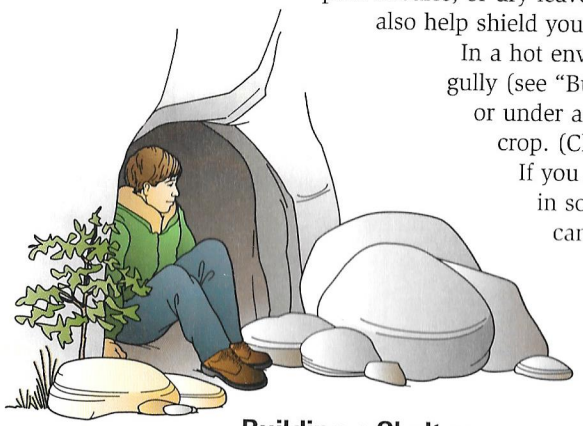
To help conserve warmth, keep the interior size of a tarp shelter small.

While we often think of a shelter as protection from rain and wind, much body heat can be lost through direct contact with the ground. Insulate the floor of your shelter with a sleeping pad, if you have one, or by piling up evergreen boughs, pine needles, or dry leaves. Sitting on your pack will also help shield you from the chill of bare earth.

In a hot environment, find shade in a small gully (see "Building a Shelter," covered next) or under a tree, large shrub, or rock outcrop. (Check for snakes first, though!) If you are rested, scoop out a hollow in soft ground; it can be significantly cooler beneath the surface.

Train your eyes to recognize instant natural shelters. You will be surprised at all that nature provides if you look closely enough.



Building a Shelter

Before building a shelter, think about how you will build it and then locate the right site for it. The site should be relatively level but sloping enough and high enough to provide adequate drainage. The site should not be exposed to wind or drifting sand or snow. Don't choose a site under dead branches or close to a dead tree that is still standing.

If you will be building your shelter from native materials, is there a sufficient supply nearby? The closer the materials are, the less energy you will use gathering them. Is there a plentiful supply of firewood? Also, evaluate any risk of rockfalls, landslides, flood, avalanches, lightning, or any other hazard.

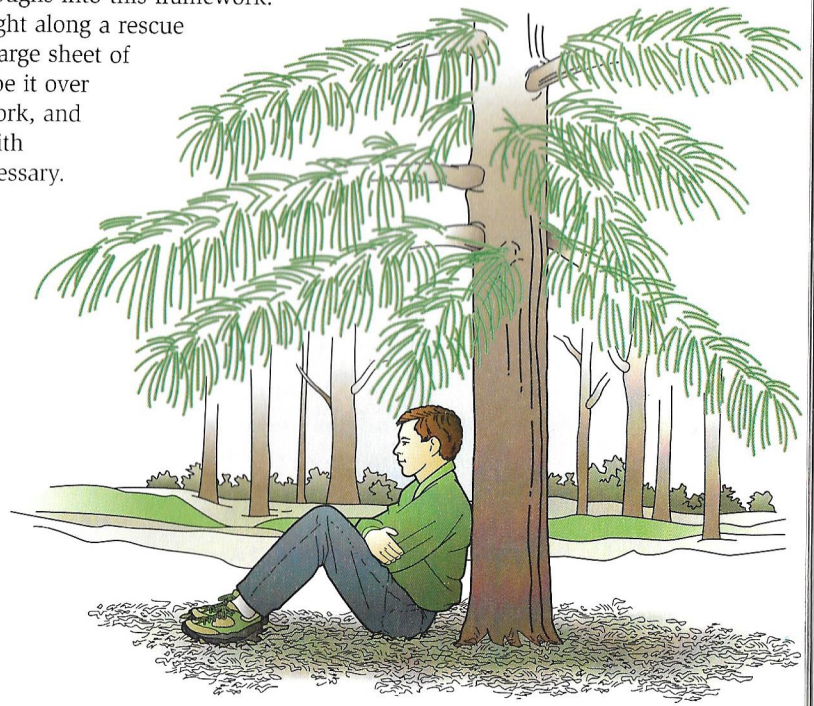
A good site will be near water—one of your priorities for surviving—but not so near that you could be threatened by

flash floods, insects, shifting river courses, or high tides. Visibility from the air should be considered for aircraft trying to pinpoint your location, although if necessary you can set out a signal in a nearby clearing that points to where you are.

A fallen tree or log; a large rock outcrop; an exposed root base; thickly vegetated brush or small spruce, fir, or pine trees; a snapped-over sapling or a lashed tripod—all can be used to improvise a shelter. Always remember that a small shelter means less work to build and less area to heat. *Build the smallest shelter that is adequate for your needs.* A shelter 7 feet long, 3 feet wide, and 2 feet high is large enough for one person in most survival situations. You will probably use it only a night or two anyway.

If using a fallen tree, a rock, or a root base, first build a framework by propping up branches that are 1 to 3 inches in diameter against the *leeward* (downwind) side. Point the tips of the branches downward to form a 60-degree angle with the ground. This will help to shed rain. Then weave smaller branches between the larger ones and work large pieces of bark and boughs into this framework.

If you brought along a rescue blanket or large sheet of plastic, drape it over the framework, and anchor it with rocks if necessary.



Pace yourself as you work so that you don't perspire. Your clothing will not keep you as warm if it becomes wet with sweat.

If you are faced with a real survival situation, by all means use live branches. Your life far outweighs any ecological detriment caused by stripping off the boughs you need for shelter. If you lack a ground cloth, you will need a substantial mat of branches to insulate your body from the ground as well. Thickly vegetated brush or small spruce trees can be bunched together and tied off at the top to fashion a fine shelter. By weaving other brush or branches into any gaps, you can weatherproof your shelter to withstand even a wind-driven downpour.

A snapped-over sapling is an effective way to start building your shelter. Pull over a sapling so that it snaps 4 to 5 feet above the ground, but don't break it off completely. Let the top remain hinged to the trunk with the tip resting on the ground; you might need a large rock to hold it down. Then prop branches that are 1 to 3 inches in diameter on both sides similar to the log or rock shelter. Weave in smaller branches, cover it with material, and pile on boughs.

Helping the Wilderness Survive You

The Boy Scouts of America is a strong supporter of Leave No Trace methods of camping, hiking, and all other outdoor activities. Follow the principles of Leave No Trace whenever you are practicing survival skills. Do everything you can to protect the environment, especially as you are building fires and gathering materials for constructing shelters.

However, wilderness situations do not always allow you to practice the low-impact techniques you have been taught. In a real emergency situation, put the safety of yourself and other persons first and take whatever actions you must to survive. Think survival first, low-impact second.

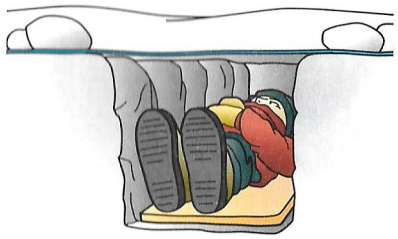
Snow Shelters. Snow can insulate you against the cold and block the wind. The simplest snow shelter is a burrow dug or tramped into a drift. That can provide you with a minimum of protection while you consider your next steps.

More effective shelters include the tree pit, snow pit, snow trench, and snow cave. In each case, you will need a tool for digging and shaping snow. That might be a shovel, a cook pot, a sturdy piece of bark, a stout stick, a license plate, or anything else you can improvise into a tool.

Tree Pit. The area beneath the branches of a large evergreen tree can be nearly free of snow. Crawl underneath and form a small living space. Bare earth radiates some heat, so remove the snow from the tree pit floor if you can. Use a foam pad protected by a ground cloth as insulation beneath you. A fir or spruce tree will shed snow outside of the pit.

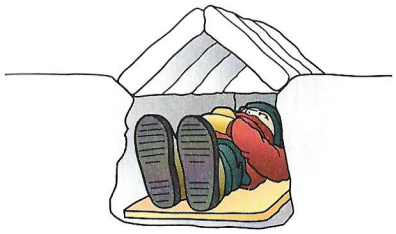
Tree pit

Snow Pit. Where snow is deep enough, you can dig a long, narrow pit for an emergency shelter. Form a roof by stretching a tarp or ground cloth over the top of the trench. Weigh down the edges with snow, stones, or branches, then cover the roof with several inches of snow to provide insulation. Insulate the floor of the pit with a sleeping pad if you have one and, when you are inside, fill the entry with your pack or with more snow to keep out the cold. Poke a few ventilation holes near the entrance and check them occasionally to be sure that they remain clear.



Snow pit

Snow Trench. Where the snow is compacted and you have a way to cut it into blocks, shape a 36-inch-deep trench that tapers from 24 inches at the top to 36 to 48 inches at the base. Place the blocks on edge along the sides of the trench, then lean them against each other to form a pitched roof. Insulate the trench floor with a sleeping pad.



Snow trench

Snow Cave. A snow cave provides terrific protection in the worst winter storms. The drawback is that it takes a good deal of time to construct. You will also need to be careful not to get your clothing wet as you dig, either by sweating or by snow melting and soaking into the fabric.

Start excavating a snow cave by burrowing a tunnel into the side of a deep, stable drift, angling the tunnel upward for several feet. Next, excavate a dome-shaped room at the top of the tunnel, judging the thickness of the roof by watching from the inside for a light blue color of the snow that indicates the wall thickness is about right. Smooth the curved roof to remove sharp edges that may cause moisture to drip onto your gear. Finally, use a ski pole, shovel handle, or stick of wood to punch several ventilation holes in the ceiling at a 45-degree angle to the floor. Since the entrance tunnel slants upward, rising warm air won't escape through it and heavier cold air can't seep in.

Mark Your Shelter Location

Whatever shelter you use, make its location obvious to rescuers. Set up tents and tarps where they can be seen from aircraft and by rescuers on the ground. When your shelter is hidden—a snow cave, for example, or the space under an evergreen tree—use native materials or items you have on hand to let others know where you are. Tie spare items of clothing to tree branches. Make flags out of T-shirts or other cloth you can spare. Lay out ground-to-air signals to attract the attention of rescuers in aircraft. (See Ground-to-Air Visual Signal Code in this merit badge pamphlet.)