Camping Skills III

Contents

Contents 1

1. Be at least in the 7th grade. 2

2. Review six points in the selection of a good campsite. Review the safety rules of fire building. 2

3. Go on a weekend campout. 2

4. Lay the following three fires and tell their uses: 3

5. Know six ways to start a fire without a match. Build a campfire using one of these: 3

6. Know how to properly sharpen a hatchet and knife. 6

7. Cook a one-pot meal using fresh or dried food. 8

8. Describe the various types of tents and their uses. 8

9. How does condensation occur in tents, and how can it be prevented? 11

10. Demonstrate your ability to anchor a tent down, using the taut-line hitch and two half hitches. 11

11. While camping, plan and give a ten-minute devotional or organize and lead a nature or Bible game or lead out in Sabbath School, camp church, or camp vespers. 12

12. Properly locate and build one of the following and describe its importance to the individual and the environment: 12

13. Demonstrate four basic lashings and construct a simple object using these lashings. 14

Square Lashing 14

Diagonal Lashing 14

Round Lashing 15

Japanese square lashing 15

Tripod Lashing 16

Shear lashing 17

Continued lashing 18

1. Be at least in the 7th grade.

Camping Skills III has been designed so that it is within the capabilities of Pathfinders who are in the 7th grade or higher.

2. Review six points in the selection of a good campsite. Review the safety rules of fire building.

Campsite Selection - To help remember the things that are important to camp site selection, remember the six W's:

- **Wind**- Find areas that are protected from the wind. This requires knowing or guessing at the normal wind direction (hint look at the direction trees are leaning and the current wind direction)
- **Water**- Fresh water should be available for drinking, beware of drainage areas, flooding and other water related hazards. Marshy areas can have a high mosquito population that can make camping miserable.
- **Weather**- Knowledge of the weather patterns of an area can help you decide the best location for the camp site.
- **Wild things**- Beware of signs of large mammals such as bear, wolves, and mountain lions. Also, watch out for the small wild things such as snakes, spiders, ticks, biting flies and mosquitoes.
- **Wood**- Adequate wood should be available for a campfire, and no dead wood above sleeping area. Survey the trees to make sure that they will not fall on you in strong winds.
- **Willingness**- Make sure the owner of the property is willing for you to camp on it. Make sure you have the proper permits for camping areas.

Fire Safety

- Set the fire in a safe place. It should be clear for 10 feet (3 meters) all around, with no overhanging branches.
- Do not use accelerants, such as lighter fluid, gasoline, kerosene, etc. Learn to light a fire without these.
- Do not build a fire on top of flammable material such as grass or leaves. Cut away the sod (keep it moist so it stays alive, and replace it before your leave), and clear away the duff and litter.
- Put the fire out completely before leaving it. If it's too hot to put your hands in the ashes, it's not sufficiently out. Douse it down with water, turn the coals with a shovel, and be sure to extinguish every coal and ember.
- Keep fire extinguishing supplies handy and near the fire. A bucket of water or sand, or a fire extinguisher are recommended.

3. Go on a weekend campout.

Weekend campout are a lot of fun, especially if the campers have some knowledge of camping! You can attend a local camp, area camp, Conference camporee, division camporee or International camporee. This is a special bonding time for members of the local Pathfinder club. Of course, Pathfinders also like to camp with their friends and families, and those trips can also be used to meet this requirement. Remember, the more you know about camping, the more fun it is!

4. Lay the following three fires and tell their uses:

a. Hunter's Fire

The hunter's fire is a cooking fire. The logs on top are spaced close enough together such that a pot, pan, or Dutch oven can be placed on them. Try to lay it as level as possible.

b. Reflector fire

This fire can be used for baking, though it is not as efficient as a reflector oven (which is has a metallic reflecting surface and often surrounds the item. The fire itself can be of any other form, and is placed in front of the reflector. The item to be baked is placed between the reflector and the fire. This fire is also good for getting oneself warm. The reflector can also be a large rock. If you sit (or sleep) between the reflector and the fire, the side of you facing the fire will be warmed directly, while the reflector throws heat to the opposite side. Very toasty.
If making the reflector from logs, the vertical members should be driven deeply into the ground to support the weight of the horizontal members. You can also use rocks to support them.

c. Star fire

The advantage of this fire is that the logs can be of any length, avoiding the need to cut them up. As the ends of the logs burn, they are pushed into the fire. The fire is lit at the center of the star. If the logs are propped up on the fire ring, gravity will feed them in as they burn.

5. Know six ways to start a fire without a match. Build a campfire using one of these:

a. Compressed air (fire piston)

The fire piston technology is like a diesel engine. There are two parts to the device, a piston with a pad on the end, and a cylinder. The piston has a small pivot in the end of it that holds a piece of tinder (char cloth works well) Also there is a small groove near the end of the piston that is wrapped with thread to create O-ring. The piston is normally lubricated with Crisco, or Vaseline.

The piston is smeared with the lubricant, and a small amount of lubricant is placed in the divot at the end of the piston. The char cloth is then pressed into the grease in the pivot.

Push the end of the piston into the cylinder about a half inch. Then hold the cylinder in one hand and hit the pad of the piston with the other. Then pull the piston back out quickly and blow on the tinder. If it doesn't glow immediately you will need to try the process again, or check to make sure that the "O-ring" is tight enough.

There is not enough tinder to catch much on fire, so the best thing to do is light a larger chunk of char cloth and then use this to light the other tinder that will be part of the fire.

It is very difficult to manufacturer this device in the wilderness, so this technique is not good for an emergency unless you just happen to have a fire piston with you. Many outdoor wilderness adventurers will carry their fire piston with them when they go camping and hiking.

b. Curved glass

A piece of curved glass can sometimes be used to focus the rays of the sun, igniting the tinder. The glass must be smooth enough to not overly-distort the point of light. A magnifying glass is the typical sort of lens used for this, but there are other possibilities in a pinch.
It is possible, for instance, to use a piece of ice shaped into a sphere to do the same job. Getting the piece of ice round enough and, clear enough, and smooth enough to ignite a fire, however may prove to be difficult.

Others have reported success in polishing the bottom of a soda can, and using it as a mirror to reflect the sun's rays onto a point. Again, it takes a lot of patience to polish the can well enough to be able to light a fire this way, but it has been done. The polishing material can be any fine rouge-like substance, such as clay. The surprising thing about this technique is that a chocolate bar has been used as the polishing compound! Sample of a sandwich bag used to light a fire

c. Flint

Using flint and steel to light a fire is somewhat difficult. To use a flint and steel, you take a hard, sharp-edged rock in one hand and the steel striker in the other. The "flint" can be any hard, sharp rock, such as flint, jasper, or quartz. The striker can be any piece of high-carbon steel, such as a knife blade.
Hold the striker loosely and strike it against the rock, as if you were trying to shave the striker with the rock.

d. Friction

The "bow and drill" method is well-known (or well-fabled) and it is a lot of work. The bow is like that used for archery. To make such a bow, find a thin rope or flexible but sturdy vine, and a sturdy stick about two feet long. Tie the rope to one end of the stick, and make another knot on the other end of the stick, with the rope between the ends not quite taut. The drill is another straight stick, thin but strong, preferably stripped of bark, sharpened on the bottom end and rounded on the top. The center of the bowstring (rope) is wrapped around the drill, with the two sticks at right angles to each other. The end of the drill is placed on a piece of bark in the middle of the tinder. The top of the drill is placed in a socket made of a hardwood, bone, stone, or something similar. The socket should be greased to reduce friction - you do not want to generate heat in the socket. The bow is moved rapidly back and forth to rotate the drill and create heat and friction on the bark. This method works best with an assistant feeding the tinder to the hot spot.
Bow and drill method

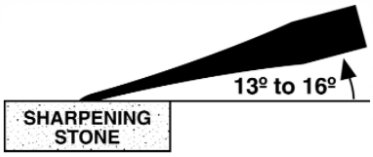
e. Metal match

The term metal match, or 'firesteel' has become synonymous with so called 'artificial flints' which are metal rods of varying size composed of ferrocerium, an alloy of iron and mischmetal. Mischmetal is an alloy primarily of cerium that will generate sparks when struck. Iron is added to improve the strength of the rods. Small shavings are torn off the rod with either a supplied metal scraper, a piece of hacksaw blade, or, commonly, the back of a knife ground at a suitable angle. These shavings then ignite at high temperatures, and they are much more effective than their historical equivalent.
While it takes practice and properly prepared tinder to create a sustained fire, the modern firesteel is considered by survival instructors and serious outdoorspeople to be one of the most reliable ways of making fire in severe conditions. Two good examples of firesteel are made by Light My Fire and Blastmatch. The sparks produced by these products are extremely hot, 3000 C°, and easily light toilet paper or small pieces of wood or commercial tinder products.

Traditionally a flint and steel were used; however, the flint was not the important part. With a proper striker, you can get sparks using any hard, non-porous rock that has a sharp edge, even petrified wood. The spark comes from chipping small pieces of steel off the striker; finely divided metals ignite immediately in air, with steel burning at yellow-white heat.
Charpaper can be used as an intermediate step between the striking and the tinder. Char paper is traditionally made from cotton that has been processed into charcoal. When a spark meets char paper, it makes the char paper glow, but the char paper will not ignite. After the char paper glows, you put it against your tender and blow. This works much better than attempting to get a spark to stay on the tinder.

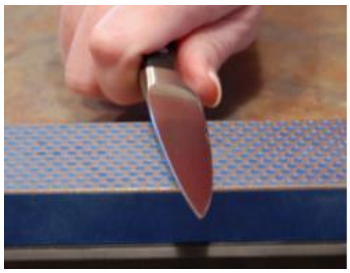
f. Spark
Making fire from an electric spark can be dangerous and should only be used in an emergency. You will need to set up some tinder ahead of time and then prepare to throw an electrical spark. This can be done with jumper cables from an automobile by connecting one end of the terminals to the battery, and then quickly touch the other ends together next to the tinder. Do not hold the terminals together for more than an instant or you will drain the battery.

6. Know how to properly sharpen a hatchet and knife.



CORRECT BLADE ANGLE FOR SHARPENING

Step 1: Select the proper coarseness for your sharpening stone.
Selecting the proper coarseness for your sharpening stone is an important first step in sharpening your knife. Not every knife needs to start at the coarsest stone you have, on the other hand a very dull knife cannot be sharpened on only your finest stone. Starting with the proper coarseness will ensure that you achieve the edge you need quickly. If your knife is very dull or has a nicked blade, start with your coarsest stone. The coarse stone removes material quickly so a poor edge can be refined quickly. However, the coarse stone must be followed up with your finer stone to refine the edge. If your knife is only slightly dull and just needs a quick touch up, starting at a medium or fine stone can save you time. Starting on a fine stone requires fewer steps but must only be used on an edge requiring little work.

Step 2: Select the right angle.

Selecting the right sharpening angle is the next step in sharpening. For more detailed instructions on selecting the right angle, try reading this article. Regardless of the method of sharpening, a appropriate angle should be selected. This angle doesn't need to be exact but following some general guidelines is a good idea. Most knife manufacturers recommend a roughly 20 degree angle. Depending on the use of your knife, you can move up or down from that angle. A fillet or slicing knife is never used on anything hard so an

angle a few degrees less will produce a sharper edge. On the other hand, a survival knife with various uses can benefit from a more durable edge a few degrees larger.

Step 3: Apply water or oil to stone.
Some stones need water, while other stones need oil for floating the swarf (small metal filings created when sharpening) away. Simply apply a few drops of either oil or water directly to the stone. (We recommend using an inexpensive spray bottle for applying the water.) The lubricant you need is determined by the type of stone you are using. Water stones and diamond stones require water. Oil stones such as India, Crystolon and Arkansas stones use oil for a lubricant.

Step 4: Sharpening the knife.
Starting with the coarsest stone needed for your knife, you will progress through each finer stone until you have reached the desired level of sharpness.

Rest your knife on the stone at your chosen angle. An easy method for determining the angle by eye is to visualize a 45 degree angle and then take half that amount. That will give you a ballpark estimate of the angle and then you can adjust accordingly up or down. With a slicing action bring the length of the knife across the stone with a motion that starts with the heel of the knife on the stone and ends with the point of the knife. The motion should resemble a sweeping arc pattern across your stone. Be very careful to maintain the angle of the knife on the stone. Longer curved knives provide additional challenges but as long as you can maintain the angle you will be sharpening very effectively. Repeat this process on the other side of the knife and continue repeating until you have sharpened your knife though all your stone grits.

Hatchet

It is tempting to take a dull hatchet to a power grinder, but unless you are very careful, this could be a huge mistake. A grinder will not only remove steel from a blade, it will also heat it. It is very easy to heat it too much, causing the steel to lose its temper (tempered steel is hard and holds an edge better than untampered steel). Steel is tempered by heating it to the point that it becomes non-magnetic, then quickly cooling it. If it can cool slowly, the iron crystals in the blade will align themselves with the Earth's magnetic field as they cool, and aligned crystals make for soft steel. So, the first advice we can give on sharpening a hatchet is to stay away from the grinder.
Instead, use a file or a stone. Hold the file so that it passes over the edge of the blade, but at a steep angle. Sharpen one side, and then the other.

Knife

To sharpen a knife, hold the blade at about a 15° angle and scrape it along a whetstone as if you were trying to shave off a thin layer of the stone. Be sure to sharpen both sides.

7. Cook a one-pot meal using fresh or dried food.

A one-pot meal is any meal that can be cooked entirely in one pot. Often, dehydrated foods are used for this, as they are extremely space and weight efficient. You can buy many dehydrated food packages at an outdoor outfitter, but the selection is limited for the observant Adventist. Many of these foods contain unclean meats or wine, but there are a few that meet Adventist dietary requirements. If one turns from the outfitters and looks in a grocery store, even more choices are available. Many rice mixes are ideal candidates as one-pot meals (red beans and rice, dirty rice, etc.). Soup mixes also work well, as do pastas, macaroni and cheese, etc.

8. Describe the various types of tents and their uses.

With the modern materials, available these days, tent manufacturers can change types, styles and shapes of tents. The tent poles hold and keep the shape of the tent. Poles can be made to be dismantled so that they can be easily transported, are color-coded, and/or linked by chain or a cord, to make it easier to set up a tent. Very few guy ropes are needed to tie down the tent (and sometimes none). Exact placement of the guy ropes is unnecessary.

Rigid Poles

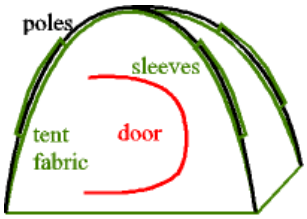
Many tents which use rigid steel poles are free-standing and do not require guy ropes, though they may require pegs around the bottom edge of the fabric. These tents are usually so heavy (25 to 80 Kg) that it takes a rather strong wind to blow them away.

Frame tents are double-skin tents. They have a living area and one or more cotton/nylon/polyester inner tents. The outer tent is draped over a free-standing steel frame, and may be made of canvas or polyester (the latter often has a hydrostatic head of 3000mm, i.e. three season camping). The living area is generally at least as large as the sleeping area, and there may be a specific section with window and extra air vents for use as a kitchen. The walls are nearly vertical and are typically about 150 to 180 cm high (5 ft. to 6 ft.). The center of the gently sloping roof is often 210 cm (7 ft.) high or more and provides reasonable headroom throughout. The smaller 2-person models were less than 3 meters' square (10 ft.), but these have largely been replaced by dome or tunnel tents. The larger 8-person models may exceed 5 meters (16 ft.) in length and/or width.

Cabin tents are single-skin tents used mainly in the USA. They often have nylon walls, polyester roof, and a polyethylene floor, plus an awning at one or both ends. With a hydrostatic head of only 1000 mm, they may best be considered as summer tents. Removable internal dividers allow the cabin to be split into 'rooms'. Sizes may range from 13 ft. by 8 ft. (2 rooms) up to 25 ft. by 10 ft. (4 rooms), with wall and roof heights like those of frame tents. There are three

separate pole units, with each unit consisting of two uprights and a connecting ridge. These pole units support the center and ends of the roof, and are usually outside the tent.

Flexible Poles



Flexible poles used for tents in this section are typically between 3 and 6 meters long (10 and 20 feet) and are normally made of tubes of fiberglass with an external diameter less than 1 cm (1/3 inch). For ease of transportation, these poles are made in sections some 30 cm to 60 cm long (1 to 2 ft.), with one end of each section having a socket into which the next section can fit. For ease of assembly, the sections for each pole are often connected by an internal cord running the entire length of the pole.

This is a basic dome tent, shown without rain fly or stakes.
Dome tents have a very simple structure and are available in a wide variety of sizes ranging from lightweight 2-person tents with limited headroom up to 6 or 9-person tents with headroom exceeding 180 cm (6 ft.). These may be single wall, or single-wall with partial flysheet, or double wall. Depending on the pole arrangement, some models pitch outer-tent first, while others pitch inner-tent first. The former helps keep the inner tent dry, but the latter is easier to pitch.
The basic dome has a rectangular floor and two poles which cross at the peak; each pole runs in a smooth curve from one bottom corner, up to the peak, and then down to the diagonally opposite bottom corner. There are usually special fittings at each corner which fit into sockets at the ends of each pole - pole tension keeps everything in shape. The poles usually run outside the tent fabric, which is attached to the poles by sleeves. In some new models clips are also used. Dome tents do not require guy ropes and pegs for structural integrity, but must be pegged down in high winds.
The basic dome design has been modified extensively, producing tents with three poles, tents with irregularly-shaped bases, and other unusual types. A common variation is to add a third pole going from corner to corner on one side; this is angled away from the tent, and supports an extended flysheet or outer tent to give a porch/storage area.

Tunnel tent

Tunnel tents may offer more usable internal space than a dome tent with the same ground area, but almost always need guy ropes and pegs to stay upright. These are almost always double wall tents. Sizes range from 1-person tents with very limited headroom up to 8 or 10-person tents with headroom exceeding 180 cm (6 ft.). Tunnel tents have a low-end profile making them great for high wind situations.
A basic tunnel tent uses three flexible poles, arranged as three parallel hoops, with tent fabric attached to form a tunnel. The most common designs have a sleeping area at one end and a porch/storage/living area at the other. Smaller designs may use only 2 poles and larger designs may use 4 poles; the latter may have a sleeping area at each end and a living area in the middle.

Hybrid dome/tunnel tents are now common. One variation is to use a basic dome as the sleeping area; one or two hooped poles to one side are linked by a tunnel to the dome to provide a porch. Another variation is to use a large dome as the living area, with up to 4 tunnel extensions to provide sleeping areas.
Geodesic tents are essentially dome tents with 2 or more extra poles which crisscross the normal two poles to help support the basic shape and minimize the amount of unsupported fabric. This makes them more suitable for use in snowy conditions. To help withstand strong winds they are rarely more than 120 or 150 cm high (4 to 5 ft.).
Single-hoop tents use just one flexible pole and are often sold as light-weight 1 or 2-person tents. These are the modern equivalent of older style pup tents, and have the same feature of somewhat limited headroom. Different styles may have the pole going either along or across the tent.

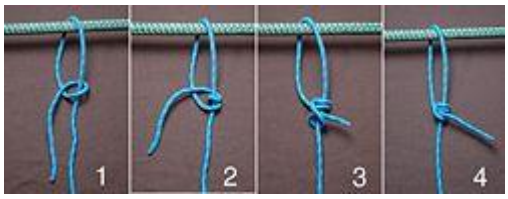
Older Tent Styles
Most of these tent styles are no longer generally available. Most of these are single-skin designs, with optional fly sheets for the ridge tents.
All the tents listed here had a canvas fabric and used a substantial number of guy ropes (8 to 18). The guys had to be positioned and tensioned precisely to pitch the tent correctly, so some training and experience were needed. This made these styles relatively unsuitable for casual or occasional campers. Pup tents might use wooden or metal poles, but all the other styles mentioned here used wooden poles.
A pup tent is a small version of a ridge tent intended for 2 or 3 people. It usually has a rectangular floor of size ranging from 4 ft. by 6 ft. up to 6 ft. by 8 ft., and ridge heights ranging from 3 ft. up to 5 ft. The side walls are usually about 1 ft. high. There are guy ropes for each pole, at each corner, and in the center of each side, and these guy ropes help to maintain the required shape. Earlier versions had a single upright pole at each end, while later versions often have two poles at each end, arranged rather like an 'A' shape, to make access easier. Some models have a horizontal ridge pole joining the tops of the end poles to support the center of the tent.
A ridge tent can sleep 5 to 8 people. They usually have a rectangular floor of size ranging from 8 ft. by 10 ft. up to 10 ft. by 16 ft., and ridge heights around 6 ft. to 7 ft. The side walls are usually about 3 ft. high. They normally have a single upright pole at each end with the tops joined by a horizontal ridge pole. Longer models might have an additional upright pole in the center to help support the ridge pole. They often have two guy ropes at each corner, and guy ropes every 2 ft. along the sides. If strong winds are expected, then two additional storm guy ropes are attached to the top of each pole.
A square center-pole tent was often used for family camping in the first half of the 20th century. Despite the use of 9 poles and 12 guy ropes, such a tent could be pitched by an (experienced) family of four in some 10 to 15 minutes. These tents had a square floor of size ranging from 8 by 8 ft. up to 15 by 15 ft. There were poles about 5 ft. high at each corner and in the middle of each side, and a 10 ft. or 12 ft. pole in the center - the walls were vertical and the roof was pyramid-shaped, so there was plenty of headroom over most of the tent.

A Sibley tent (bell tent) had a circular floor plan some 10 ft. to 15 ft. across, a single central pole some 10-ft. high, and walls about 3 ft. high. Guy ropes were connected every 2 ft. around the top of the walls - these had to carefully tensioned to hold the pole upright and keep the tent in shape.

9. How does condensation occur in tents, and how can it be prevented?

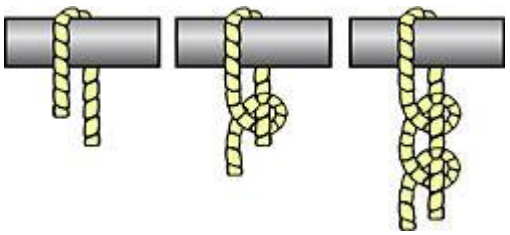
Each breath a person exhales contains water because of the moisture content of the lungs, throat, mouth and nasal cavity. This moisture rises until it meets a cool surface such as the inside of the tent, where it condenses.
A good tent will be made of breathable material that allows the moisture to pass through (such as a nylon mesh), and there will be a rain fly on the outside to keep rain out of the tent. Water vapor passes through the mesh and condenses on the fly. It then runs off the underside of the fly and drips off the edge outside the tent.

10. Demonstrate your ability to anchor a tent down, using the taut-line hitch and two half hitches.

Taut line hitch 

Use: The taut line hitch is an adjustable loop knot for use on lines under tension. It is useful when the length of a line will need to be periodically adjusted to maintain tension. It is made by tying a Rolling hitch around the standing part after passing around an anchor object. Tension is maintained by sliding the hitch to adjust size of the loop, thus changing the effective length of the standing part without retying the knot. It is typically used for securing tent lines in outdoor activities involving camping, by arborists when climbing trees, for creating adjustable moorings in tidal areas, and to secure loads on vehicles. A versatile knot, the Taut-line hitch was even used by astronauts during STS-82, the second Space Shuttle mission to repair the Hubble Space Telescope.

How to tie: Pass the working end around the anchor object. Bring it back alongside of the standing part and make a half-hitch around the standing part. Continue with another wrap inside the loop, effectively making a around turn around the standing part. Complete with a half-hitch outside the loop, made in the same direction as the first two wraps, as for a clove hitch. Dress by snuggling the hitch firmly around the standing part. Load slowly and adjust as necessary.



Two half hitches

Use: This reliable knot is quickly tied and is the hitch most often used in mooring.

How to tie: Pass end of rope around post or another object.

Wrap short end of rope under and over long part of rope, pushing the end down through the loop. This is a half hitch.

Repeat on long rope below first half hitch and draw up tight.

11. While camping, plan and give a ten-minute devotional or organize and lead a nature or Bible game or lead out in Sabbath School, camp church, or camp vespers.

This is your activity.

12. Properly locate and build one of the following and describe its importance to the individual and the environment:

You should take into consideration where your sleeping area(s) are in relation to these water-related areas. Specifically, water flows downhill, so, you do not want water runoff from the 'sink and dishwashing' or 'shower water' flowing to your sleeping area(s).

Also, the location of the 'latrine' should be considered depending on where you get your water source. For example, you do not want to put the 'latrine' upstream and take your shower and wash your dishes downstream. But pay attention! Just because your latrine is downstream and downhill from you does not mean it is downstream and downhill from other campers. Be considerate. A latrine should never be located within 60 meters of any water supply.

a. Camp sink and dishwashing area

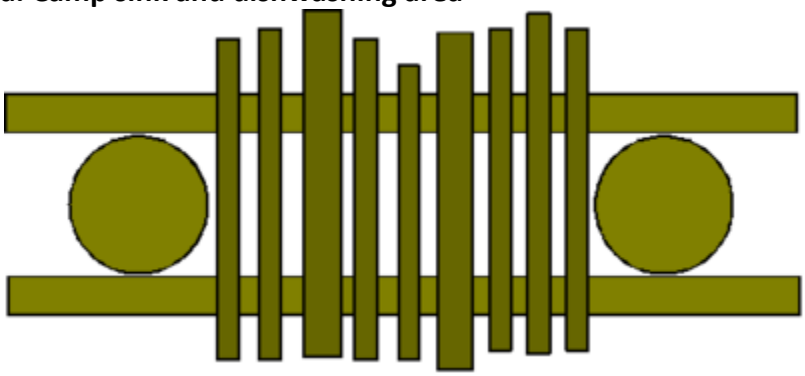


Table made from two trees, two poles, and several shorter spars

A camp sink need not be any more than a few large containers placed on a table. For the containers, you can use a large salad bowl or a plastic storage tub. The table to place them on can be constructed by finding two trees at least 20 cm in diameter and about 2 meters apart. Then using square lashing, attach two long poles to either side of the trees, at waist-height. Use continuous lashings to lash several shorter poles across the support poles to make the table surface. The short poles should all be as close to the same diameter as possible, or if that's impossible, arranged from smallest to largest.

b. Latrine

There are two components to a camping latrine: the "commode", and an enclosure.

Enclosure

The purpose of the enclosure is to provide privacy. It can be as simple as hanging tarps from rope stretched between trees and well-secured. You can also make a teepee from tarps and poles, or build a more elaborate structure from poles using lashings, and covering that with tarps. Another possibility is to use an old tent with its floor removed.

Commode

There are many ways to build the commode portion of a latrine. One common approach is to mount a toilet seat on some sort of structure, such as a small log cabin-like structure built using 3-inch (8 cm) diameter logs. It is also possible to build a structure from lumber fastened together with hinges so that it can be collapsed at will (but remain unclasped otherwise!) for transport. Another way to build the commode is by lashing poles together to make a couple of horizontal rails - one for sitting on, and another as a back rest. However, the commode is built, it is almost always situated over a hole dug in the ground to hold the waste. The depth of this hole depends on how much usage the latrine is expected to accommodate. Leave the dirt pile and a shovel inside the enclosure so that the waste may be gradually buried as it is created. This will hold down the smell. Be sure to completely bury the hole when breaking camp.

c. Shower

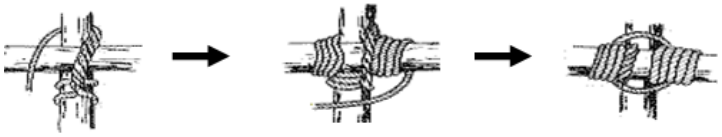
Most outdoor outfitters carry camp showers, but the trick is setting up a showering area that will provide clean feet and privacy.

Clean feet can be had by building a platform like the table shown above, except that it need not be lashed to any trees - it can simply lie on the ground. If you do not build a platform, you will create a mud hole when you shower, and then everything will be clean except your feet. Somehow the mud on the feet have a way of migrating elsewhere too, rendering the whole showering experience an exercise in futility. Don't scrimp on the rope when attaching the spars to the poles - the platform must be secure and stable, and the spars must not roll around. Lash them down securely.

For privacy, you can bring a tarp, and string up an enclosure using trees for support. Make the enclosure large enough to hold a chair so the freshly cleaned Pathfinder can remain freshly clean as he/she dries off, gets dressed, and puts on his/her shoes.

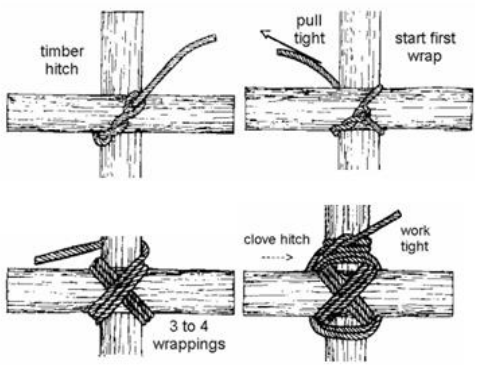
13. Demonstrate four basic lashings and construct a simple object using these lashings.

Square Lashing



The square lashing to fasten two spars or poles together.
Make a Clove Hitch on the vertical stick or dowel near the point where the two sticks cross. This fastens the rope to the stick. Weave the rope under and over the crossed sticks alternately. To do this, run the rope over the horizontal bar, around behind the vertical bar, then back over the face of the horizontal bar on the left. Tighten snugly, then bring the rope behind the vertical bar and up the right front side of the horizontal bar. Repeat these three or four times, keeping the rope tight.
When you have finished weaving the lashing, then "FRAP" it by wrapping the rope between the poles (in front of the back stick and behind the front stick), pulling tightly. This tightens the connected poles. Finish your lashing with another Clove Hitch

Diagonal Lashing

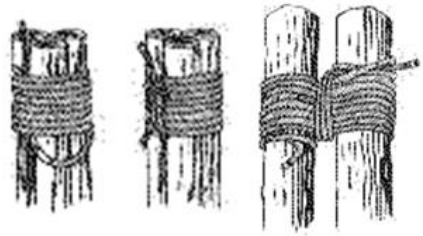


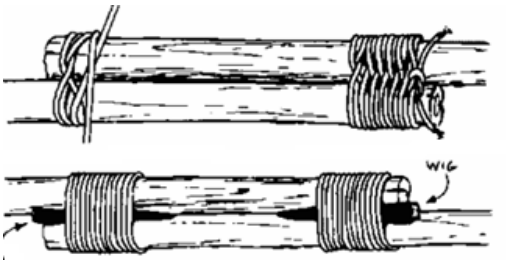
Diagonal lashing is used to bind poles together that cross each other but do not touch when their ends are lashed in place in a structure.
The diagonal lashing gets its name from the fact that the wrapping turns cross the poles diagonally. The diagonal lashing can be used to bind poles that cross each other from 90o to 45o. If the angle between the poles is less than 45o a shear lashing should be used.
The diagonal lashing makes use of the timber hitch to pull poles together that are not touching each other.
The timber hitch allows the poles to be drawn together without changing the relative positions of the poles. [NOTE] If a square lashing were used to bind poles that do not touch, the beginning clove hitch would pull the cross pole toward the clove hitch causing unnecessary bowing of the cross pole and could also produce a force that would act along the length of the pole to which the clove hitch is tied. These additional forces, if strong enough, can place unnecessary strain on other lashing within the structure causing the structure to twist and fail.

Tie a timber hitch diagonally around both poles.
Start the wrapping turns on the opposite diagonal to the timber hitch, by pulling the rope tight so that the poles contact each other.

Take 3 to 4 wrapping turns; keep the wrapping turns parallel; pull each wrapping turn tight. [NOTE] If the wrapping turns can cross, the increased friction between the strands of the rope will make it difficult to tighten the wrapping turns.
Start the second set of wrapping turns by going past and around the vertical pole. [NOTE] Going around the pole the rope allows the direction of the rope to be changed without crossing the first set of wrapping diagonally.
Take 3 to 4 wrapping turns; be sure to keep the wrapping turns parallel; pull each wrapping turn tight.
Start the frapping turns by going past and around one of the poles. [NOTE] Going around the pole with the rope allows the direction of the rope to be changed without crossing the wrapping turns diagonally.
Take 2 to 3 frapping turns; keep the frapping turns parallel. Be sure to pull each turn tight.
End the lashing with a clove hitch. Take the first half hitch of the clove hitch. by going past and then around one of the poles. Lock the half hitch tight against the lashing by working it tight.
Take a second half hitch around the pole.
Work the second half hitch tight against the first half hitch so that the clove hitch is locked against the lashing.
Note: If very smooth rope is used, the lashing can be made more secure by adding a third or fourth half hitch to the clove hitch.

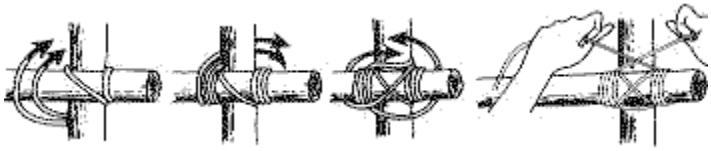
Round Lashing





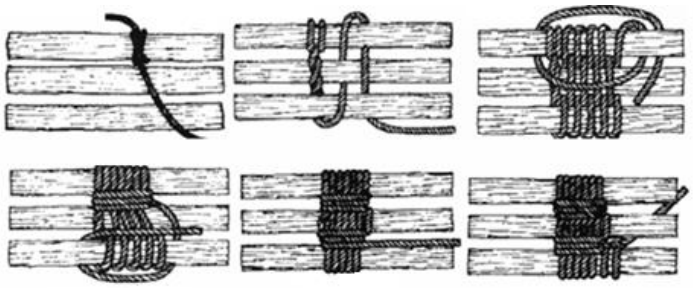
Used to lash two poles together (constructing a flagpole). Tie a clove hitch around the bottom pole. Wind the rope around both six or seven times. Finish with two half hitches around both poles. The lashing can be tightened by driving a small wooden peg between the poles. If possible force a wedge under the lashings to make them tight. If the spars are vertical, bang the wedge in downwards.

Japanese square lashing



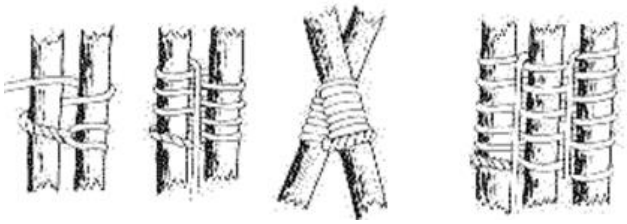
A lashing used in lightweight construction work. It is equivalent to a square lashing and when done correctly should be just as strong. End the lashing with a square knot.

Tripod Lashing



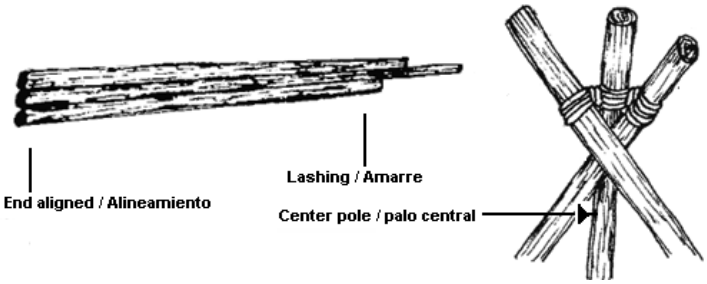
Lash used to bind three poles together, for the construction of a tripod. To bind three poles together that contact at the same point in a structure.

The tripod lashing is a shear lashing that binds three poles together at the same point. The tripod lashing gets its name from the fact that its most common use is the construction of a tripod. The tripod lashing can be used just about anywhere in a structure that three poles cross each other at the same point and the same time in the sequence of construction. Tripod lashing takes two main forms; with racked wrapping turns (the rope is woven between the poles) and with plain wrapping turns (the rope is wrapped around the poles without weaving the rope between the poles). When the lashing is made with racking turns the rope contacts each pole around its entire circumference; this contact makes the tripod lashing with racking turns the most secure form of tripod lashing: therefore, tripod lashing with racking turns should be used when safety is important. However, for light structures where there would be no danger if the lashing slipped, the faster to tie tripod lashing with plain wrapping turns may be used.



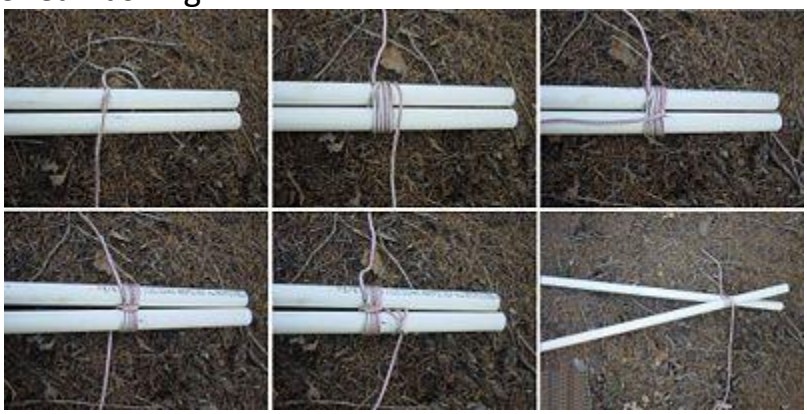
Laying Out the Poles

For most tripod lashings, lay the pole side by side with the butt ends aligned. The alignment of the butts of the pole insures that the tripod legs are the desired length



The practice of laying the center pole in the opposite direction to the outside poles creates several problems. When the poles are laid in opposite directions the wrappings must be put on loosely so that when the center pole is rotated to its proper position the lashing is tightened around the poles. If the wrappings are put on too tight, the rope is stretched causing damage to the rope fibers, therefore weakening the lashing. On the other hand, if the rope is wrapped two loosely, the lashing will not tighten enough when the center pole is rotated and the lashing will be able to slip along the length of the pole. Either way, the rope to lose or the rope too tight, a dangerous situation is created.
Setting Up a Tripod - Set up the tripod by crossing the outside poles so that the cross point of the poles is under the center pole. Crossing the outside poles under the center pole causes part of the load that is placed on the tripod to be taken up by the wood to wood contact of the poles.

Shear lashing



A sheer lashing is often used to bind adjacent poles together. It is also a good way to reinforce a broken or weak pole. The frapping turns used to tighten the lashing may be omitted and replaced with wedges inserted between the poles.
A loose Sheer Lashing made around the ends of two poles will allow the poles to be opened out and used as an A-frame. It can also be used to form a tripod just like the Figure-of-eight lashing. Lay out the poles. For most lashings, you will want to lay the poles side by side with the butt ends aligned (thicker ends).

Tie a clove hitch around one of the outside poles and secure the standing part by wrapping it around the running part (or trap it under the first turns).

Note: If you only lashing two poles together it may be better to simply tie the clove hitch around both poles and pull tight.

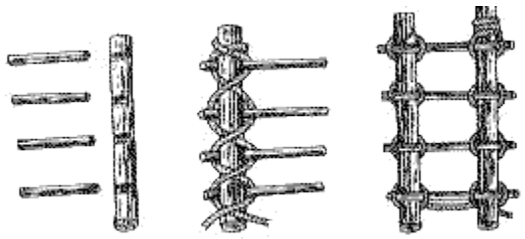
Pass the rope around the poles to form a first turn.
Pulling each turn tight made a series of turns until the lashing is at least if the combined diameters of the two poles (usually a set of 4 to 6 turns will be sufficient).
Tighten the lashing with a frapping turn by taking the rope down between two poles at one end of the turns. This should be difficult to do if the turns have been pulled tightly (as they should be). Bring the rope back up between the poles at the other end of the lashing and pull tight.
Repeat 2 or 3 times.
Start the second set of frapping turns by taking the rope around the center pole and frapping.
Take the second set of frapping turns in the opposite direction to the first set.
Repeat for any additional poles.

Pass the rope once more between the poles then around one pole and tuck it under itself to form a half hitch. Pull this tight and make a second half hitch forming a clove hitch by taking the rope around the same pole and tucking it under itself.

Notes on A-Frame Lashing:
An A-frame lashing or Sheer Legs is made in the same way as a Sheer Lashing with the lashing and frapping turns made slightly loose so that the poles can be opened out. It is often used to raise a boat mast or to form the legs of a rope bridge. You must take care to ensure that the legs of the frame do not slip.
Notes on Tripods:
Make a tripod by using a Figure-of-eight lashing on three poles. Set up the tripod by crossing the outside poles so that the cross point of the poles is under the center pole. This makes sure that part of the load is taken by the wood in contact. If a symmetrical arrangement of the poles is needed within a structure the tripod can be set up by rotating the poles around the lashing. This means that the load is supported only by the ropes and the joint becomes flexible and so the tripod may become

Continued lashing

Used to tied various sticks to a pole used as a base to conform the construction of tables. Start with a clove hitch at the pole used as the base. Tied the rope over and around each stick forming an X, end the lashing with a clove hitch to the pole used as the base.



14. Know how to replace the mantels on a camp lantern. Demonstrate how to refill gas in a camp lantern and stove. Know how to maintain the pressure pump on a camp stove in good working order.

A. Know how to replace the mantels on a camp lantern

1. Turn OFF the gas valve completely.
2. Remove the lantern glass covering.
3. Remove any remains of the old mantel (Do this carefully if the lantern is still HOT).
4. Tie the new mantel in place on the gas pipe. There is a string around the collar that slips over the gas pipe.
5. Replace the glass cover and the lantern cover.

B. **Demonstrate how to refill gas in a camp lantern and stove**

1. Add fuel to the tank
2. Pressurize the gas tank.
3. Hold a lighted match near the mantel and slowly turn on the gas valve. The mantel should begin to burn.
4. Open the gas valve completely when the mantel starts to glow brightly.

C. Know how to maintain the pressure pump on a camp stove in good working order.

In many stoves, the priming pressure is generated by a small hand pump that forces air into the fuel container. As the fuel is consumed, the pressure decreases per Boyle's Law, so the pump must be operated occasionally during use to maintain steady stove operation.