



### Gear Essentials

#### Backpack

<b>Capacity (Liters)</b>	Day Hiking: 20-35L Overnight: 30-50L Multi-day: 50-80L+
<b>Features</b>	Adjustable torso length, hip belt, sternum strap, multiple compartments/pockets, rain cover compatibility.
<b>Fit</b>	Proper fit is crucial. Visit a gear shop for professional fitting.
<b>Weight</b>	Consider the pack's empty weight. Lighter is better, but durability matters.
<b>Organization</b>	Choose a backpack with enough pockets and compartments to keep your gear organized and easily accessible.

#### Shelter

<b>Tent Types</b>	Freestanding, semi-freestanding, tarp tents, bivy sacks.
<b>Seasonality</b>	3-season (spring, summer, fall), 4-season (winter).
<b>Weight &amp; Packability</b>	Balance weight with weather protection and durability.
<b>Features</b>	Waterproof/resistant fabric, bathtub floor, good ventilation, easy setup.
<b>Sleeping Bag</b>	Temperature rating should match expected conditions. Consider fill type (down or synthetic).
<b>Sleeping Pad</b>	Provides insulation from the ground. Types: foam, inflatable, self-inflating.

#### Clothing

<b>Layering System</b>	Base layer (moisture-wicking), mid-layer (insulation), outer layer (waterproof/windproof).
<b>Materials</b>	Synthetic (polyester, nylon), wool (merino), down.
<b>Essential Items</b>	Hiking boots, socks (wool or synthetic), hat, gloves, rain gear, sun protection (sunglasses, sunscreen, hat).
<b>Moisture Management</b>	Avoid cotton. Choose fabrics that wick away sweat.
<b>Footwear</b>	Hiking boots or trail runners, depending on terrain and personal preference. Ensure proper break-in before your trip.

### Navigation & Safety

#### Navigation

<b>Map &amp; Compass</b>	Essential for off-trail navigation. Learn how to use them <i>before</i> your trip.
<b>GPS Device/Smartphone</b>	Useful for tracking progress and marking waypoints. Carry extra batteries or a power bank. Download offline maps.
<b>Route Planning</b>	Study the trail map, identify landmarks, and estimate hiking time.
<b>Altitude Awareness</b>	Be aware of elevation gain and potential altitude sickness. Ascend gradually and stay hydrated.
<b>Weather Forecast</b>	Check the weather forecast before you go and be prepared for changing conditions.

#### First Aid & Emergency

<b>First Aid Kit</b>	Include essentials like bandages, antiseptic wipes, pain relievers, blister treatment, and any personal medications.
<b>Emergency Communication</b>	Satellite communicator (e.g., Garmin inReach, SPOT), whistle, signal mirror. Cell phones may not have service in remote areas.
<b>Emergency Shelter</b>	Bivy sack, emergency blanket, or tarp.
<b>Leave No Trace</b>	Pack out all trash, minimize campfire impacts, stay on trails, and respect wildlife.
<b>Know Your Limits</b>	Don't push yourself beyond your physical capabilities. Turn back if necessary.
<b>Inform Someone</b>	Tell someone your hiking plans, including your route and expected return time.

#### Wildlife Safety

<b>Bear Safety</b>	Store food properly (bear canister or hang), make noise while hiking, carry bear spray (know how to use it).
<b>Other Wildlife</b>	Be aware of other potential wildlife encounters (e.g., snakes, mountain lions). Maintain a safe distance and never feed animals.
<b>Food Storage</b>	Use bear-resistant containers or hang food at least 10 feet off the ground and 4 feet from the tree trunk.
<b>Avoid Encounters</b>	Hike during daylight hours, stay on marked trails, and make noise to alert wildlife of your presence.

### Camp Setup & Skills

#### Campsite Selection

<b>Location</b>	Flat, sheltered from wind, near a water source (but not too close), away from trails and animal paths.
<b>Leave No Trace</b>	Camp on durable surfaces, minimize site alterations, and pack out all trash.
<b>Water Source</b>	Choose a site that is a reasonable distance to a water source. Always purify water before drinking.
<b>Safety</b>	Avoid camping under dead trees or branches. Be aware of potential hazards like rockfalls or flooding.
<b>Sun Exposure</b>	Consider the amount of sun exposure at the campsite, especially in hot weather.

#### Fire Starting

<b>Essentials</b>	Firestarter (lighter, matches, ferro rod), tinder (dry leaves, twigs, cotton balls with petroleum jelly), kindling (small sticks), fuel (larger logs).
<b>Technique</b>	Build a small tinder nest, add kindling gradually, and then add fuel logs.
<b>Safety</b>	Clear a 10-foot radius around the fire, never leave a fire unattended, and extinguish it completely before leaving.
<b>Alternatives</b>	Consider using a camp stove for cooking to minimize fire impact and fuel consumption.
<b>Regulations</b>	Check local fire restrictions before building a fire.

#### Water Purification

<b>Methods</b>	Boiling (1 minute at sea level, add time for elevation), filtration (water filter), chemical treatment (iodine tablets, chlorine dioxide).
<b>Filtration</b>	Use a water filter to remove sediment and microorganisms. Choose a filter with a pore size of 0.2 microns or smaller.
<b>Chemical Treatment</b>	Use iodine tablets or chlorine dioxide to kill bacteria and viruses. Follow the manufacturer's instructions for dosage and contact time.
<b>Pre-Filtering</b>	Pre-filter water through a cloth or coffee filter to remove sediment before purification.
<b>Storage</b>	Store purified water in a clean container.

# Wilderness Survival

## Shelter Building

<b>Lean-to</b>	Simple and quick shelter using a slanted roof against a tree or support.
<b>Debris Hut</b>	Insulated shelter made from piled-up leaves and branches.
<b>Snow Cave</b>	Effective shelter in snowy environments, providing insulation from cold and wind.
<b>Location</b>	Choose a sheltered location away from hazards like falling rocks or trees.
<b>Insulation</b>	Insulate the shelter with natural materials like leaves, pine needles, or moss.
<b>Size</b>	Build the shelter just large enough to accommodate your body to conserve heat.

## Finding Water

<b>Rainwater</b>	Collect rainwater using a tarp or container.
<b>Dew Collection</b>	Absorb dew with a cloth and wring it out into a container.
<b>Streams &amp; Springs</b>	Locate streams and springs by following drainage patterns or animal trails.
<b>Plant Transpiration</b>	Cover leafy branches with a plastic bag to collect transpired water.
<b>Snow &amp; Ice</b>	Melt snow and ice for drinking water (requires fuel).
<b>Purification</b>	Always purify water before drinking to remove contaminants and pathogens.

## Signaling for Help

<b>Fire Signals</b>	Build a smoky fire during the day and a bright fire at night.
<b>Mirror Signals</b>	Reflect sunlight with a mirror to signal aircraft or distant rescuers.
<b>Whistle</b>	Use a whistle to create a loud, distinct sound (three blasts is an international distress signal).
<b>Ground Signals</b>	Create large ground signals using rocks, branches, or fabric.
<b>Signal Fire Location</b>	Build signal fires in open areas where they can be easily seen from a distance.
<b>Signal Patterns</b>	Use the international distress signal (three of anything: fires, whistles, flashes).