use.

Since your son is getting older, it is probably getting a little difficult to know what to get him for - he is too old for toys and too young to want clothing. Camping equipment is the best gift, especially because of the range in price from a dollar or two to, well, up there. Next time Aunt Martha or grandma asks for a gift suggestion, mention padded hiking socks, a pot grabber, or a thermal sleeping pad.

OK. Got it all? Take a deep breath and call me if you have any questions. I am here to help.

-Steve Eisinger
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