

The PACK

What makes a good pack?

Internal vs external frame

Internal for climbing, skiing, and off trail hiking

No top bar to snag on limbs

Narrower profile

At the lower price levels typically hotter because of lack of ventilation against the back

Harder to fit and adjust to youth sizes

Harder to "grow"

More expensive

External for general use, trail hiking, and base camp or long-term residential camp

Usually has more pockets and lash points

Frame can be adjusted for height, shoulder width, hip to shoulder distance

Accommodates growth well

Better back ventilation

Easier to help on and off

Can remove pack from frame for repairs or to use frame to haul other gear

Weight should rest on hips not hang from shoulders

Weight should balance at center

Adjustments to the hiker's body dimensions should be well within, not at the extremes, of the adjustment range

WHEN TESTED WITH WEIGHT IN IT AND PROPER ADJUSTMENT, **IT SHOULD BE COMFORTABLE**

ALWAYS TRY IT BEFORE YOU BUY IT.

Remember that Scouting is a BOY activity. Most packs are designed for adults.

Note: School packs (similar to day packs) can be quite dangerous and physically damaging when used to haul the weight of personal gear over rough terrain. While typically fine for a day hike, these packs can produce lower back damage and pulled leg and upper chest muscles if used in place of a backpack.

Age and size

A reasonably good "starter" pack costs anywhere from \$60 to \$120.

Youth sizes are needed for most boys younger than 13.

Scouts under 13 tend to not have adequate strength in legs and hips for heavy hauling

Good estimate of carry weight is 20% of body weight.

For boys under 13, this is too much weight because of immature growth plates in the legs and the juvenile size and shape of the pelvic girdle. A better value for these boys is 15%. This means that a 75 pound boy can safely carry 11 pounds. A 110 pound 13-year old boy can carry 17 - 20 pounds depending on physical maturity.

Do not use military rucksacks or military style packs. They are the wrong size and shape for a young boy and designed to carry the wrong kind of gear for Scout outdoor activities for the most part.

Select a color that is easily visible in the woods. In general, Scouts should be discouraged from wearing camouflage clothing and packs as it makes locating lost boys much more difficult during a search. A bright colored pack (most are red, blue or yellow) can be seen easily from the air.

Problems:

It is difficult for younger boys in the troop to be told they can't have a backpack!

It is a major investment to purchase a new pack that a boy will outgrow in 12 to 18 months.

A boy will outgrow a youth size pack in 18 months or less

Solutions:

Remember 2 principles, "Scouting is a game with a purpose" and KISMIF (Keep it simple make it fun).

Younger boys can have and use backpacks if they are taught to do so properly. Scoutmasters should take carry weight and endurance into consideration in planning outdoor activities that will permit younger scouts to practice good backpacking habits without subjecting them to potentially dangerous physical strain.

Let younger boys use their backpacks for camping trips even when there are no long treks to be taken. It's a good idea to let boys learn to pack properly and plan their gear under circumstances where it is not as much of a crisis if something is forgotten.

Plan packing "contests" for troop meetings. See who can pack for a 2 night trip with the least weight. Set some guidelines about what types of equipment and clothing **MUST** be included. Don't let the boys leave out socks and underwear just to save weight!

Let patrols work to divide up the gear load so that each member is carrying a share that is appropriate for his age and weight. Patrols should weigh themselves and their packs to insure that loads are distributed according to acceptable carry weights.

Younger boys who outgrow their packs can sell them to new boys in the troop. That way, cost is kept to a minimum and the packs will get a long and useful life.

Youth frame packs are made by several manufacturers and cost about the same (\$60 to \$80). Youth packs also are available through B.S.A. supply and at the Scout Shop at Jet Potter.

BOOTS

When boys begin to carry weight near or at their percentage limit over more than short distances or over rough terrain, they should wear proper boots. Loose sneakers with the laces dragging aren't "style," they are dangerous. In addition to increasing the risk of ankle and foot injury, it is very difficult for anyone wearing a loaded pack to bend to tie a shoe! Boots should be waterproof and ideally extend up over, and support the ankle if heavy weights are to be carried. Environmental considerations suggest that lug soled boots damage trails and plants by over-compacting the soil. While these boots provide superior traction on rough terrain, other less damaging soles can be purchased that work equally well under most circumstances. Athletic shoes (sneakers) typically cannot be waterproofed and will allow water from dew and rainfall to soak the foot. This is a sure way to get blisters and fungal infections. Boots should be waterproofed with an appropriate material. Be sure to check first before applying waterproofing. Various types of leather and other materials require different waterproofing techniques. Don't risk ruining a new pair of boots by soaking them with the wrong stuff! A less expensive alternative to hiking boots is to wear a pair of waterproof socks (available from most hunting supply stores and outfitters) inside sneakers. This keeps the feet dry even if the sneakers leak.

WATCH OUT for the boy who shows up in a brand new pair of hiking boots for a backpacking weekend. Blisters and then some!!!!

Don't dry leather boots over a campfire. Uncomfortably hot temperatures can ruin boots very quickly. It's bad enough when the leather shrinks but a hot fire can also soften and change the shape of the sole.

A good combination of boots and backpack are essential to a successful hiking trip. Planning and proper packing take care of most of the rest.

WHAT TO PACK**Basics****Sleeping bag**

Come in various sizes and weights. For the most part, K-Mart / WalMart / Target sleeping bags are large and heavy.

The lower the price, the heavier the bag tends to be for a comparable level of comfort and thermal protection

Bags can be either down filled or filled with artificial down (Primaloft® or similar). Down collapses when wet and loses much of its insulating ability. Artificial down doesn't.

For 3 out of 4 seasons a bag good to 20° will do fine and is light and easy to carry.

A bag good to 5° is somewhat bulkier and heavier.

Note: Younger boys, particularly those who are slight in build, do not have the muscle mass to generate heat inside a sleeping bag and also tend to leave a lot of unused space. The temperature rating of a sleeping bag assumes that an adult of a size corresponding to the bag is using it. Remember that the source of heat for a sleeping bag is the body that is inside it! A good rule of thumb is to reduce the rating of a bag by about 5° for every year that a boy is under 14. A 20° rated bag, therefore, would have an effective rating of 35° for a boy 11 years old.

Bags can be carried in a stuff bag or compressed. Be careful, younger boys may have trouble stuffing their bags in tight sacks.

A foam pad (eggshell foam, regular foam, self-inflating cushion) will provide an insulating space between the sleeping bag and the ground. Air mattresses can be very heavy, take quite a lot of puffing to inflate and can be punctured. Air mattresses are also very difficult for young boys to deflate and repack.

Most people sleep better with the head slightly elevated. A “stuff bag” pillow can make for a much better night’s sleep and adds little additional weight to a pack.

Tent

A good backpacking tent weighing only 3 or so pounds can cost upwards of \$200 to \$300 dollars and sleeps only one person. Older boys and adults may well want to invest in this type of tent as it is durable, light, reliable, and ideally suited to longer backpacking treks.

However ...

Scouts, particularly younger scouts, tend to congregate in tents and enjoy having a tent mate. Younger boys also need the added security of a friend being with them in their tent. This makes a lightweight backpacking tent less than ideal for younger campers. Older scouts may welcome the privacy of a one-person tent but still like to socialize in a larger tent when possible.

Less expensive tents can be quite heavy.

A good solution is to divide the load. A tent typically consists of the actual tent, a rain fly or cover, ground cloth, poles and stakes. The poles, stakes, and rain fly can be as much as 50% of the weight of the tent. Having a two person tent carried by two people often results in each individual carrying less weight than if they were each carrying a one person tent.

Personal Gear

Boys should always be encouraged to engage in good personal hygiene when camping. Often this is difficult and just trying to get them to keep on dry socks and clean underwear will try the best of leadership skills.

Here is where the zip-lock Baggie® really shines.

Toothpaste and other personal items often can be found in the travel sections of drug stores and discount stores. These small tubes, bars of soap, and so forth take up less room and weigh less.

Poncho and rain cover. No matter how well made, packs leak and in heavy rain the contents **will get wet**.

A good trick is to line the pack with a trash bag and pack into it. This will provide a waterproof container for the clothing that will work even if the pack leaks.

Pack a small towel, dry handkerchief, and dry pair of socks in a small waterproof bag where it can be gotten to easily. Zip-Lock® bags work really well for this.

Carry an extra trash bag to put the pack into overnight. Most backpacking type tents have a gear vestibule for the pack as there isn’t room inside. Putting the pack into a trash bag before putting it into the vestibule will insure that it stays dry and mud free.

First aid kit (be sure to include anti-sting, personal medications, moleskin), keep where it can be gotten to easily. This can be the first aid kit that fulfills the requirement for 2nd Class Scout.

Insect repellent, sun block (yes, it’s possible to get a sunburn while walking through the trees).

Clothing

Always bring one extra set of dry clothing. Even if there is no rain, a misstep while crossing a creek, a spill at meal time or any of a number of things can produce the need for an unplanned change of clothes.

Pack by complete sets of clothing. Having to dig everything out of a pack and completely repack to find a

pair of dry socks invites lost gear.

Always check the weather as you are packing and pack for the weather.

Pack cool, loose fitting clothes such as sleep shorts or just a loose t-shirt and cotton athletic shorts for sleeping. Boys should know that sleeping in underwear that they have been hiking in all day is a great way to get a really nasty fungal infection.

Heavy clothes inside a good sleeping bag can cause enough sweating during the night to soak a boy to the skin. Let the bag provide the warmth.

Always subtract 5° to 10° from the predicted low temperatures as evaporative cooling from trees and ground cover coupled with being away from concrete and asphalt result in more dramatic nighttime cooling.

Food

Quick foods, such as Raman noodle soup, are easy to fix on the trail but don't provide nutrition for the long haul. Energy bars can be used but tend to be very dry and require that you drink liberal amounts of water with them. MREs (Meal Ready to Eat) are always a favorite with Scouts but have drawbacks. They are heavy, feed only a single individual, generate excessive garbage, and the heating units can be easily used to make an explosive device. An alternative is dehydrated trail meals. They weigh between 5 and 8 ounces, require only hot water to prepare, and can feed two Scouts. Most consist only of an outer wrapper and a bag in which the food is prepared. Troops may want to plan the occasional weekend camping trip with only trail foods on the menu to give boys the chance to learn to prepare them and to decide what they do and don't like.

Troops should develop a basic packing list for their boys to help newer Scouts learn what they should and should not take.

Sample Gear List (adapted from the *Fieldbook*, p. 260)

Backpack	Whistle
Boots	Toothbrush
Socks	Toothpaste
Clothing appropriate for the season	Biodegradable soap (Camp Suds works really well and will do dishes, clothes and body)
Sweater, jacket, or sweatshirt	Small towel
Parka or coat (if needed)	Metal mirror
Rain gear	Comb
Hat	Pencil and paper
Tent	Repair kit (small sewing kits can be purchased in most discount stores)
Ground cloth	Cord (50' nylon parachute cord on spool)
Tent stakes	Bear bag
Sleeping bag	Bear bag rope
Sleeping pad	Emergency coins (quarters for phone calls)
Stove and fuel	Insect repellent or personal netting
Cook kit	Bandana
Cooking utensils	Compass
Cup	Light weight shoes for around camp
Bowl or plate	Toilet paper (diaper wipes in a plastic bag are good)
Spoon	Hiking stick (optional but can really help on rough terrain)
Food	
First aid kit	
Pocketknife	
Matches (keep dry in a match case or old 35mm film container)	
Water bottle or canteen	
Fire starters	
Flashlight with extra batteries and bulb	
Watch	

Packing

Pack heavy materials higher and towards your back. Center them about between your shoulder blades. This keeps the center of gravity (the balance point) of the pack high and close to your back. Otherwise the pack pulls you backward or forces you to stoop forward to maintain your balance. This can be very uncomfortable and somewhat unsafe.

Keep rain gear and pack cover in an easily accessible outer pocket or compartment.

Keep first aid kit, whistle, cord, emergency coins, toilet paper, soap, dry sock/towel pack in outer pockets and easily accessible. Make sure the first aid kit is easily accessible. Most emergencies consist of cuts and blisters and rarely happen while inside the tent. Having to dump your pack on the trail to find a band-aid can be a very time consuming and frustrating experience.

Pack heavier gear such as water bag, tent, food, stove, and cook kit in the upper compartment of the pack. (Most youth packs only have a single compartment so do the best that can be done.)

Lighter gear like clothing, extra shoes, and jacket should be packed in the lower compartment.

Sleeping bag should be in a stuff bag or compression sack and be lashed or strapped to the bottom of the frame. Internal frame packs typically have an expanded lower compartment to accommodate a sleeping bag.

Always pack in the reverse of the order that you expect to have to unpack. This minimizes “digging.”

Always teach Scouts to live out of their packs, even during residential camps. This reduces lost gear, speeds up getting ready to go in the morning, prevents many “critter raids,” and generally provides a safer environment in a tent and around camp.

NEVER keep food or empty food packages in a backpack that is left on the ground overnight. Food should be hung in bear bags, trash should be kept in sacks hung well off the ground. Raccoons, opossums, skunks and small rodents will damage or destroy a pack while following a food odor and will open trash bags and scatter the contents around a campsite.

ALWAYS have a shakedown. The night before a trip, everyone shows up fully packed. The packs are carefully emptied (not just dumped) and the gear and provisions checked to be sure that everything is included. Packs should be weighed and decisions made if necessary about what to take and what to leave behind. Some troops then lock up the gear until departure the next day. If the trip is well planned in advance and the gear properly packed, a lot of problems can be avoided. This is also a good opportunity to teach new Scouts how to pack their gear efficiently and balance their packs.

Don't invest in every possible piece of backpacking gear up front. You'll spend a great deal of money and use very little of the gear. Quite often, common household items will work just as well as much more expensive backpacking specialty items. A plastic sandwich container works really well for a first aid kit, withstands water, can be stocked with items from the drug store and costs a great deal less than a \$60 waterproof kit with the same materials inside. Be careful, however, with new Scouts as they will buy a lot of gear that just doesn't work at all. Encourage them to try the gear out at home first before bringing it to camp (usually this doesn't take very much encouragement at all). Be careful, parents want to buy the most solid and substantial gear they can in the hopes that it won't get either broken or lost. Unfortunately, this will also tend to be the heaviest gear available. Gear demonstrations for parents and Scouts at Troop meetings are a great idea and can head off many of these problems.

Sample Weights

Kelty sleeping bag (mummy, regular, 20°)	4.4 lbs
Kelty sleeping bag (mummy, regular, 5°)	4.0 lbs
Coleman sleeping bag (rectangular, large, 50°)	8.0 lbs
Frame pack (youth)	3.6 lbs
Frame pack (adult, regular)	4.5 lbs
Towel, socks, handkerchief	0.4 lbs
Youth clothing (shorts, t-shirt, socks, undershorts)	1.2 lbs
Youth clothing (jeans, t-shirt, socks, undershorts)	2.2 lbs
Spare shoes	1.6 lbs
Poncho (full size, standard weight)	1.2 lbs
Leather work gloves	0.4 lbs
Tent (2 person dome, complete)	
Tent	4.0 lbs
Rain Fly	1.2 lbs
Poles and Stakes	2.8 lbs
Ground cloth (8' x 10' plastic tarp)	2.0 lbs
Air Mattress (cot size)	2.8 lbs
Water (1 qt)	2.2 lbs
Can soda (12 oz)	0.8 lbs
Camera	0.8 lbs
Hiking staff (BSA #01443)	1.2 lbs
Flashlight (2 "D" cell)	1.0 lbs
Flashlight (Mini MagLight, 2 "AA" cell)	0.2 lbs
Food (daily)	1.5 lbs

Weight savings can be accomplished by carrying AA cell flashlights instead of D cell, one complete change of clothes and extra socks and underwear instead of 2 complete sets, a 16 oz canteen which is refilled from available sources rather than a 32 oz bottle, a fitted lightweight plastic ground cloth in place of a tarp, a foam pad in place of an air mattress. For tentage, allow about 4 lbs per person. This will be the case for 2 people each carrying half of a typical dome tent (one carries the tent, the other the fly and poles). A lightweight 2 person backpacking tent will weigh between 3.5 and 4.5 lbs.

Youth pack, 2 full changes of clothing, spare socks, 1 qt water, 1.5 days food, flashlight, sleeping bag, poncho, work gloves, tent (1/2), ground cloth, spare shoes = 23.6 lbs.

Youth pack, **1 full change of clothing plus socks and underwear, ½ qt water, 1.5 days trail food, AA flashlight, sleeping bag, disposable poncho, work gloves, tent (1/2), ground cloth, spare shoes** = 17.75 lbs.

Reducing the weight of the items in bold print brings this load into an acceptable range.

Both lists leave out mess gear, cook stove, personal grooming gear, sleep clothes, jacket or sweatshirt and assumes medium to lightweight clothing appropriate for daytime temperatures at or above 65°. Note that the maximum carry weight for a boy weighing 110 lbs is between 17 and 22 lbs depending on age and physical build. Please be very careful not to rush boys into backpacking or trekking before they are physically ready and able to carry their gear. Believe me, they will want to get right out there and hike, hike, hike.

References:

Backpacking Merit Badge pamphlet, B.S.A. publication 33232
Boy Scout Fieldbook
Boy Scout Handbook
Outdoor Skills Instruction: Backpacking, B.S.A. publication 33035
Outdoor Skills Instruction: Camping, B.S.A. publication 33003

Resources:

B.S.A. Catalog

CampMor (Mail Order, excellent prices and very good service.) (800) 230-2151 (for catalog),
<http://www.campmor.com>

Jet Potter Center Scout Shop

3414 Hillsboro Road
Nashville, TN 37215
Phone: (800) 899-6622

Order of the Arrow - The OA promotes camping as a service to Scouting. OA members will be glad to help your Troop and to provide or recommend resources.

REI (A chain store with locations across the United States, including Brentwood. Excellent but somewhat expensive outfitters)

Bass Pro Shop (A chain store found at most Mills outlet malls, including Opry Mills in Nashville. Good selection of packs other gear.)

Grandpa's (41A North, Clarksville. Has really improved their camping and hiking stock. Also houses a Middle Tennessee Council Scout Shop.)

North Cumberland Outfitters (1851 Hwy 48/13 in Clarksville. (931) 920-8822 Good selection of packs, ultralight stoves and other cooking equipment)

Sun & Ski Sports (A chain store found at Opry Mills in Nashville. Good selection of gear for backpacking and canoeing.)