



# CAMPING

*Karsten*



**BOY SCOUTS OF AMERICA**  
**MERIT BADGE SERIES**

## How to use this pamphlet.



The secret to successfully earning a merit badge is for you to use both the pamphlet and the suggestions of your counselor.

Your counselor can be as important to you as a coach is to an athlete. Use all of the resources your counselor can make available to you. This may be the best chance you will have to learn about this particular subject. Make it count.

If you or your counselor feels that any information in this pamphlet is incorrect, please let us know. Please state your source of information.

Merit badge pamphlets are reprinted annually and requirements updated regularly. Your suggestions for improvement are welcome.

Send comments along with a brief statement about yourself to Boy Scout Division • Boy Scouts of America • 1325 West Walnut Hill Lane, P.O. Box 152079, Irving, TX 75015-2079.

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# CAMPING



BOY SCOUTS OF AMERICA  
IRVING, TEXAS

## Note to the Counselor

The Camping merit badge challenges Scouts mentally and physically. Camping helps the Boy Scouts of America deliver the promise of outdoor adventure to Boy Scouts. At all times that Scouts participate in a BSA activity, they must have the proper supervision. By following the guidelines under “III. Camping” in the BSA’s *Guide to Safe Scouting*, unit leaders can help ensure the well-being of Boy Scouts under their supervision. Those guidelines are discussed here briefly.

- **Wilderness camping.** Have a plan to help minimize risks and manage a crisis should one occur. Involve Scouts and Scouters in this process so that they all know of potential dangers and how to avoid them. Camping takes proper planning, leadership, and good judgment.
- **Trail safety.** Stay alert; take care in everything that is done on the trail, and plan activities within the group’s skill and maturity level. Alert youth members to the dangers of unusual environment with proper instruction on fire safety, orienteering, and safe travel. On the trail, instruct group members to *stay together*, and avoid loose rocks and dangerous ledges, cliffs, and areas where a fall might occur. When Scouts understand the reason for rules of safety, they abide by those rules more willingly.

It is strongly recommended that at least one person in the group be currently certified in first aid through the American Red Cross or any nationally recognized agency.

- **Beware of lightning.** During lightning storms, avoid the summits of mountains, crests of ridges, slopes above timberline, and large meadows. If you see a storm approaching, quickly descend to a lower elevation, away from the direction of the approaching storm.

Instruct Scouts to squat down and keep their heads low. Avoid isolated trees and trees much taller than adjacent trees; and water, metal objects, and other substances that will conduct electricity long distances.

If the threat of lightning strikes is great, group members should spread out at least 15 feet apart and squat with feet close together. Remove backpacks with either external or internal metal frames. In tents, stay at least a few inches from metal poles.

- **Pure drinking water.** Serious illness can result from drinking or cooking with unpurified water. Purify all water obtained along the trail, or carry water from home.
- **BSA property smart.** Remember the three C's: care, courtesy, and cleanliness. Follow these guidelines:
  - (1) In advance, obtain permission from landowners;
  - (2) when visiting public lands, obtain a permit in advance from the land management agency;
  - (3) park only in designated areas;
  - (4) if you must mark a trail, bring small signs that can be placed as the group enters and removed upon leaving;
  - (5) obtain permission to cross private property, and always leave gates exactly as you found them;
  - (6) treat the landowner's livestock and other animals with respect;
  - (7) keep noise to a minimum (especially at night) and follow the rules on building fires in camp;
  - (8) practice Leave No Trace;
  - (9) thank the owner as you leave, or send a thank-you note;
  - (10) when obtaining permission to enter a property, never underestimate your departure time, and if you specify an exit time, leave at that time;
  - (11) don't repeatedly frequent the same well-known sites, and limit camping in the backcountry at one location to no more than three days;
  - (12) clean up and remove trash, and whenever possible, repair damage left by inconsiderate visitors.



- **Hantavirus.** This deadly airborne virus is spread through contact with the urine and feces of infected rodents. Symptoms include fever, chills, muscle aches, nausea, vomiting, diarrhea, abdominal pain, and a dry, nonproductive cough. If you suspect that someone has been infected, seek medical treatment immediately.
- **Rabies prevention.** Remind Scouts to steer clear of wild animals and of domestic animals that they don't know. If someone is scratched or bitten by a potentially rabid animal, wash the wound thoroughly with soap and water. Immediately seek medical attention. Get a description of the animal, and notify local animal control officials, the police, or board of health.

The guidelines mentioned here are discussed in greater detail in the *Guide to Safe Scouting*, with which all unit leaders should be familiar. In addition to these guidelines, each participant—youth and adult—must have a current physical examination that has been performed by a licensed health-care practitioner using the BSA Personal Health and Medical Record Form—Class 3.

Unit leaders may want to use the following BSA publications to help make campouts safer and more enjoyable.

- *Boy Scout Handbook*, 11th edition
  - Chapter 4, “Second Class Scout”: map and compass, orienteering
  - Chapter 8, “Hiking”: clothing and layering, cold-weather clothing, Scout Outdoor Essentials
  - Chapter 10, “Cooking”: water purification, menus, camp cooking, camp kitchen cleanup
  - Chapter 11, “First Aid”: first-aid preparedness
- *Leave No Trace*—conservation, environmental ethics
- *Passport to High Adventure*—local council high-adventure opportunities
- *Topping Out* and *Climb On Safely*—climbing and rappelling

# Requirements

1. Show that you know first aid for injuries or illnesses that could occur while camping, including hypothermia, heatstroke, heat exhaustion, frostbite, dehydration, sunburn, insect stings, tick bites, snakebite, and blisters.
2. Learn the Leave No Trace principles and the Outdoor Code and explain what they mean. Write a personal plan for implementing these principles on your next outing.
3. Make a written plan for an overnight trek and explain how to get to your camping spot using a topographical map and compass.
4. Make a chart showing how a typical patrol is organized for an overnight campout. List assignments for each member.
5. Do the following:
  - a. Prepare a list of clothing you would need for overnight campouts in warm weather and in cold weather.
  - b. Discuss footwear for different kinds of weather and how the right footwear is important for protecting your feet.
  - c. Explain the proper care and storage of camping equipment (clothing, footwear, bedding).
  - d. Explain the term “layering.”
  - e. Present yourself with your pack for inspection. Be correctly clothed and equipped for an overnight campout.

6. Do the following:
  - a. Describe the features of four types of tents and how to care for tents. Working with another Scout, pitch a tent.
  - b. Discuss the reasons and methods for water purification. Discuss camp sanitation.
  - c. Tell the difference between “internal” and “external” frame packs. Discuss the advantages and disadvantages of each.
  - d. Discuss the types of sleeping bags and what kind would be suitable for different conditions. Explain the proper care of your sleeping bag. Make a comfortable ground bed.
7. Prepare for an overnight campout with your patrol by doing the following:
  - a. Make a checklist of personal and patrol gear that will be needed.
  - b. Prepare a camp menu that is right for backpacking. Give recipes and make a food list for your patrol. Plan two breakfasts, three lunches, and two suppers. Discuss how to protect your food against bad weather, animals, and contamination.
  - c. Pack your own gear and your share of the patrol equipment and food for proper carrying. Show that your pack is right for quickly getting what is needed first, and that it has been assembled properly for comfort, weight, balance, size, and neatness.
8. Do the following:
  - a. Explain the safety procedures when using a:
    - (1) Propane or butane/propane stove
    - (2) Liquid fuel stove
  - b. Discuss the advantages and disadvantages of different types of lightweight cooking stoves.
  - c. Cook for your patrol a trail meal requiring the use of a lightweight stove.



9. Show experience in camping by doing the following.
  - a. Camp a total of at least 20 days and 20 nights.  
(You may use a week of long-term camp toward this requirement.) Sleep each night under the sky or in a tent you have pitched.
  - b. On any of these camping experiences, you must do TWO of the following, only with proper preparation and under qualified supervision:
    - (1) Hike up a mountain, gaining at least 2,000 vertical feet.
    - (2) Backpack for at least four miles.
    - (3) Take a bike trip of at least 15 miles or at least four hours.
    - (4) Plan and carry out a float trip of at least four hours.
    - (5) Rappel down a rappel route of 30 feet or more.
    - (6) On one of your campouts, perform a conservation project approved in advance by the private landowner or public land management agency.
10. Discuss how the things you did to earn this badge have taught you about personal health and safety, survival, public health, conservation, and good citizenship.



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"One man will have twice the comfort, twice the pleasure, and at one-half the expense, that another man will, simply by knowing how to camp."

—Howard Henderson,  
*Practical Hints on Camping;*  
Jansen, McClurg and Company, 1882

"Go light; the lighter the better, so that you have the simplest material for health, comfort and enjoyment."

—George Washington "Nessmuk" Sears,  
*Woodcraft*, 1884

"You cannot expect all the comforts of home in a tent in the woods or prairies. But with a carefully chosen camp site, a well pitched tent and a comfortable bed, there is no reason why you should not enjoy the best fun there is in camping in the wilderness."

—*Handbook for Boys;*  
Boy Scouts of America, 1948

"And they shall dwell safely in the wilderness and sleep in the woods."

—Ezekiel 34:25

# Introduction

Camping! For nearly a hundred years, Scouts have been setting out on overnight adventures under the open skies. They have felt the sun on their backs and the wind in their faces. When storms broke overhead, they used their skills to stay dry and warm. When a morning dawned brisk and clear, they were sure there was no better way to live.

Lord Baden-Powell knew that, as well. When he founded the Scouting movement in the early 1900s, he encouraged every Scout to master the art of living out-of-doors. He believed a young person able to take care of himself while camping would have the confidence to meet life's other challenges, too.

Times are different now. We are more likely to travel by automobile or mass transit than on foot or horseback.

Many of us live in great cities, and the wonders of modern technology have shaped for us a way of life that Baden-Powell would barely recognize.



But one thing has not changed—the deep satisfaction of camping. Like you, Boy Scouts everywhere are still eager to head out for a few days or weeks of living in the open. The sun still shines out there, as it always has, and the wind still blows. There are adventures just waiting for you to begin. When you are camping with your fellow Scouts, you can have the time of your life working, playing, and learning together. More than ever, you will be part of a great Scouting tradition.





# What Is Camping?

When the naturalist John Muir began hiking into the high country of California's Sierra Nevada in the 1870s to wander for a week at a time, he carried little more than bread or crackers, some grain meal, and a bit of sugar and tea. He had several cans he could use as pots. At night he rolled up in a couple of blankets, or built a fire to keep warm. With his light load, Muir ranged far and wide among the rugged California peaks.

Every four years, Boy Scouts by the thousands gather for a national jamboree. They pitch their tents in circles or rows, cook nourishing meals packed with variety and flavor, and spend their days building friendships and sampling all sorts of Scouting skills.

Members of a Scout troop from a small Midwestern town hike through farm fields and along dusty roads to a patch of woods where they settle in for the night. Scouts from a community near the mountains climb a steep trail to an alpine lake, their backpacks filled with just the right gear for a wilderness week. Expeditions of older Scouts set off on extended backcountry journeys at BSA camps and high-adventure bases around the country.

John Muir was camping. So are all of those Scouts. Camping is such a wide-open activity that it has room for everyone, from a solitary traveler moving quickly through the backcountry to "frontcountry" experiences involving 10—or 10,000—Scouts sleeping under the stars.

No matter how many or few, and no matter where they pitch their tents, all campers have a love of the outdoors. They share an eagerness to live simply and well, and the willingness to do whatever is necessary to protect the environment they are privileged to enjoy.



# Preparation

Of all that you can take with you on a camping trip, the most important thing is knowledge. No item of outdoor gear will be of any use unless you know what to do with it. If you ever find yourself without a particular piece of equipment, or without any gear at all, you can always rely on your wisdom and resourcefulness to see you through.

Plan ahead and you can be fairly sure that you will have everything you need—both in your pack and in your head—to make a camping trip a success. Start by thinking about these most important issues:

- How you will handle outdoor emergencies
- How you can care for the out-of-doors

## First-Aid Preparedness

The information covered by the Tenderfoot, Second Class, and First Class Scout first-aid requirements can help you deal with injuries or illnesses that may arise while you are camping. The current edition of the *Boy Scout Handbook* includes descriptions of the symptoms and treatment of hypothermia, heat-stroke, heat exhaustion, frostbite, dehydration, sunburn, insect stings, tick bites, snakebite, and blisters. Review those pages to refresh your awareness and ability to help prevent these situations from occurring. Know the symptoms and be ready to make an appropriate response if you encounter them in a fellow hiker or someone else you meet along the way.



**First-aid knowledge comes in handy when you least expect it.**

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First-aid training gives you instructions for taking care of yourself and others in the field. In much the same way, the principles of Leave No Trace and the Outdoor Code provide guidelines for protecting the environment.

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## Altitude Sickness

Camping may take you to high places where *altitude sickness* (also known as AMS, or *Acute Mountain Sickness*) can be a concern. Fortunately, altitude sickness is seldom a problem for people at elevations of less than 8,000 feet above sea level.

Going to a place that is higher than you are accustomed may leave you short of breath because the atmosphere around you becomes thinner and contains less oxygen. Within a few days, your body will *acclimate* to higher altitudes by producing extra red blood cells to carry more oxygen to your tissues and organs, and you should feel fine.

Taking steps to help prevent altitude sickness is far better than suffering from it during a hike. The following suggestions can make your “high” adventure more comfortable and more fun, too.

- **Drink plenty of fluids.** As a rule, take in enough water so that your urine remains clear rather than dark yellow.
- **Ascend gradually.** Permit your body to acclimate gradually as you go higher. Spend a few days at 5,000 to 7,000 feet and then a few more at 8,000 to 10,000 feet.
- **“Climb high, sleep low.”** Use this standard practice of mountaineers. While adjusting to thinner air, after hiking upward during the day, descend to a lower camp for a good night’s rest.

## WARNING SIGNS

Watch for any or all of these symptoms of altitude sickness:

- Headache
- Nausea
- Unusual tiredness
- Loss of motivation

These symptoms can also be warning signs of *hypothermia*, a far more common first-aid emergency among hikers. Begin treatment for hypothermia by making sure that the person is warm, is wearing dry clothing, is sheltered from the wind and chilly or wet weather, and has had enough to eat and drink. If the person does not rapidly improve and the elevation is above 8,000 feet, treat for altitude sickness as well.

### **TREATMENT FOR ALTITUDE SICKNESS**

*Descend, descend, descend!* Going down a few thousand feet in elevation will almost always relieve the symptoms of altitude sickness. Rest, fluids, and food may also help. If symptoms persist or worsen, seek medical assistance.

### **Leave No Trace/Outdoor Code**

From the Appalachians to the Cascades, and from the Gulf Coast to the Great Lakes, America is blessed with magnificent open country. As a camper, you will have many chances to sample it, but with that privilege comes a great responsibility to cause no harm to the environment.



The Boy Scouts of America has adopted the principles of Leave No Trace to guide Scouts in conducting their outdoor activities. Many land management agencies also use Leave No Trace as a means of helping visitors to public lands enjoy their experience to the fullest, but in ways that protect the areas where they travel and camp.

Sometimes these Leave No Trace principles require changes in the ways a Scout troop is used to doing things. Scouts may need to begin using backpacking stoves rather than campfires, for example, or get used to limiting the sizes of groups headed out on wilderness treks.

However, the rewards of leaving no trace are well worth learning new skills. The future of unspoiled territory depends in large part on how responsibly Scouts today conduct themselves.

## **The Principles of Leave No Trace**

### **1. Plan Ahead and Prepare.**

- In advance, obtain information concerning geography and weather, and plan accordingly.
- Keep group size within allowed limits.
- Allow enough time to reach your destination.
- Go to areas appropriate for your activities and skill level.

### **2. Travel and Camp on Durable Surfaces.**

- In high-use areas, stay on the trails and use existing campsites whenever possible.
- In areas less traveled, spread out to avoid creating new trails, and disperse camping activities.
- Avoid cutting across switchbacks.
- Select hard ground, snow, or durable vegetation for cross-country travel.





### 3. Dispose of Waste Properly (Pack It In, Pack It Out).

- Pack out all trash. (Careful planning helps minimize packing out food scraps and garbage.)
- Use biodegradable soap at least 200 feet or more away from any water source.
- Strain food particles before properly disposing of dishwater (at least 200 feet from all water sources).
- Dig catholes 6 to 8 inches deep in humus and 200 feet from water, trails, and campsites, and latrines 75 steps or more away from camps, trails, and any sources of water.
- Before leaving the campsite, bury catholes and latrines and restore ground cover.



### 4. Leave What You Find.

- Choose sites that are free of fragile plants.
- Do not pick plants or disturb natural settings, animals, and archaeological artifacts. Enjoy them where they are. (It may be illegal to remove or disturb wildlife and artifacts.)
- Minimize site alterations. Do not dig trenches or build temporary shelters other than tents and dining flies. Do not hammer nails into trees, hack at trees with woods tools, or damage bark and roots by tying horses to trees for long periods.
- Replace rocks, twigs, and other natural objects that you cleared from the campsite. Leave the area clean.
- Remember that good campsites are found, not made.





## 5. Minimize Campfire Impacts.

- Build fires only when appropriate. Otherwise, cook on lightweight camping stoves—especially where wood is scarce.
- Use existing campfire rings rather than making new ones.
- Burn small wood gathered from the ground, and burn all wood to ash whenever possible.
- Make sure your fire is dead out and the fire ring is left clean.
- Replace any sod or ground cover removed from fire sites.



## 6. Respect Wildlife.

- Avoid quick movements and loud noises, which disturb wildlife.
- Observe wildlife from afar, and give animals a wide berth—especially during breeding, nesting, and birthing seasons.
- Store food securely, and use bear bags and boxes to keep from attracting unwanted wildlife.
- Never feed wildlife. Help keep wildlife wild. You are too close if an animal alters its normal activities.



## 7. Be Considerate of Other Visitors.

- Camp away from other groups to give them a sense of solitude.
- Camp quietly, and leave radios, tape players, and pets at home.
- Respect the privacy of other campers.
- Wear clothing with colors that blend with the environment.

# The Outdoor Code

The Outdoor Code of the Boy Scouts of America reminds Scouts that they have an important role to play in caring for the environment. The code's ideals have special meaning whenever you are camping, hiking, or taking part in any outdoor event.

## Outdoor Code

*As an American, I will do my best to—  
Be clean in my outdoor manners,  
Be careful with fire,  
Be considerate in the outdoors, and  
Be conservation-minded.*

## Where to Camp

With Leave No Trace principles and the Outdoor Code in mind, consider where you want to camp. Your choice of a destination depends upon what you want to do and see, how much time you have, and the kind of camping that appeals to you. Most Scout camping takes place in the *frontcountry* or the *backcountry*.

### Frontcountry Camping

*Frontcountry sites* are those that can easily be reached by automobile, public transit, or bicycle. Frontcountry camping locations include readily accessible campgrounds in national, state, and local parks and forests; property owned by the Boy Scouts of America; and, with permission, many



**Concentrate camp activity in high-use areas such as this frontcountry campsite.**

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"During the summer camp the Scout each day finds his muscles becoming harder (and) the fresh air invigorating him more and more. All the time he is having fun, yet at the same time he is also learning many valuable lessons."

—Bruce Grant,  
*The Boy Scout Encyclopedia*;  
Rand McNally, 1952

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private lands. Developed campgrounds may have designated tent sites and fireplaces, public rest rooms, and sources of purified water.

Because these sites are usually near roads, Scouts taking part in frontcountry camping can often carry more gear and provisions than they might on trips that require backpacking. Meals can include fresh ingredients and involve more elaborate preparation, such as baking in Dutch ovens.

Frontcountry camping is ideal for Scouts learning the basics of living out-of-doors. With several frontcountry campouts under their belts, they will have a much better idea of what to carry when they travel farther from the road, and how to manage camps at more remote destinations.

## **BSA SUMMER CAMP**

A highlight of the year for many Scout troops is a week at a BSA summer camp. It is rare for a Scout to come home without having gained more knowledge about living in the out-of-doors and great enthusiasm for doing more of it as soon as possible.

## **Backcountry Camping**

The nature of a camping trip changes dramatically when you leave the road behind and venture into the *backcountry*. Everything you need for a night or more must

be carried in a pack on your back, stowed in duffels tied into a canoe, or loaded onto a horse, burro, or mule. As you leave civilization behind, a great world of possibilities and responsibilities opens before you.

**In more remote, backcountry areas, spread out and move camp daily to avoid creating permanent-looking campsites.**



Backcountry camping can take you to places that few people ever reach. You can spend time near remote lakes, in deep forests, and in desert terrain. Best of all, you can rely on your own skill and determination to make the most of living for a while beyond the usual bounds of civilization.

### **BSA HIGH-ADVENTURE BASES**

BSA high-adventure bases feature backcountry camping adventures. Designed for older Boy Scouts, Varsity Scouts, and Venturers, each high-adventure base of the BSA's National Council offers the training, equipment, and support you need to set out on wilderness treks that will challenge your skills, strength, and willpower.

Scouts at Philmont Scout Ranch can embark on backpacking treks into the high country of northern New Mexico. Expeditions from the bases of the Northern Tier National High Adventure Program paddle canoes along the lakes and rivers of the Boundary Waters of northern Minnesota and southern Ontario and Manitoba in Canada. Headquartered in the Florida Keys, the Florida National High Adventure Sea Base is the starting point for ocean-going expeditions that include camping on the islands and distant coastlines of the Keys and the Bahamas.

Many BSA local councils have their own high-adventure bases. Among the activities they may offer older Scouts are backpacking, camping, rock climbing, canoeing, river rafting, and a host of others.

### **Trip Plan**

Prepare a written *trip plan* before every camping experience. Well before your departure, share the plan with your Scout leaders and parents or guardian. They may have suggestions that will make your time in the outdoors even better. They will also know where you will be, and can provide support if it is needed.

Include the following information in your trip plan.

- Where you are going
- From where and when you will depart
- How you will reach the camp
- What you will be doing
- Who is going along
- When you will return
- When and how you will obtain permits or permission required by property owners or land management agencies of the places where you wish to travel and camp
- A brief emergency response plan that includes:
  - The location and telephone number of the clinic or hospital closest to your camp and route of travel
  - The phone number of the local emergency response authority (in most areas, 911)
  - The name of the person in your group who will take charge in an emergency

Scout troops and patrols sometimes attach gear lists, menus, and duty rosters to their trip plans. With all the paperwork together, patrol leaders can more easily assign to various Scouts the tasks of gathering equipment, shopping for food, and taking care of the other details of preparing for a camping trip.



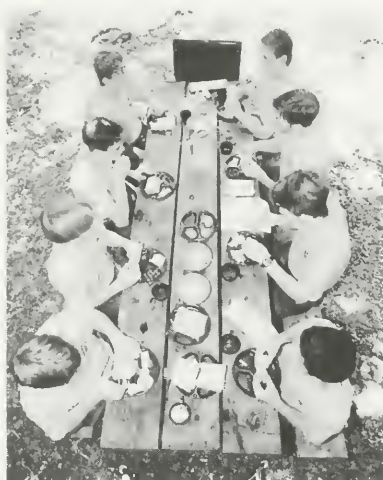
## Menus

Camping builds big appetites. With planning and practice, you can match that hunger with mouth-watering meals sure to keep you and your crew going strong all day.

When the key activities of an adventure take place away from your campsite—rappelling, for example, or conservation projects, canoeing, or wildlife photography—you might want to make meal preparation quick and easy so that you can get back to the action as soon as possible. On more leisurely campouts, cooking can take center stage. In stormy weather there's no better way to pass the time than firing up the camp stove and fixing something good to eat.

Keep these suggestions in mind as you plan meals for a camping trip.

- Select foods that will not spoil. In the frontcountry, you may be able to bring fresh fruits and vegetables, and keep meat and dairy products safe in a cooler with ice. For backcountry treks, depend more upon grains, pastas, and dehydrated or dried ingredients.
- When you camp in the frontcountry or travel by watercraft or with pack animals, the weight of your food may not be a critical factor. Besides taking items that are fresh or canned, you might be able to include additional cooking gear, too—a Dutch oven for stews and baking desserts, for example, or a griddle for a big breakfast of flapjacks, bacon, and eggs.



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"We carried coffee, sugar, pork, and beef from home, and ate potatoes three times a day. We had a delightful time, and came home fattened up somewhat; but I will admit that I did not call for potatoes when I got back to my father's table, for some days."

—John M. Gould,  
*How to Camp*  
*Out*, 1877

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Scouts who enjoy outdoor cooking will always have a good time in camp.

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- Trim the weight of your backpack by eliminating water from your provisions. Grains, pastas, cereals, and dried or dehydrated fruits, vegetables, soup mixes, and sauces provide plenty of punch per pound.
- Repackage foods in resealable plastic bags to reduce clutter and weight. On a piece of tape attached to each bag, write the contents of the bag and the meal for which it will be used.

## Duty Roster

Cooperation keeps a camp running smoothly. So does having one or two people in charge of each essential activity. A *duty roster* lists the work that needs to be done and assigns tasks to each member of a group. During long-term camping, Scouts can change jobs each day after lunch. For an overnight outing, each Scout can perform one duty, then take on a different responsibility for the next campout.

A typical duty roster might break camp tasks into these jobs:

- **Water and stoves.** Maintain the water supply for cooking and cleanup. Establish a safe place for stoves to be fueled and used, and have them ready to light before the cooks need them.
- **Cooking.** Assemble ingredients and follow recipes to prepare and serve meals. Have wash water heating on the stove before serving meals.
- **Cleanup.** Set out wash and rinse water, oversee the washing of group cooking gear, stow pots and utensils, and dispose of garbage. (For more on washing dishes in camp, see the *Boy Scout Handbook*.)
- **Food storage.** Maintain a bear line or other food storage system to protect provisions from animals and weather. Secure all food items at night and whenever camp will be left unattended.

## Sample Duty Roster

	Water & Stoves	Cooking	Cleanup	Food Storage
Friday	Joe & Dave	J. D. & Mike	Julio & Jim	Don & Luis
Saturday	Don & Luis	Joe & Dave	J. D. & Mike	Julio & Jim
Sunday	Julio & Jim	Don & Luis	Joe & Dave	J. D. & Mike
Monday	J. D. & Mike	Julio & Jim	Don & Luis	Joe & Dave

Many groups also develop a list of assignments to be completed before a camping trip begins. Jobs may include:

- Assembling crew equipment
- Developing menus, shopping for food, and repackaging provisions
- Getting maps and planning routes
- Securing permits or other forms of permission



# Gearing Up

Each outdoor adventure is different from every other, and the equipment you take may change from one camping trip to the next. For times when you want to travel light and move quickly through the backcountry, pack exactly what is required for safety and comfort, but not an ounce more. On other campouts, especially those requiring little or no foot travel to reach the site, you may want to add extras to enhance the pleasure of your time in the out-of-doors.

## Personal Gear

Use the following checklists as reminders of the gear and clothing you and your group may want to pack for a camping trip. Beyond the Scout Outdoor Essentials, you might not need every item every time. By considering everything on each list, though, you can decide whether something will be useful, and you will be less likely to forget what could turn out to be an important piece of clothing or equipment for the trip you are about to begin.



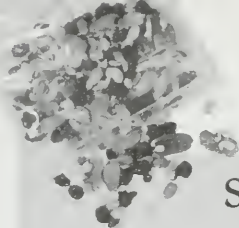
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"Be plain in the woods. . . . It is one of the blessings of wilderness life that it shows us how few things we need in order to be perfectly happy."

—Horace Kephart,

*The Book of  
Camping and  
Woodcraft*; Outing  
Publishing, 1906

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## Scout Outdoor Essentials

The Scout Outdoor Essentials go with you on every camping trip. They form the foundation of equipment and nourishment that can help you through tough times and make good experiences even better.

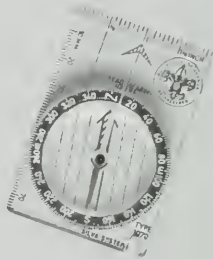
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|---|--|
| <input type="checkbox"/> Pocketknife    | <input type="checkbox"/> Flashlight                |
| <input type="checkbox"/> First-aid kit  | <input type="checkbox"/> Trail food                |
| <input type="checkbox"/> Extra clothing | <input type="checkbox"/> Matches and fire starters |
| <input type="checkbox"/> Rain gear      | <input type="checkbox"/> Sun protection            |
| <input type="checkbox"/> Water bottle   | <input type="checkbox"/> Map and compass           |

## Personal Gear Checklist

- |  |  |
|--|--|
| <input type="checkbox"/> Backpack                              | <input type="checkbox"/> Cleanup kit containing: |
| <input type="checkbox"/> Sleeping bag or two to three blankets | <input type="checkbox"/> Soap                    |
| <input type="checkbox"/> Sleeping pad                          | <input type="checkbox"/> Toothbrush              |
| <input type="checkbox"/> Ground cloth                          | <input type="checkbox"/> Toothpaste              |
| <input type="checkbox"/> Eating kit containing:                | <input type="checkbox"/> Dental floss            |
| <input type="checkbox"/> Spoon                                 | <input type="checkbox"/> Comb                    |
| <input type="checkbox"/> Plate                                 | <input type="checkbox"/> Washcloth               |
| <input type="checkbox"/> Bowl                                  | <input type="checkbox"/> Towel                   |
| <input type="checkbox"/> Cup                                   |  |

Personal extras you may want to take:

- |  |   |
|--|---|
| <input type="checkbox"/> Watch           | <input type="checkbox"/> Small musical instrument |
| <input type="checkbox"/> Camera and film | <input type="checkbox"/> Swimsuit                 |
| <input type="checkbox"/> Notebook        | <input type="checkbox"/> Work gloves              |
| <input type="checkbox"/> Pencil or pen   | <input type="checkbox"/> Pack rain cover          |
| <input type="checkbox"/> Sunglasses      |   |





## Footwear for Camping

Almost any durable shoes will do for a frontcountry camping trip. When your plans include walking to a backcountry campsite with all your food and gear in your pack, hiking boots can give your feet and ankles protection and support.

## Clothing Checklist

Dress for the outdoors by wearing *layers* so that you can adjust your clothing to meet changing weather conditions. If you are becoming chilled, pull on a sweater and a parka, a stocking hat, and gloves. If you are too warm, shed a layer or two. Over the course of a day outdoors, you may shift your clothing many times to maintain comfort.

### CLOTHING FOR WARM-WEATHER CAMPING

- |   |  |
|---|--|
| <input type="checkbox"/> Scout shirt                  | <input type="checkbox"/> Socks                     |
| <input type="checkbox"/> T-shirt                      | <input type="checkbox"/> Hat with a brim for shade |
| <input type="checkbox"/> Hiking shorts                | <input type="checkbox"/> Bandanna                  |
| <input type="checkbox"/> Long pants                   | <input type="checkbox"/> Waterproof rain gear      |
| <input type="checkbox"/> Sweater or warm jacket*      | (pants and jacket)                                 |
| <input type="checkbox"/> Sturdy shoes or hiking boots |  |

### CLOTHING FOR COLD-WEATHER CAMPING

- |   |   |
|---|---|
| <input type="checkbox"/> Long-sleeved shirt           | <input type="checkbox"/> Insulated parka or coat with hood                |
| <input type="checkbox"/> Warm shirt*                  | <input type="checkbox"/> Stocking hat*                                    |
| <input type="checkbox"/> Long pants*                  | <input type="checkbox"/> Mittens*   |
| <input type="checkbox"/> Sweater*                     | <input type="checkbox"/> Rain gear (poncho or parka, rain pants, gaiters) |
| <input type="checkbox"/> Long underwear*              |   |
| <input type="checkbox"/> Hiking boots or sturdy shoes |   |
| <input type="checkbox"/> Socks                        |   |

\*These items should be made of wool or a warm synthetic fabric.

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"A man can stand almost any hardship by day, and be none the worse for it, provided he gets a comfortable night's rest; but without sound sleep he will soon go to pieces, no matter how gritty he may be."

—Horace Kephart,

*The Book of*

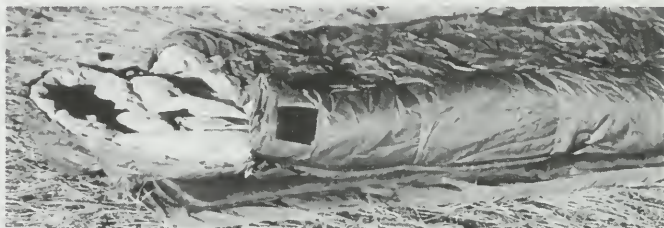
*Camping and*

*Woodcraft; Outing*

Publishing, 1906

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In addition to boots for hiking, you might want to carry a pair of running shoes or other comfortable, lightweight shoes to wear around camp. Any shoes or boots you use for camping must fit well. Your heels should not slip much when you walk, and your toes should have a little wiggle room.



## Sleeping Bag

On clear summer nights, a ground bed made up with a blanket or two may provide all the warmth you need. For most camping, though, a sleeping bag is the way to go.

The outer fabric of a sleeping bag is called the *shell*. Usually made of nylon, it can shield you from gusts of wind and may be treated by the manufacturer to repel dew and light mist.

Contained within the shell is an insulating *fill material* that traps your body warmth and holds it close to you. Thin fabric walls called *baffles* are sewn into the shell to keep the fill material spaced evenly throughout the bag.

The warmest fill material per ounce is *goose down*—the fluffy underfeathers of waterfowl. Explorers, mountaineers, and campers through the decades have relied on down when they expected to sleep out in the cold. Down bags are expensive, cannot keep you warm when they are wet, and are difficult to dry in camp unless the sun comes out. With all of that in mind, it's still a fact that down bags are good when campers are going as lightly as possible and have the experience to keep their bags dry.

*Synthetic fill* can be almost as light as goose down, but it is seldom as costly. Its greatest advantage is that it can keep you warm even when your sleeping bag gets wet. You will, of course, be much more comfortable in a dry synthetic-fill bag than in a wet one, so don't be careless with it in stormy weather.

The useful life of any sleeping bag can be extended if you remove it from its stuff sack between trips. Store it by hanging it in a closet or by placing it loosely in a large cotton laundry bag. That will prevent the fill material from being overly compressed, and circulating air will help keep the bag fresh.

## Sleeping Bag Temperature Ratings and Layering

Many outdoor equipment manufacturers give their sleeping bags *temperature ratings*, suggesting that a bag is appropriate for use down to a certain thermometer reading. While a +30 degree bag will certainly not keep you as warm as one rated at -10 degrees, a temperature rating provides only a general idea of a bag's warmth.

The layering principles that apply to clothing can be used to adjust the warmth of a bag. If your bag is not insulating you well enough, pull on wool socks, long underwear, a stocking hat, and even a jacket and mittens. If you become too hot, remove a layer or two.

### Sleeping Pad

Increase your comfort at night with a *sleeping pad*. Made of foam, a pad will give you a soft surface on which to lie, and will prevent the cold earth beneath you from drawing away your body heat. Foam pads are often lighter and more durable than air mattresses, and insulate better.

## Ground Cloth

Keep moisture away from your bedding with a *ground cloth*—a plastic sheet cut to the size of your sleeping bag or tent floor. Tuck the edges of the ground cloth beneath the floor of your tent so that rainwater will not collect on the cloth and run under the tent.

## Pack

In the early days of Scouting, packs were not very comfortable. Most of them were little more than canvas bags with straps attached. Among the most popular was the *Nessmuk*. The *Trapper Nelson* pack was attached to a wood and canvas frame. (Both of these packs were named for well-known outdoorsmen of the time.) Loads could also be lashed onto *packboards*, a technique borrowed from Native Americans. As with most early packs, though, all the weight hung from a camper's shoulders.

After World War II, backpackers who had mastered the art of shaping aluminum while working in aircraft factories used their skills to fashion strong, lightweight *pack frames*. The new frames shared much in common with the old packboards, but with a big difference—they included hip belts to transfer a portion of the pack weight off the shoulders and onto the hips and legs. For the next 30 years, backpacks featuring these *external frames* were the packs of choice for most campers and backpackers.

Yet another design revolution has occurred in recent years with the development of packs with *internal frames*. These packs have hip belts for transferring pack weight to the legs and hips, but instead of a large frame on the outside, internal-frame packs feature rigid stays sewn inside. Adjustment straps allow campers to shift the way a load rides on the shoulders, hips, and backs.

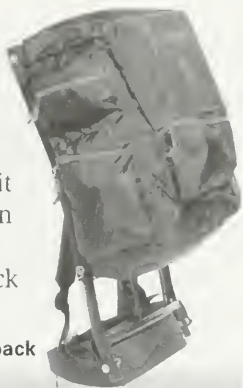
Many people feel that packs with internal frames fit better against their backs. Streamlined, compact shapes make these packs good for use while skiing, climbing, and traveling cross-country. They fit more easily into canoes than do packs with external frames.

Internal-frame pack



External-frame packs also have strong defenders, particularly among Scouts who prefer them for back-packing along open trails or for carrying heavy loads.

When shopping for a new backpack, ask the store clerk to load it with 20 to 30 pounds of weight. Swing it onto your shoulders, adjust it for a comfortable fit, then carry it around the store for a while to get a feel for it. That will help you know when you have found the pack that is right for you.



External-frame pack

## Patrol or Crew Camping Gear

- ☐ Tents with poles, stakes, ground cloths, and lines
  - ☐ Dining fly
  - ☐ Cook kit containing:
    - ☐ Pots and pans
    - ☐ Spatula, large spoon, and/or ladle, depending on menus
    - ☐ Hot-pot tongs
  - ☐ Cleanup kit containing:
    - ☐ Biodegradable soap
    - ☐ Sanitizing rinse agent (bleach)
    - ☐ Scouring pads (no-soap type)
  - ☐ Repair kit containing:
    - ☐ Thread
    - ☐ Needles
  - ☐ Nylon cord—50 feet
  - ☐ Backpacking stoves and fuel
  - ☐ Plastic sheets (two), 4 feet by 4 feet
  - ☐ Matches and/or butane lighters in waterproof containers
  - ☐ Trash-can liners
  - ☐ Toilet paper in plastic bag
  - ☐ Safety pins
- Group extras you might want to take:
- ☐ Water container—1 gallon or 2½-gallon collapsible
  - ☐ Grill
  - ☐ Patrol flag
  - ☐ Small U.S. flag

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## Tents

“The putting up of a lean-to tent on an ant hill, at a hornets’ nest, (or) at a wild bees’ hive are mentionable errors in observation and judgement.”

—Raymond S. Spears,  
*Helpful Hints for  
Hikers*; Haldeman-  
Julius Company, 1924

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Leaving in the spring of 1803, the Lewis and Clark Expedition spent nearly three years traveling from St. Louis to the Pacific Ocean and back. On clear nights they often slept out under the stars. In foul weather they fashioned lean-tos from branches and bundles of prairie grass, or rigged up shelters using sheets of canvas that, by day, doubled as sails.

More than a century later, many a Boy Scout unrolled his blankets in an Army surplus pup tent hung over a rope strung between two trees. Early Scouts also pitched Forester tents with open fronts. For long-term summer camps, they often used wall tents. All of these tents were made of thick canvas, were heavy and bulky to carry, and tended to leak when it rained.

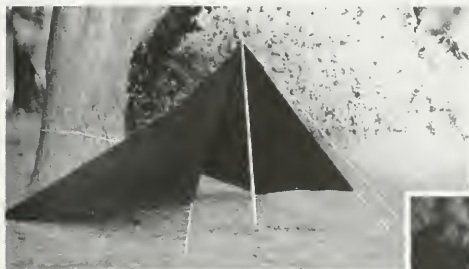
Among the most popular BSA tents in Scouting’s middle years was the Overnighter. Sewn from lightweight, pale green canvas, the Overnighter could be used for backpacking as well as for frontcountry camping. It had a single pole and sloped steeply toward the rear. Because it had no floor, Scouts took care to pitch it where rainwater would drain away from the tent rather than flow through it.

The development of synthetic fabrics has opened a new era of possibilities for tent designers. Nylon and breathable fabrics lend themselves to roomy shelters that pack small and weigh little. Flexible poles made of aluminum or fiberglass make possible geometric tent shapes that stand up to tremendous amounts of wind, rain, and snow. A ground cloth underneath the tent floor protects it from abrasion and provides an added barrier to moisture.

Modern tents are often rated as *three-season* (appropriate for spring, summer, and autumn use) or *four-season* (reliable in any conditions, including winter camping). Four-season tents may have additional poles and more durable fabric, thus making them sturdier but heavier.



Most tents used by Scouts today have a *tent body* made of breathable nylon. The tent body is shielded from rain, snow, and wind by a waterproof *rain fly*. Moisture created by people breathing inside the tent passes through the tent body, keeping the interior dry and comfortable.



**Tarp**



**A-frame tent**



**Dome tent**



**Hybrid tent**



**Wall tent**



## Common Tent Shapes

### TARPS

The simplest of all tents, a tarp can be pitched in many ways—as a lean-to, for instance, or a pyramid, or a pup tent. The advantages of a tarp are its light weight and versatility. However, it has no floor, offers little protection against insects, and must be pitched well in order to protect campers from rain. Tarps are often used as dining flies to shelter group cook sites.

### A-FRAMES

Seen from the front, this tent is shaped like the letter A; thus its name. Most A-frame tents are equipped with mosquito netting, a rain fly, and a waterproof floor.

## The First A-Frame Tent

Credit for devising the A-frame backcountry tent goes to an English mountaineer named Edward Whymper. He built the tent for an 1862 climb of a mountain called the Matterhorn on the border between Italy and Switzerland. Whymper's tent had four thick wooden poles, each with an iron spike on one end to dig into earth or snow. Pairs of poles were fastened together with cast-iron stove bolts.

The tent body was made of heavy calico cloth and featured a sewn-in floor. In all, the tent, poles, and rain fly weighed 23 pounds—an enormous amount by today's standards. It was so rugged, though, that many mountain campers—including those on the first expeditions to Mount Everest—relied on tents made according to Whymper's design.

### DOMES

Tents with a dome shape can be spacious with lots of headroom. The arrangement of poles bending over the tent body gives a dome plenty of stability, even in strong winds. Domes are often *freestanding*—requiring no tent stakes. Since dome tents are usually larger than A-frames, they can also weigh more.

## HYBRIDS

Mix geometry, modern materials, and the imaginations of tent makers, and you get an astounding variety of shapes. Among the most interesting are *hybrid tents* that combine features of A-frames and domes. Some look like rounded A-frames, tunnels, or domes cut in half. Doors may be at the ends, or sewn into one or both sides. Many include a *vestibule*—a porch-like extension of the rain fly that provides shelter outside the tent body for storing packs, crew gear, and muddy boots.

## BREATHABLES

Lots of rain gear today is made of fabric that protects you from precipitation and, at the same time, allows moisture given off by your body to escape. The same material is sometimes used to make tents. Because they do not need a rain fly, these single-wall *breathable* tents are light in weight, yet strong enough to stand up to use in harsh conditions. On the other hand, they are usually small, can be clammy in warm weather, and may be very expensive.

## WALL TENTS

For long-term, frontcountry outings such as a week at a BSA council camp, your group may use *wall tents*. Large enough for several Scouts to unroll their sleeping bags on the floor or on cots, modern wall tents are constructed of canvas, a polyester-cotton blend, or nylon. A ridgepole running between two upright poles holds the tent erect. Windows or the side walls of many large tents can be opened up in hot weather to allow interior ventilation. Most wall tents are too heavy and cumbersome for use on backcountry campouts.

## No Fires in Tents

Keep *all* flames away from tents. Never use candles, matches, stoves, heaters, or lanterns in or near tents. No tent is fireproof. All of them can burn or melt when exposed to heat. ***Use flashlights only!***

## Tent Care

- Take off your boots before crawling into a tent. Stocking feet are kinder to tent floors, and you won't track in mud. Store your boots by the tent door, under the shelter of the rain fly.
- The stitched seams in the rain flies of new tents may need to be sealed to prevent moisture from leaking through. Manufacturers usually include *seam sealer* with new tents, and instructions for applying it.
- Tent fabric can be harmed by too much exposure to sunlight. Of course, your tent may be set up in a sunny place for a day or two during a campout, but try to avoid leaving it pitched in the open when it is not in use or when you can put it in a shaded campsite instead.
- Clean out your tent by sweeping it or by tipping it up and shaking out litter and debris.
- To stow a tent in a storage sack, first place the bundle of collapsed poles in the tent's stuff sack. Next, push a corner of the tent all the way to the bottom of the sack. Continue stuffing the fabric alongside the poles.
- A tent that seems dry in camp may have absorbed dew or ground moisture. For that reason, it is important that you always unpack your tent when you get home and set it up, hang it over a clothesline, or suspend it from nails in the rafters of a shed or basement. Allow it to dry completely before storing it.

## Stoves

For much of Scouting's history, no campout was complete without a wood fire. Scouts prided themselves on their ability to kindle a blaze in any conditions, even in a rain-storm. They used fires to cook their meals and, in the evenings, as the center of a camp's activities.

There are times when a campfire is still appropriate, and there are campsites where open fires will do little or no harm. However, Scouts today are wiser in knowing when not to build a fire. They understand that fires can leave scars on the land, blackening stones and sterilizing soil. Lighting campfires in heavily used campsites can mar surrounding forests as people gather up every stick of dead wood and break off tree branches for fuel.

Instead, most Scout campers now use stoves for cooking. With them, Scouts have discovered they can camp where there is little firewood or none at all. With camp stoves, they can make themselves comfortable in nearly every sort of weather and on almost any terrain.



**Camp stoves make outdoor cooking more convenient and help Leave No Trace.**

## BSA Stove Use Safety Guidelines

Stoves burning different fuels operate in different ways. Read the manufacturer's instructions carefully and follow them exactly. In addition, *always* heed these stove safety rules.

- Use camping stoves only where allowed and only with adult supervision.
- Never use a stove inside a tent or cabin. There is a danger of fire and of poisoning by odorless gas fumes.
- Before lighting the burner, tighten the caps on the stove and on any fuel containers. Do not loosen the fuel cap of a hot stove.
- Stoves sometimes flare up. Keep your head and hands to one side of a stove as you light and adjust it.
- Don't overload a stove with a heavy pot. Instead, set up a grill over the stove to bear the weight of any pot with a capacity greater than two quarts.

## Selecting a Stove

The stove you choose depends upon the kind of cooking you will do, the type of fuel you wish to use, and the amount of weight you are willing to carry. The most common stove choices are cartridge/canister stoves and liquid fuel stoves.

### CARTRIDGE/CANISTER STOVES

The easiest camping stoves to use are those that attach to fuel cartridges or canisters. *Cartridges* typically contain butane or a mixture of butane and propane, two clean-burning gases. Click or screw the stove onto a cartridge and the unit is ready to provide on-demand heat—simply turn a knob to start the flow of fuel, and then light the burner. Cartridges can be purchased at camping stores in sizes ranging from 6 ounces (enough for a meal or two) up to about a pound (enough for a camping trip of a night or two). Cartridges cannot be refilled; empty ones must be packed out of the backcountry for proper disposal.



*Canister* is the name given to a small fuel container holding only propane. One-burner propane stoves are designed to screw onto a canister in much the same way that butane burners are attached to cartridges. Canisters can also be connected to two-burner stoves by means of a metal tube or rubber hose with a screw-on fitting. The smallest canisters weigh a pound and hold enough fuel for one or two days of camp cooking. Larger propane tanks—those with capacities up to 18 pounds of fuel—are useful when Scouts are camping for a week or more in a frontcountry site. While 1-pound canisters are disposable, larger propane tanks can be refilled and used again.

In addition to the safety procedures that apply to any stove, keep in mind the following guidelines when using propane or a butane/propane mix.

- Protect fittings and attachment points on stoves, cartridges, and canisters from becoming damaged or dirty.

- The fuel hoses that connect to larger propane tanks are threaded the opposite way from most screw-on attachments, and are made of relatively soft metal. Do not force or overtighten fittings.

## LIQUID FUEL STOVES

A stove that burns liquid fuel may have a fuel tank built into the body of the unit, or it can be attached with a special hose to a metal fuel bottle. Almost all liquid fuel stoves sold today include a pump to pressurize the fuel tank and force fuel into the burner where it can be lit. After the stove has operated for a few minutes, heat from the burner will keep a steady stream of vaporized fuel feeding the flame. The pump also makes liquid fuel stoves a good choice for cold-weather camping when butane/propane stoves can become quite balky.

In the United States, the fuel burned in most liquid fuel stoves is *white gas*—a petroleum product refined especially for use in stoves and lanterns. More common in foreign lands are *kerosene* camp stoves. *Multifuel stoves*, popular with world travelers, can handle almost any fuel that flows, including diesel, kerosene, aviation fuel, and automobile gas.

Store liquid fuels in metal bottles made especially for that purpose. Use bright red containers or mark them with colorful tape so there is no chance of mistaking them for water bottles. Carry fuel bottles, cartridges, and canisters in the outside pockets of your pack where gas fumes cannot contaminate your food.

When you are ready to cook, place your stove on a stable, level surface free of leaves, sticks, or other burnable material. During winter campouts, that might be a piece of plywood about 6 inches square. The plywood will hold your stove above the snow and prevent cold ground from chilling the stove.



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When selecting the fuel for a particular stove, *always* follow the manufacturer's guidelines.

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## Two-Burner Stoves

Scouts enjoying frontcountry camps, especially those lasting more than a night or two, may find that two-burner stoves make meal preparation easier than relying on smaller backpacking stoves. Some models burn propane, while others are fueled with white gas. Most have a windscreen and are fitted with a grill to support pots, pans, and camp ovens.

## Cook Kits and Utensils

As you plan the meals for a campout, make a list of the pots and pans you will need for preparing each dish. Your list might include a frying pan and pots of various sizes, each with a lid to hold in heat and keep out insects and dust. Your troop may have its own Boy Scout cook kits. If not, check garage sales and secondhand stores for good buys on used pots and pans. Complete the kit with a pair of hot-pot tongs for lifting pots and pans from the stove without burning your fingers.

A few utensils will help you turn out tasty meals with ease. Depending on your menus, consider taking a spatula, ladle, stirring spoon, vegetable peeler, and can opener.

To carry cooking gear, divide the items among the members of your group. Save space by stuffing the pots with spare clothing or food packets before you put them into your packs. Carry large pots by slipping them over the ends of sleeping bags strapped to external-frame packs.



Cook kits may vary, depending on the type of camping your troop or patrol has planned.



## Plastic Sheets

A couple of plastic sheets about 4 feet square can serve as clean surfaces for food preparation and equipment storage.

## Water Containers

Besides individual water bottles, you may find it convenient to have a few collapsible plastic water containers for use in camp. Common container sizes are 1 gallon and 2½ gallons.

## Cleanup Materials

Dishwashing is easier if you have the right supplies. Several (soapless) scouring pads, a rinse agent, and a little biodegradable soap will take care of most of your needs. A convenient way to stow pots, pans, and personal eating gear is by placing items, as soon as they are washed, in a small fishnet hammock strung between two trees, or in a mesh bag tied to a branch.



## Trash Bags

Large plastic trash-can liners come in handy as storage sacks, as emergency ponchos and pack covers, and for suspending food on bear lines. They can also be used for carrying trash home at the end of a trip.

## Stuff Sacks

Use stuff sacks to organize your gear, guard it against the elements, and keep it together in your pack and at camp. Put clothing in one or two sacks, cooking utensils in another, and so on. Nylon stuff sacks in various sizes can be purchased at camp supply stores. One-gallon resealable plastic bags work well, too.

## Pack Your Pack

You've planned a campout and gathered your food and gear. Load everything into your pack and there should be little left to do except head out the door and let the adventure begin.

Besides your own gear, you may carry some group equipment. Your share might include several pots, part of a tent, a camp stove, and some food. Arrange soft items in your pack so they will cushion your back. Keep your rain gear, flashlight, first-aid kit, water bottle, and hike food near the top of your pack or in its outside pockets where you can reach them easily.



If there is room, stow your sleeping bag inside your pack. Otherwise, cover it with a ground cloth or a plastic trash-can liner to protect it from the elements. Tuck it under the pack's top flap, or strap it to the external frame. (Some Scouts put a trash-can liner inside a stuff sack first, then stuff the sleeping bag into it. The resulting bundle is neat, waterproof, and easy to pack.)

With everything in place, try on your pack. Is it comfortable? Does it feel balanced? Are the straps and hip belt properly adjusted? Are any items on the outside of the pack secured so that they won't swing around or fall off as you hike? Make any changes now so that you can hit the trail with a pack that is balanced, neat, and easy to carry.



**Learn how to properly load a backpack for comfort, safety, and convenience.**



# Making Camp

While planning your camping trip, you should have developed a good idea of where you would spend each night. That will help you apply Leave No Trace principles so that the sites you choose are appropriate for a Scout group to use.

## Getting There

There are many ways you can travel to camp. Often you will hike in—perhaps a short distance, perhaps many miles. Your group may journey to a frontcountry camp by automobile, van, bus, or bicycle. Where lakes and streams abound, your mode of transport might be a canoe or a raft guided with oars.



**Along with fun, make safety a priority for getting to your campsite.**

# Getting to Camp Using Compass and Topographic Map

Reaching a frontcountry campground can be as simple as driving to a BSA facility or public recreation area. For backcountry camping, however, you may be backpacking, canoeing, or riding horses to cover the distance from the trailhead to an overnight site. Study a map ahead of time to get a feel for the terrain. Besides figuring out the best route to your destination, you may find points of interest along the way that you won't want to miss.

Even if the trail to a campsite is familiar to you, a camping trip is a good opportunity to get out a topographic map and a compass and practice taking bearings, identifying landmarks, and following a course.

## Selecting a Campsite

Much of the success of a campout depends upon the campsite you choose. A good site offers plenty to see and do. It is also easy on the land, allowing you to camp without leaving a trace.

Here are some pointers for deciding where to make camp.

### Environmental Impact

Protect the environment by using established campsites whenever you can, or by camping on durable surfaces that will not be harmed by your presence. Where they are allowed, build your fires in existing fire rings. Try not to put fresh marks on the land.





## **STEP LIGHTLY**

Careless campsite selection can harm the land in several ways. Tents will mat down vegetation and cut it off from water, air, and sunlight. Campers walking to and from cooking areas, water sources, and their tents can trample plant communities and form unwanted pathways. The weight of many footsteps in the same area will compact the soil, making it difficult for new plants to take root.

A trail is an example of a strip of soil which has become so compacted that nothing will grow in it. The same is true of many established campsites. We accept them because they concentrate human activities in limited areas, leaving the rest of the landscape untouched. It is important to do all you can to recognize and pass by places that may not withstand the impact of camping and hiking.

## **Safety**

Don't pitch your tents under dead trees or limbs that might fall in a storm. Stay out of gullies that could fill with flash floods. Find a site away from lone trees, mountaintops, high ridges, and other likely targets of lightning. Camp some distance from game trails, especially in bear country.

## **Size**

A site must be large enough for patrol members to pitch their tents and cook their meals. When hanging food to keep it away from animals, find the trees you need well away from where you will be sleeping—100 yards or more—where bears are common.





**Take no chances—all water taken from streams, rivers, or lakes must be purified or boiled before use.**

## **Water**

Your patrol will require water for drinking, cooking, and cleanup—several gallons a day for each Scout. Public water supplies are safest. Water taken from streams, rivers, or lakes must be purified before use. Camping in dry regions can be rewarding, although you may have to carry water to your site.

## **Terrain**

Does the site slope gently for good drainage? Leaves, pine needles, and other natural cover can keep the ground from becoming muddy. An area open to the east and south will catch sunlight early in the day and perhaps be drier than slopes facing north.

## **Stoves and Campfires**

Whenever possible, use a camp stove to heat your water and cook your food. Where fires are permitted, look for a site with an existing fire ring and a good supply of dead twigs and fallen branches. Where fires are not allowed, wood is scarce, or you don't want to spend much time preparing meals, use a camp stove.

## **Privacy**

Respect the privacy of others. Trees, bushes, and the shape of the terrain can screen your camp from trails and neighboring campsites. Keep the noise down when other campers are staying nearby.

## **Permission**

Check well ahead of time with land managers of public parks, forests, and reserves. They can issue any permits you will need, and may suggest how you can make the most of your campouts. Get permission from owners before camping on private property.

## Managing a Campsite

Once you arrive at a site, the first order of business is to figure out the best way to settle in while causing as little impact on the land as possible.

- Set up a dining fly first. That will provide shelter in case of rain, and also give a sense of where you will center most of your camp activities.
- Pitch your tents. Use established tent sites whenever possible. In bear country, pitch tents 100 yards or more from the cooking area and from where food will be hung.
- Establish a plan for personal sanitation and be sure everyone understands what he is to do.



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"A scout's honor will not permit him to disobey in the slightest particular the sanitary rules of his camp. He will do his part well. He will do everything in his power to make his camp clean, sanitary, and healthful from every standpoint."

—*Handbook for Boys*,  
first edition;  
Boy Scouts of  
America, 1911

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## Sanitation

Getting rid of human waste outdoors requires special care. In campgrounds that have rest rooms or outhouses, be sure to use them. Where those don't exist, dig a cathole or use a latrine. Always wash your hands with soap and water when you are done.

### Cathole

Find a private spot at least 200 feet (75 steps) from water, campsites, and trails. Dig a hole 6 to 8 inches deep with your heel, a stick, or a shovel. Organisms in the top layers of earth will break down human waste.

Fill the cathole with soil when you are done, and replace any ground cover. Push a stick into the earth to warn others against digging in the same spot.

### Latrine

A patrol, troop, or other large camping group may be able to lessen its impact on the land by digging a single latrine rather than making many catholes. Check with a ranger or other local expert for guidance.

With a shovel, dig a shallow trench a foot wide and 3 to 4 feet long. Remove and save any ground cover. As with a cathole, go no deeper than the topsoil so that waste will be buried in organic earth where it will turn into soil nutrients.

Sprinkle a layer of soil into the trench after each use to keep away flies and hold down odors. Return all the soil to the latrine when you break camp, and restore the ground cover.

## Toilet Paper

Put used toilet paper in a resealable plastic bag and carry it out of the backcountry with the rest of your trash. Otherwise, completely bury used toilet paper in a cathole or latrine. Don't burn it; small embers may spread into surrounding roots and ground cover.

## Cleaning Up After Meals

Whether you cook with a stove or over an open fire, put on a pot of water before you serve a meal. That way, you'll have hot dishwater by the time you finish eating.

Begin cleanup by setting out three pots:

- **Hot-water wash pot—**

Hot water with a few drops of biodegradable soap

- **Cold-water rinse pot—**

Cold water with a sanitizing tablet or a few drops of bleach to kill bacteria

- **Hot-water rinse pot—**Clear, hot water

Each Scout can wash his own eating gear. If everyone also does one pot, pan, or cooking utensil, the work will be finished in no time. Use hot-pot tongs to dip plates and spoons in the hot-rinse water. Lay clean utensils on a plastic ground sheet and let them air dry.

## Dealing With Leftovers

Carry food scraps home in a trash bag or burn them in a hot campfire by adding them to the flames a little at a time. You can burn waste paper, too, but don't put plastic bags into a fire; burning plastic can release toxic gases into the air.

Don't bury leftover food or scatter it in the woods. Animals will almost always find it, and it is not healthy for them to eat. Food scraps can also draw animals close to campsites where they may lose their fear of humans. That can be dangerous for them and for you.

Wash out jars and cans, and carry them home for recycling. Save space by cutting out the ends and then flattening cans.



**When everyone pitches in, cleanup doesn't take long.**

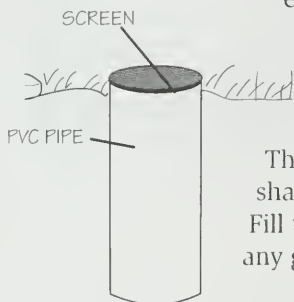
## Dishwater Disposal

During campouts lasting no more than a couple of days, strain any food bits out of your wash water and put them in your trash. Carry the wash and rinse water away from camp and at least 75 steps from any streams or lakes. Give it a good fling, spreading it over a wide area.

For longer stays at one site, dig a *sump hole* at the edge of camp and at least 75 steps from streams, lakes, or other open water. Make the hole about a foot across and 2 feet deep. Place a piece of window screen across it and pour wash and rinse water into the sump through the screen.

The screen will catch food particles so that you can shake them into a trash bag or a campfire.

Fill the sump hole when you break camp, and replace any ground cover.



## Collecting and Purifying Water

Drink at least 2 quarts of fluid each day, in cold weather as well as warm. That's about 8 cups—enough so that your urine remains clear. Bring the water from home or get it from public supplies. Water taken from springs, lakes, or streams must first be disinfected.



## Public Supplies

Water from faucets and drinking fountains in campgrounds and Scout camps has usually been tested by public health officials. It is almost always safe to use, or will have a sign saying if it's not.

## Open Water

Water taken from streams, lakes, and springs may contain bacteria and parasites too small for you to see. Disinfect any water that does not come from a tested source, using one of the following methods.

- **Boiling.** Bringing water to a rolling boil for a full minute or more will kill most organisms.
- **Purification tablets.** Water purification tablets are sold in small bottles just right for hikers and campers. The label usually instructs you to drop one or two tablets into a quart of water and then wait 30 minutes before drinking.

Purification tablets can lose their strength after a bottle has been opened. Find the date on the label and use only fresh tablets.

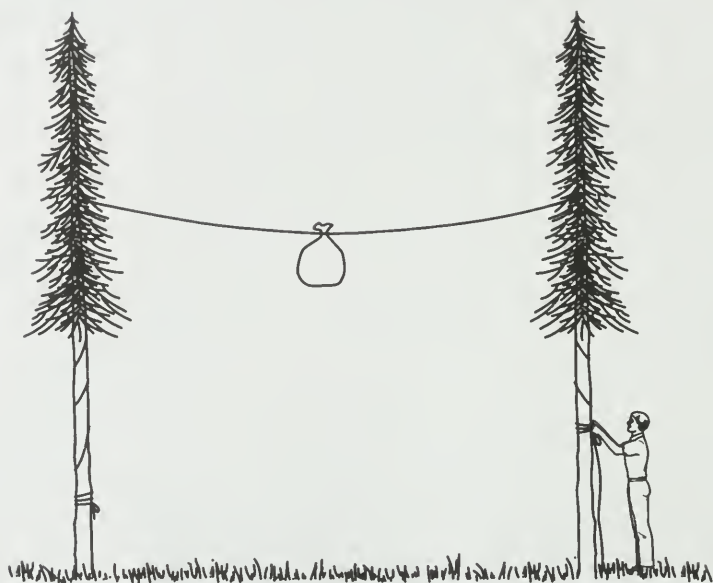
Tablets may leave a chemical taste in the water. After the tablets have had a full 30 minutes to do their work, you can improve the flavor by adding some drink mix.

- **Filters.** Camping stores and catalogs offer water purification filters that are effective and easy to use. Some operate by pumping water through pores small enough to strain out bacteria. Others contain chemicals or carbon. Follow the instructions that come with the filter you plan to use.



## Food Storage

Store your food where it will be safe from animals, insects, dust, and debris. Frontcountry campers may be able to use vehicles, coolers, or plastic buckets with tightly fitted lids as storage units. In the backcountry and anywhere that bears may be present, a bear line is often the answer. Not only will your food be secured, hanging anything with an aroma will give bears no reason to linger in your camp.



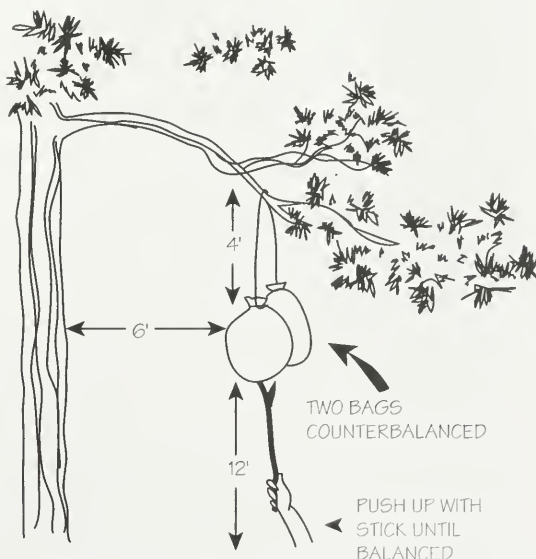
Here are three ways to suspend food and other “smellables.”

- Find a tree with a sturdy branch about 20 feet above the ground. Tie one end of a strong cord around a rock and toss it over the branch. Stash your provisions in a plastic trash bag or a burlap bear bag lined with a trash bag, and tie it to one end of the cord. Raise the bag until it is well out of the reach of standing bears, and tie the free end to a tree trunk.



- If there is not a good branch nearby, find two trees about 20 to 30 feet apart. Toss a line over a branch close to the trunk of one tree, then toss the other end of the line over a branch of the second tree. Tie your bear bag to the center of the line, and hoist it high between the two trees.
- Bears accustomed to raiding campsites may be smart enough to claw loose the tied end of a cord. To prevent that, divide your provisions equally between two bear bags. Raise one up to a high branch, as you would in the first bag-hanging method. Tie the free end of the cord to the second bag and lift it overhead. Use a stick or hiking staff to shove it out of reach of animals. The bags will counterbalance one another, and your food will be safe. To retrieve the bags, use a stick to push one bag even higher, causing the other to come down within your grasp.

Land managers of camping areas frequented by bears can give you further information about the best ways to store your food. Their suggestions may include using metal bear boxes located in the campgrounds. Where there are no boxes and no trees for hanging food, they may encourage you to use special storage canisters that cannot be opened by wildlife.



**This method of suspending food in a bear bag should foil even the most devious of critters.**

# Camping in Bear Country

Camping in areas that are home to bears can be both a delight and a challenge. The stakes are high, though, since you must take steps to protect both yourself and the animals around you.

Key to your safety and to that of the bears is maintaining your camp in such a way that animals have no chance of getting your food. Bears that become accustomed to scavenging camp food are exposed to a diet that is not healthy for them. Worse, they can lose their fear of humans and become a danger to campers and hikers. Those bears may need to be captured and relocated or destroyed—a sad result of ignorance or lack of commitment on the part of humans sharing the outdoors with wildlife.



**For personal safety and the well-being of bears, keep a clean camp.**

- Begin with the understanding that bears will enter your camp. Keep your camp clean. At night and any time during the day when no one will be around, keep all food, garbage, and other items with an aroma (all "smellables") so far out of reach that there will be no reason for bears to stick around.
- Locate tents 100 yards or more from the camp kitchen area. If possible, place the tents upwind from food preparation and storage areas. Bears attracted by camp aromas will come to the kitchen first rather than encountering your tents.
- Never take food or any other items that have an odor into your tents. Sleeping bags, foam pads, flashlights, and books are all that should be allowed.
- Where bears are a serious concern, change into a sweat suit, long underwear, or other clean sleeping clothes before going to bed. Store your day clothes (which may have picked up odors while you were cooking and eating) in the kitchen or food storage areas, far from your tents.
- Learn all you can about bears and their habits. Information will enhance your experiences in the backcountry, increase your personal safety, and allow you to avoid putting bears at risk.

“We saw a pretty sight on Tuesday morning, when a large deer came into camp just as we were getting up. . . Alert and curious, she lingered around for several minutes and then, apparently having satisfied her curiosity, bounded off into the woods. So engrossed was I in watching the beautiful creature that I did not realize until afterwards that I was standing in the snow in my stocking feet.”

—Ernest Moore Foster, *Pack Train and Transit:  
First Survey of South Half Colville Indian  
Reservation, 1906*

## Fun in Camp

Setting up and managing a camp will take time, but of course there's more to time in the outdoors than that. A campout can get you close to an area where you can enjoy an exciting activity—rappelling, for example, or swimming, kayaking, photography, or environmental studies. As you plan a trip, think about the opportunities for adventure within easy reach of your campsite. Other possibilities include the following.

- Take a day hike to a lake, the top of a mountain, a scenic vista, or other point of interest.
- On winter trips, try cross-country skiing or snowshoeing. Build an igloo or a snow cave. Look in the snow for the footprints of wildlife, and follow them to discover the habits of different animals.
- Bike along trails open to pedaling.
- Go canoeing, rafting, swimming, or fishing.
- With proper supervision, take part with your group in organized rock climbing and rappelling. Learn the correct skills and safety procedures from qualified instructors.
- Perform a conservation project approved by the landowner or land management agency.



## Fun + Planning + Safety = Good Times

Besides proper planning, conditioning, and taking the right equipment, camping activities may have additional requirements to help keep the good times rolling. As you choose the activities you need to fulfill requirement 9b, keep the following in mind.

- ☐ **Know first aid for the injuries or illnesses that could occur during the activity you choose.** Every outdoor activity has its particular risks, and hiking, backpacking, biking, water activities afloat, biking, rappelling, and conservation projects are no exceptions.
- ☐ **Plot your route carefully.** With careful planning, you shouldn't be surprised by rivers, cliffs, or other barriers. If you do run into unfamiliar or unpredictable terrain, figure out a better way to get around it. You can always go back the way you came.
- ☐ **Secure permission in advance.** Always obtain the land management agency's or owner's permission to cross or use public lands and private property.
- ☐ **Stay with your group.** You can share in all the fun, and be there if anyone needs your assistance.
- ☐ **Use the buddy system at all times.** Your unit leader will know that every Scout needs a buddy while out on the trail or the open water. Besides, a buddy makes everything more fun!
- ☐ **Know when to turn around and go home.** Inclement weather and other obstacles may sometimes make your activity too hazardous to continue. Come back and try again when the time is right.
- ☐ **Make the principles of Leave No Trace a habit.** Set a good example for younger Scouts and other users of the outdoors.

## Stormy Weather Camping

When the weather turns bad, your camping skills can be put to a real test. Draw on previous outdoor experiences, stay focused on the job at hand, and you should be able to make the most of a campout no matter what the clouds throw at you. Here is one way to go about it.

- First, look after your personal safety and that of your group. Take steps to stay warm and dry, and be on the lookout for signs of hypothermia.
- Next, secure your camp. If you have just arrived at a campsite, set up a dining fly and use it to shelter your packs while you pitch the tents.
- Fire up a camp stove, heat a pot of water, and soon you can lift everyone's spirits with hot drinks, bowls of soup, and other kitchen delights.
- Enjoy the outdoors while the weather rages. Storms bring with them a magic that you will never experience when the sun is shining.
- Be patient. You can't change the weather, so there's no need to become upset even if the rain has cut short other outdoor activities.

Now and then there's nothing better than tent-time in a storm. With a dry tent, a warm sleeping bag, and a good book, you can settle in for a few relaxed hours. Add good friends to share stories and games, and you will find that being weather-bound in the woods can be one of camping's great pleasures.



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"As we lay huddled together under the tent, which leaked considerably about the sides, with our baggage at our feet, we listened to some of the grandest thunder which I ever heard—rapid peals, round and plump, bang, bang, bang, in succession, like artillery from some fortress in the sky; and the lightning was proportionally brilliant."

—Henry David Thoreau,  
*The Maine Woods*,  
1864

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# Breaking Camp

All good things must come to an end, and that includes camping trips. As you break camp, keep in mind these suggestions.

- Leave the dining fly in place until you're almost ready to go. It can serve as a last-minute shelter for people and gear.
- With the doors open, shake out the tents before stuffing them in their storage sacks.
- Check the locations of catholes and latrines to be sure they have been buried and ground cover has been restored.
- If you used an established fire lay, dig through the cold ashes. Remove and pack out any bits of food, metal, and other litter and trash.
- Inspect the areas used for cooking, food storage, and tents, and be sure you have picked up everything you brought to camp. Leave the campsite looking better than you found it.







## Take a Last Look

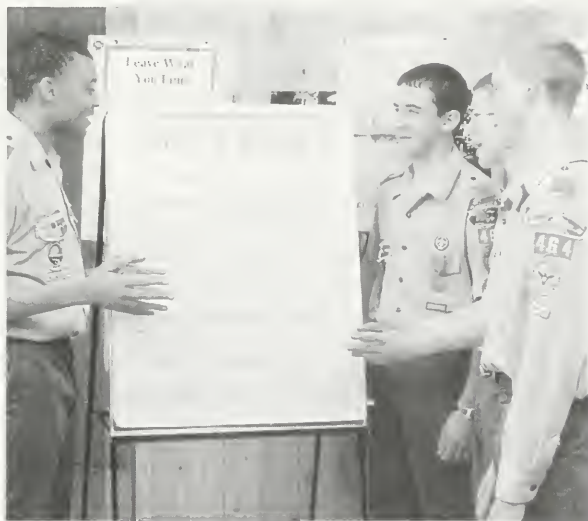
When all of your gear is packed and you are ready to leave a campsite, walk around one last time, looking carefully. The idea is not to find more equipment scattered about—you should already have done a thorough job of gathering up everything you brought. Instead, give some thought to the good times you've had camping there and how special that site has become to you.

You may pitch your tent in the same place many times in the future, or you may never pass this way again. Whatever the case, every place where you camp becomes part of your permanent outdoor history. You will be surprised over the years how often these adventures will come to mind, and with what pleasure you will remember the places where you slept under the stars.

## Back Home

Dry and clean all of your gear when you get home. Set up tents or hang them from a clothesline or indoors. Do a load of laundry to wash dirty clothes. Make sure pots and pans have been scrubbed. Air out sleeping bags, then hang them up or store them loosely in large cotton sacks. Brush any dirt or mud from your boots and treat them with boot dressing to keep the leather flexible and water-repellent.

Finally, start planning another adventure. The next time you want to go camping—and it won't be long—you will already be well on your way to the great out-of-doors.



# Camping Resources

## Scouting Literature

*Boy Scout Handbook; Passport to High Adventure; Fieldbook; Conservation Handbook; Topping Out; Backpacking, Canoeing, Cooking, Cycling, Hiking, First Aid, Orienteering, Rowing, Small-Boat Sailing, Whitewater, and Wilderness Survival* merit badge pamphlets.

## Instruction and Guidebooks

Carline, Jan D., et al. *Mountaineering First Aid:*

*A Guide to Accident Response and First Aid Care*, fourth edition. Mountaineers Books, 1996.

Curtis, Rick. *The Backpacker's Field Manual:*

*A Comprehensive Guide to Mastering Backcountry Skills*. Three Rivers Press, 1998.

Fleming, June. *Staying Found: The Complete Map & Compass Handbook*. Mountaineers Books, 1994.

Forgey, William. *Basic Essentials: Wilderness First Aid*, second edition. Globe Pequot Press, 1999.

———. *Campfire Stories, Volume 1: Things That Go Bump in the Night*. ICS Books, 1985.

Graham, John. *Outdoor Leadership: Technique, Common Sense & Self-Confidence*. Mountaineers Books, 1997.

Hart, John. *Walking Softly in the Wilderness: The Sierra Club Guide to Backpacking*, third edition. Sierra Club Books, 1998.

Harvey, Mark. *The National Outdoor Leadership School's Wilderness Guide: The Classic Handbook*. Fireside, 1999.

Howe, Steve, editor. *Making Camp: The Complete Guide for Hikers, Mountain Bikers, Paddlers & Skiers*. Mountaineers Books, 1997.

Manning, Harvey. *Backpacking, One Step at a Time*, fourth edition. Random House, 1986.

Petzoldt, Paul. *The New Wilderness Handbook*. W. W. Norton & Company, 1984.

Randall, Glenn. *The Outward Bound Backpacking Handbook*. Lyons Press, 2000.

Schad, Jerry. *Wilderness Basics: The Complete Handbook for Hikers & Backpackers*, second edition. Mountaineers Books, 1992.

Viehman, John, editor. *Trailside's Hints & Tips for Outdoor Adventure*. Rodale Press, 1993.

## **Camp Cooking**

Adare, Sierra. *Backcountry Cooking: Feasts for Hikers, Hoofers, and Floaters*. Tamarack Books, 1996.

Miller, Dorcas S. *Good Food for Camp and Trail: All-Natural Recipes for Delicious Meals Outdoors*. Pruett Publishing Co., 1993.

Pearson, Claudia, editor. *NOLS Cookery (National Outdoor Leadership School)*, fourth edition. Stackpole Books, 1997.

Prater, Yvonne, and Ruth D. Mendenhall. *Corp, Glop & Glue Stew*. Mountaineers Books, 1982.

Tilton, Buck, and Melissa Gray. *Cooking the One Burner Way: Gourmet Cuisine for the Backcountry Chef*. ICS Books, 1994.

## **Leave No Trace**

Hampton, Bruce, and David Cole. *Soft Paths: How to Enjoy the Wilderness Without Harming It*. Stackpole Books, 1995.

Harmon, Will. *Leave No Trace: Minimum Impact Outdoor Recreation*. Falcon Publishing Company, 1997.

McGivney, Annette. *Leave No Trace: A Practical Guide to the New Wilderness Ethic*. Mountaineers Books, 1998.

## **Organizations, Government Agencies, and Web Sites**

Your local library, state parks, and state conservation lands may also serve as good resources for camping in your area.

Bureau of Land Management

Web site: <http://www.blm.gov>

CampNet America

Web site: <http://www.kiz.com/campnet/html>

National Parks Service

Web site: <http://www.nps.gov>

U.S. Fish and Wildlife Service

Web site: <http://www.fws.gov>

U.S. Forest Service

Web site: <http://www.fs.fed.us>

The World Outdoors

Web site: <http://www.geocities.com/Yosemite/5544/links.htm#campgrounds>

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The Boy Scouts of America thanks Robert Birkby, author of the 10th and 11th editions of the *Boy Scout Handbook*, for his work in revising the *Camping* merit badge pamphlet and the badge requirements.

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## Notes



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Merit Badge Pamphlet	Year	Merit Badge Pamphlet	Year	Merit Badge Pamphlet	Year
American Business	1975	Energy	1978	Photography	1994
American Cultures	1995	Engineering	1978	Pioneering	1993
American Heritage	1976	Entrepreneurship	1998	Plant Science	1983
American Labor	1987	Environmental		Plumbing	1999
Animal Science	1999	Science	1998	Pottery	1969
Archaeology	1997	Family Life	1991	Public Health	1996
Archery	1986	Farm Mechanics	1997	Public Speaking	1969
Architecture	1995	Fingerprinting	1983	Pulp and Paper	1993
Art	1968	Fire Safety	1995	Radio	1996
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Athletics	1964	Fish and Wildlife		Reading	1993
Atomic Energy	1983	Management	1990	Reptile and	
Auto Mechanics	1992	Fishing	1988	Amphibian Study	1993
Aviation	1968	Forestry	1984	Rifle Shooting	1990
Backpacking	1983	Gardening	1982	Rowing	1998
Basketry	1986	Genealogy	1988	Safety	1997
Bird Study	1999	Geology	1985	Salesmanship	1987
Bugling (See Music)		Golf	1977	Scholarship	1988
Camping	1984	Graphic Arts	1998	Sculpture	1969
Canoeing	1989	Hiking	1999	Shotgun Shooting	1989
Chemistry	1996	Home Repairs	1993	Skating	1999
Cinematography	1990	Horsemanship	1986	Small-Boat Sailing	1995
Citizenship in the		Indian Lore	1996	Snow Sports	1999
Community	1993	Insect Study	1985	Soil and Water	
Citizenship in the		Journalism	1999	Conservation	1995
Nation	1993	Landscape		Space Exploration	1990
Citizenship in the		Architecture	1969	Sports	1996
World	1995	Law	1975	Stamp Collecting	1993
Climbing	1999	Leatherwork	1983	Surveying	1992
Coin Collecting	1975	Lifesaving	1993	Swimming	1993
Collections	1991	Mammal Study	1972	Textile	1972
Communications	1997	Medicine	1991	Theater	1999
Computers	1993	Metalwork	1969	Traffic Safety	1992
Cooking	1986	Model Design and Building	1993	Truck	
Crime Prevention	1996	Motorboating	1992	Transportation	1973
Cycling	1996	Music and Bugling	1994	Veterinary Medicine	1996
Dentistry	1997	Nature	1991	Waterskiing	1999
Disabilities Awareness	1993	Oceanography	1993	Weather	1999
Dog Care	1984	Orienteering	1992	Whitewater	1989
Drafting	1993	Painting	1983	Wilderness	
Electricity	1996	Personal Fitness	1999	Survival	1984
Electronics	1996	Personal		Wood Carving	1994
Emergency		Management	1996	Woodwork	1970
Preparedness	1995	Pets	1984		

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