

**And a few other items to consider:**

**Whistle:** For summoning help, it will outlast your vocal chords and the sound will travel much farther.

**Watch:** Keep track of start time, turnaround-time, and when the sun sets.

**Insect repellent:** Your most effective options are: 1) Lotion or spray repellents containing DEET, and/or 2) Clothing that has been treated with permethrin.

**Signaling device:** As noted earlier, some compasses come with sighting mirrors. If yours does not, consider taking a small mirror to signal rescuers in an emergency.

**Communication device:** Two-way radios, a cell or a satellite phone, and/or a satellite messenger (i.e., SPOT) can add a measure of safety in many situations.

**Knowledge:** Having items in your pack has no value unless you understand how to use them. As one search-and-rescue leader told us, "People talk about the Ten Essentials, but the most important essential is between your ears."

**Final Thoughts**

Even though you may only occasionally use a few of these items, carrying the Ten Essentials on all your backcountry excursions is a smart move. They serve as the antidote to the unexpected, like the seatbelts in your vehicle.

The Ten Essentials can also form the core of your home (or car) emergency-preparedness kit. They are all about safety, advance preparation and peace of mind. They could potentially save your life.



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**BE PREPARED.**

# Ten Essential Systems



## The New Ten Essentials A Systems Approach

1. Navigation
2. Sun protection
3. Insulation
4. Illumination
5. First-aid supplies
6. Fire
7. Repair kit and tools
8. Nutrition
9. Hydration
10. Emergency shelter

The original Ten Essentials list was assembled in the 1930s by The Mountaineers, a Seattle-based organization for climbers and outdoor adventurers. In 2003, the group's updated "systems" approach made its debut in its seminal text on climbing and outdoor exploration, Mountaineering: The Freedom of the Hills (The Mountaineers Books, 2010), now in its eighth edition.

Why create such a list? The book's editors explain: "The purpose of this list has always been to answer two basic questions: First, can you respond positively to an accident or emergency? Second, can you safely spend a night—or more—out?" Packing these items whenever you step into the backcountry, even on day hikes, is a good habit to acquire. True, on a routine trip you may use only a few of them. Yet you'll probably never fully appreciate the value of the Ten Essentials until you really need one of them.

Before you hit any trail, no matter how easy, no matter how short, no matter how close to home make sure your backpack is loaded with the ten essentials. When in the backcountry you are responsible for your own safety, and any one of these ten items may help to save your life. Carry each one and know how to use them.

In addition to these items, know your limits and be sure you leave an itinerary with friends or relatives.

# 10 Essential Systems

## 1. Navigation

A compass, combined with map-reading knowledge, is a vital tool if you become disoriented in the backcountry. Always carry a compass and a detailed topographic map of the area you are visiting and know how to use them. Place the map in a protective case or plastic covering. Climbers may also choose to carry other navigational tools such as an altimeter or global positioning system (GPS) receiver; other aids include route markers, route descriptions, and other types of maps or photos. GPS units are great, but they are not substitutes for knowing how to use a map and compass. They're delicate devices and can break, get waterlogged or seize up in cold weather. A compass weighs next to nothing and does not rely on batteries. If you travel regularly in the wilderness, consider taking a class to learn navigation techniques in depth.

## 2. Sun Protection

Carry and use sunglasses, sunscreen for the lips and skin, and clothing for sun protection. Your eyes need protection, especially if you are on snow or above treeline. Sunglasses are a must. The sun's rays are strong and damaging; sunscreen is important for people of all skin types.

## 3. Insulation (Extra Clothing)

The term "extra clothing" refers to additional layers that would be needed to survive the long, inactive hours of an unplanned bivouac. Extra clothing should be selected according to the season. Ask this question: "What is needed to survive the worst conditions that could be realistically encountered on this trip?" Conditions can abruptly turn wet, windy or chilly in the backcountry, so it's smart to carry an additional layer of clothing in case something unexpected (you get hurt or lost, for example) prolongs your exposure to the elements. Always tuck rain gear into your backpack and bring along layers of clothes. Avoid cotton clothing in favor of wool or poly blends that wick moisture away

from your skin. Cotton clothing, soaked in sweat, dew, rain or melted snow, loses 70% of its insulating value by conduction and evaporation and has caused the frostbite injury or death of many people. Clothing should be made from synthetic materials (i.e., polypropylene, pile, fleece, nylon, Goretex) or natural wicking fibers such as wool.

## 4. Illumination

Even if the climbing party plans to return to their cars before dark, it is essential to carry a headlamp or flashlight, just in case. Every member of a backcountry party should carry his or her own light. Batteries and bulbs do not last forever, so carry spares of both at all times. Test your light before each trip. Headlamps are the light source of choice in the backcountry because of their hands-free operation, low weight, compact size (so they occupy minimal space in your pack) and long battery life (in models using light-emitting diodes, or LEDs).

It's easy to overextend your stay on a picture-perfect mountain. If you're trying to hustle out of the backcountry in dwindling light or trying to set up camp as the last bit of blue drains from the sky, a headlamp is an invaluable aid.

## 5. First-Aid Supplies

Carry and know how to use a first-aid kit, but do not let a first-aid kit give you a false sense of security. The best course of action is to always take the steps necessary to avoid injury or sickness in the first place. Pre-assembled first-aid kits take the guesswork out of building your own kit, though many people personalize these kits to suit individual needs. The length of your trip and the number of people involved will impact the contents of your kit. It's also a good idea to carry some sort of compact guide to dealing with medical emergencies. Make sure you have the supplies to deal with major injuries, and make sure you have the knowledge. Take a first aid course from American Red Cross or, better yet, a wilderness first aid course with Adirondack Mountain Club.

## 6. Fire

Carry the means to start and sustain an emergency fire. Most climbers carry a butane lighter or two and matches in a waterproof container (or waterproof matches). Take plenty and ensure they are kept dry. Mechanical lighters are

handy, but always carry some matches as a backup. Either must be absolutely reliable. A magnesium or flint/steel firestarter is a good backup. Firestarters are indispensable for igniting wet wood quickly to make an emergency campfire. Common firestarters include candles, chemical heat tabs, commercially available products and homemade items [dry tinder tucked away in a plastic bag; candles; priming paste; heat "nuggets" (chipped-wood or sawdust clusters soaked in resin or candle wax); cotton balls soaked in petroleum jelly; even lint trappings from a household clothes dryer can work.]

## 7. Repair Kit and Tools

Knives are so useful in first aid, food preparation, repairs, and other emergency needs that every party member needs to carry one. Other tools (pliers, screwdriver, awl, scissors) can be part of a knife or a pocket tool, or carried separately—perhaps even as part of a group kit. Other useful repair items are duct tape, cordage, shoelaces, safety pins, needle and thread, wire, nylon fabric repair tape, cable ties, plastic buckles, webbing, and parts and tools for equipment such as tent, stove, sleeping pad, crampons, snowshoes, and skis.

## 8. Nutrition (Extra Food)

For shorter trips, one extra day's supply of food is a reasonable emergency stockpile in case foul weather, faulty navigation, injury, or other reasons delay the planned return. An expedition or long trek may require more. The food should require no cooking, be easily digestible and high in energy, and store well for long periods. Extra energy bars, jerky, nuts, candy, granola, and dried fruit works well. If a stove is carried, cocoa, dried soup, and tea can be added. There are many possibilities. The process of digesting food helps keep your body warm, so on a cold night it's smart to munch some food before bunking down—just don't leave animal-attracting leftovers inside your shelter.

## 9. Hydration (Extra Water)

It is essential to drink a lot of water while hiking. Without water, your body doesn't perform as well and you could grow more susceptible to heat stroke, hypothermia and altitude sickness. Carry extra water and have the skills and tools required for obtaining and purifying additional water. All water sources can harbor tiny organisms that would make your life unpleasant later. You should purify all water with a water filter or purifier, chemical

tablets or boiling before drinking. Always carry at least one water bottle or collapsible water sack. Daily water consumption varies greatly. Two quarts (liters) daily is a reasonable minimum; in hot weather or at high altitudes, 6 quarts may not be enough. In dry environments, carry additional water. Plan for enough water to accommodate additional requirements due to heat, cold, altitude, exertion, or emergency. When beginning extended travel along a ridgeline or in alpine conditions, consult your map and try to envision possible water sources. Try to resupply at the last obvious water source before beginning a stretch of unpredictable water availability.

## 10. Emergency Shelter

Most overnight wilderness travelers already carry a tent or tarp, but day trippers should carry some type of emergency shelter too. The thinking is, even if you're not planning to spend the night out, you'll be prepared for rain, wind or poor weather if getting lost or injured leaves you stranded in the backcountry. Options include an ultralight tarp, a bivy sack, an emergency space blanket, even a large plastic trash bag.

Source: [Mountaineering: The Freedom of the Hills](#) (The Mountaineer Books, 2010)



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