

Knot Master Program



Knots are a skill taught at every level of scouting. The Knot Master Program is designed to provide each scout an opportunity to learn essential knots as well as other fun and useful knots that you will use for the rest of your life. In addition to learning the knots, each scout is awarded with a five foot piece of white rope. This is just the start of the adventure.

After completing Level One, the scout is awarded with a carabineer and taught a special method for tying the five-foot piece of rope to the carabineer (the 'carry' knot). This allows the scout to carry the rope at all scout functions, and display his success in completing Level One. In addition, it provides one more element of the Boy Scout motto "Be Prepared", for there are countless uses for a five-foot piece of rope. Having tied a knot as part of your rank advancement doesn't count in the Knot Master Program. You must demonstrate that you still know it.

From here the Scout can continue to progress through the remaining four levels of the program. Upon completion of each level the scout is awarded with a different color of rope, Green, Blue, Red and finally Black. Upon obtaining the coveted Black rope, the scout is declared a true "Knot Master".

But in truth, the highest level of Knot Master can only be earned upon reaching the rank of Eagle Scout. At that point the Scout can wear the red, white and blue square knot over the left pocket of his Scout uniform for the rest of his life, as a symbol to all of his commitment and dedication to the ideals of Scouting.

Enjoy your knot tying adventure.

"Every Scout should be able to tie a knot. To tie a knot seems to be a simple thing, and yet there are right and wrong ways of doing it, and Scouts ought to know the right way. Very often it may happen that lives depend on a knot being properly tied."

"The right kind of knot to tie is one that you can be certain will hold under any amount of strain, and which you can always undo easily if you wish to. A bad knot is one which slips away when a hard pull comes on it, or which gets jammed so tight that you cannot untie it."

Lord Baden-Powell

Definitions common to ropes and knots

Rope – A large stout cord usually made of strands of fibers (or yarns) twisted or braided together.

Strand – Usually one of three or four individual cords (made of twisted yarns which are made out of fibers) that are twisted together to make a rope.

Standing part – This is the part of the rope that is generally not used in knot tying, either because it is fastened to another rope or spar, or because it is too long to be used conveniently.

Tag end – The running or working end of a rope. This is the part that you whip, splice or use to tie the knots or hitches

Knot – a combination of bights, bends and hitches.

Bight – This is the part of a rope that is doubled back on itself, or crossed over to make a loop.

Bend – A knot for fastening two ropes together.

Hitch – A temporary knot. Generally the knot which fastens a rope to something stiff, such as a spar or ring.

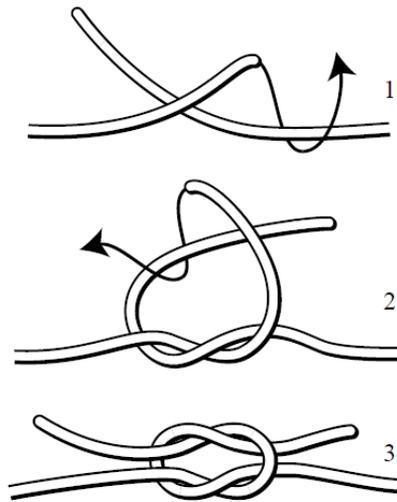
Eye – The opening in the center of a loop or bight.

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Level One – White Rope

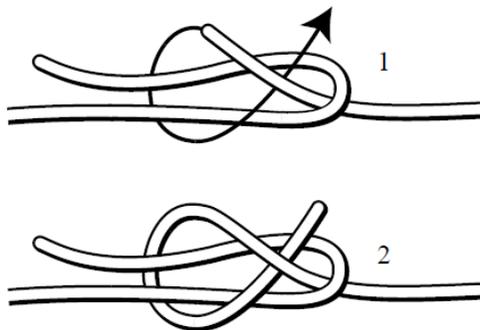
This level introduces six basic Boy Scout knots, a couple variations on those knots, and a few others you typically learn as you advance to First Class. These knots are commonly used throughout Scouting and you'll use them the rest of your life. In addition, the techniques you use to tie several of these knots serve as the foundation for future knots and lashings.

Square Knot



The Square Knot (also known as the Reef Knot or Joining Knot) is a common and simple binding knot. It is easily used to connect two ropes of equal size. You can loosen the square knot easily by either pushing the ends toward the knot or by “upsetting” the knot by pulling back on one end and pulling the other through the loops.

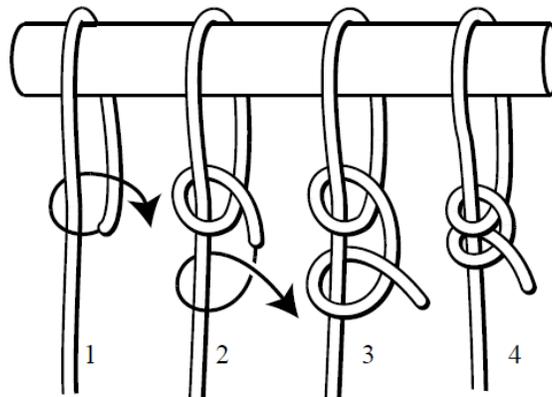
Sheet Bend



The Sheet Bend is an important knot for joining two rope ends, especially if the ropes are of different sizes. Sailors named it in the days of sailing ships when they would “bend” (tie) the “sheets” (ropes attached to the clew of the sail).

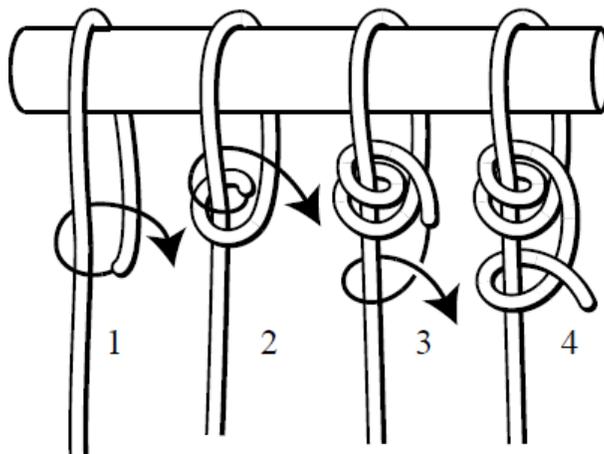
Begin with a bight in the larger rope. Bending the rope in a “U” shape is called a bight. Then weave the end of the smaller rope up through the eye, around the bight, and back under itself. Snug it carefully before applying any strain to the knot. The Sheet Bend can also be doubled or tripled by looping the smaller rope two or three times before completing the knot.

Two Half Hitches



This is a reliable and useful knot for attaching a rope to a pole or boat mooring. A single Half Hitch serves as the basis of many other knots. As the name suggests, this knot is just two Half Hitches, one after the other. The only “trick” to tying the Two Half Hitches is to go through the loop and over the rope as shown, and always keep the rope looping in the same direction. To finish, push them together and snug them by pulling on the standing part. A variation on this knot is to wrap the line around the pole twice (called a round turn) before tying the Two Half Hitches.

Taut Line Hitch

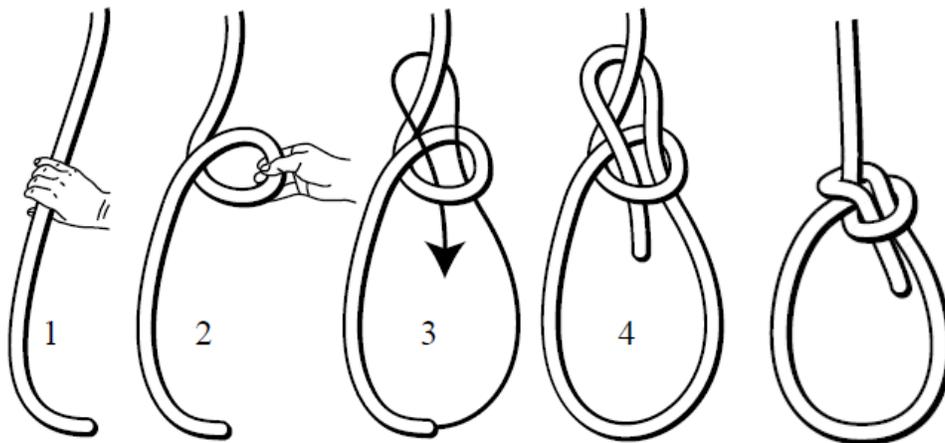


The Taut Line Hitch is an adjustable loop knot for use on lines under tension. It is useful when the length of a line will need to be periodically adjusted in order to maintain

tension. It is very similar to the Two Half Hitches except that before tying the second hitch the rope is wrapped a second time around the standing part (step 2 in the picture). Tension is maintained by sliding the hitch to adjust the size of the loop. It is typically used for securing tent lines or pulling a tarp tight.

The Two Half Hitches is a knot that will always slide down the standing part of the rope to the pole. So you might as well slide it down when you tighten the knot. Wrapping the rope a second turn around the standing part before tying the second hitch is what keeps the Taut Line Hitch from sliding like the Two Half Hitches.

Bowline



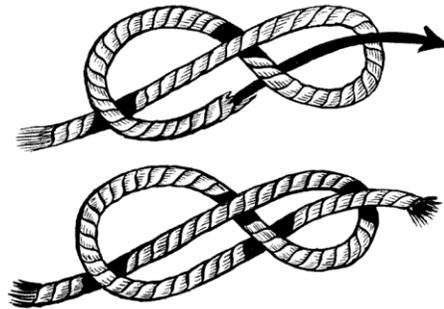
The Bowline has been called the “king of knots”. It will never slip or jam if properly made and, thus, is excellent for tying around a person in a rescue. Begin by forming an overhand loop, or eye in the standing part. The way you form the loop matters. Look at the picture, grab the line using your right hand with the back of your hand up and roll your hand over to face palm up. This simple trick will always work! Take the tag end up through the eye, around behind the standing part, and back through the eye where it came from. Tighten as shown in the last picture. There are many different ways to tie a Bowline. Try tying one around your waist using only one hand.

Bowline on a Bight



The Bowline on a Bight forms two loops, but they must be of the same size. Start by making a good sized bight (creating the double rope in the picture) and an overhand loop or eye just like you do for a regular Bowline. Bring the end loop up through the eye and then bring it down around the entire knot. Set the knot (tighten) before putting any weight on it.

Figure-Eight Knot



The Figure-Eight Knot is very important in both sailing and rock climbing as a method of stopping ropes from running out of retaining devices. It creates a bulkier end on the rope than just an overhand knot.

Carrick Bend

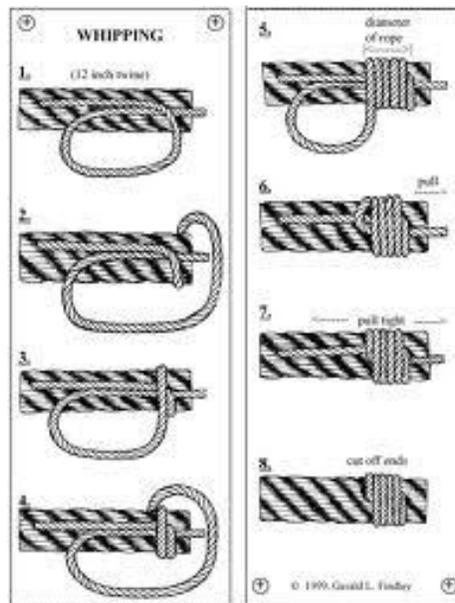


The Carrick Bend is used to join two heavy lines together. It's basically two back-to-back sheet bends. After forming the Carrick Bend the tag end or each rope is usually tied or whipped to the standing part of the same rope to help make sure it won't come undone. The Carrick Bend is not used often for joining lines anymore but it does serve as the foundation for many decorative knots. Remember this later!

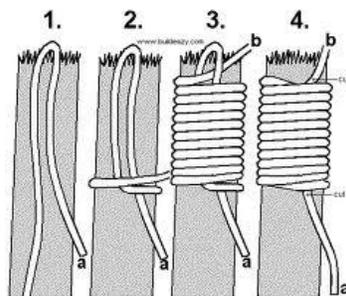
Whipping a Rope

Whipping the end of a rope prevents it from separating or fraying. Once learned it's very easy to tie but it seems to be one of the first things a Scout forgets when it comes to tying knots or caring for a rope. There are several different ways to whip the end of a rope, including some pretty fancy ones used by sailors. The following illustrations show the "loop" method and the "bight" method. Try them both and you will get a better idea of how and why they work. Take your pick, or learn them both, they each work just as well. Which one is your favorite?

Loop Method



Bight Method



Cleat Hitch

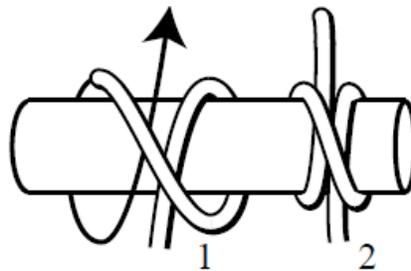
The cleat hitch is a simple knot that's very useful. Aside from mooring boats next to a dock you should use the cleat hitch whenever raising a flag. Basically the tension pulling on the standing part of the rope and cleat, looped over the top of the tag end, holds the hitch secure.



Level Two – Green Rope

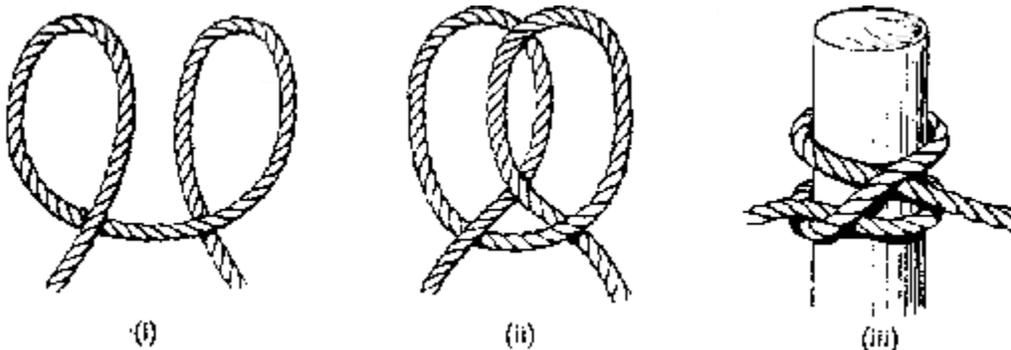
Level Two consists of a combination of two knots (or hitches), all five lashings and the three basic splices. The lashings are essential for pioneering activities and to create camp gadgets, tripods, flag poles, towers, and bridges. Pioneering is a First Class skill that gives you a chance to be an engineer and build something. When you're working with wood there are really only three basic ways to hold two pieces together; penetrating through both pieces with a nail, bolt or peg; joinery (cutting the pieces to fit and lock together like the ends of a log cabin); and tying them together (lashing).

Clove Hitch



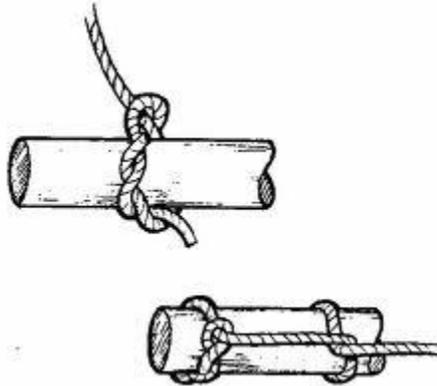
The Clove Hitch (along with the Bowline and the Sheet Bend) is often considered one of the most essential knots. It consists of two identical half hitches made successively around an object. It is most effective as a crossing knot. Although it can be used as a binding knot, it is not particularly secure in that role. Because it passes around an object in only one direction it puts very little strain on the rope fibers. Another way to tie a clove hitch is shown below.

Clove Hitch on a Bight



Tying the Clove Hitch on a Bight is useful when you need the hitch and you're not using the end of the rope. This is the nearest there is to a general utility hitch. It is easy to tie in a number of different ways, and to untie. It has a wide variety of uses including holding the top of a sack closed.

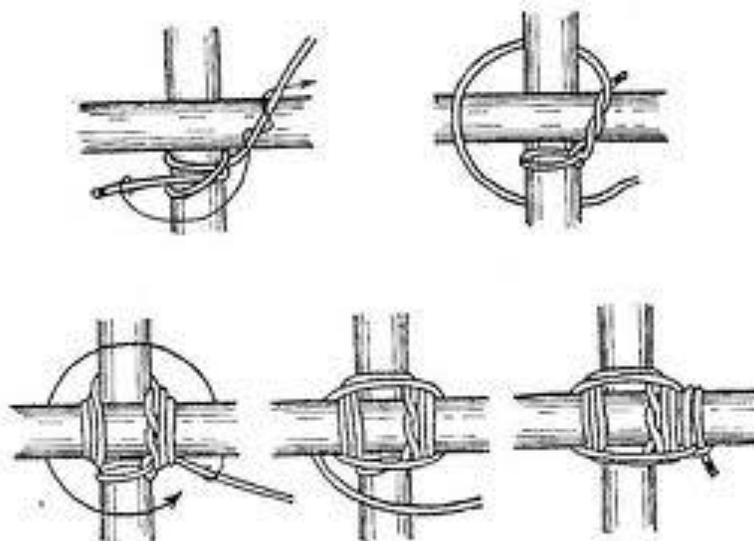
Timber Hitch



The Timber Hitch is a knot used to attach a single length of rope to a piece of wood. This is an important hitch, especially for dragging a heavy object like a log. It will hold firmly so long as there is a steady pull, slacking and jerking may loosen it. The Timber Hitch is also useful in pioneering when attaching or pulling two timbers together. When it is used for dragging, a Half Hitch should be tied near the front end of the object to help guide it (bottom picture).

To make the knot, pass the rope completely around the wood. Pass the tag end around the standing part, then through the loop that you have just formed. Make three turns around the loop and then pull the standing part to tighten. Take care that you double the rope back on itself before making the three turns or it won't hold. Three turns are recommended for natural ropes such as jute, hemp, sisal or manila. Five turns are recommended for synthetic ropes like nylon or polypropylene.

Square Lashing



A Square Lashing is used to hold two poles together that cross each other (usually, although not always, at a 90-degree angle). A Square Lashing is used on poles that touch each other. A Clove Hitch is tied on a single pole to begin the lashing. Position the standing part of the Clove Hitch so that the pull of the first lashing is “in-line” with the hitch. You can also twist the tag end of the Clove Hitch as shown in the picture. This will help prevent the Clove Hitch from loosening.

Wrap or lash under and over the two poles three to four times to hold the poles together. Next wrap two or three times around and between the two poles. These are the “frapping” turns and are used to tighten up the lashing. Finish with a Clove Hitch, usually tied on a different pole than the starting Clove Hitch.

Diagonal Lashing

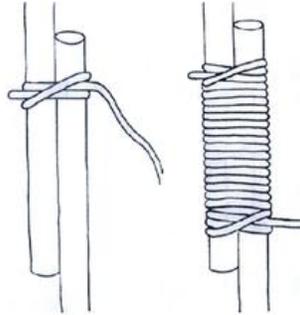


A Diagonal Lashing is used to bind two poles together that cross each other but do not touch (or are likely to be pulled apart) when their ends are lashed in place in a structure (like a trestle). Often used for securing diagonal braces used to hold a structure rigid. The Diagonal Lash is started with a Timber Hitch to pull the two poles together and finished with a Clove Hitch. The lashes form an “X” over the two poles. Naturally, the frapping turns should be tighter than those shown in the picture.

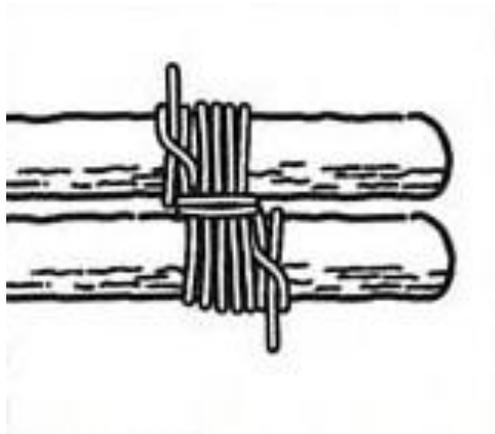
Round Lashing

Round Lashing is primarily used to make one longer pole out of two or three shorter poles. Round Lashing can also be used to strengthen or reinforce a weak or broken pole by securing a support pole next to the weakened area. Note that Round Lashing does not use frapping turns to tighten the lashing, so the lashing turns must be tight from the beginning. Two Round Lashings are usually required to prevent the poles from “scissoring”. Round Lashing relies on the friction between the two poles secured side by side, as well as the tightness of the rope and the length or number of wraps for strength.

Round Lashings begin and end with a Clove Hitch around both poles together. Although the drawing does not show this well, the Clove Hitch should be tied with the knot portion over one of the two poles, not over the space in the center of the two poles, otherwise it may come loose.



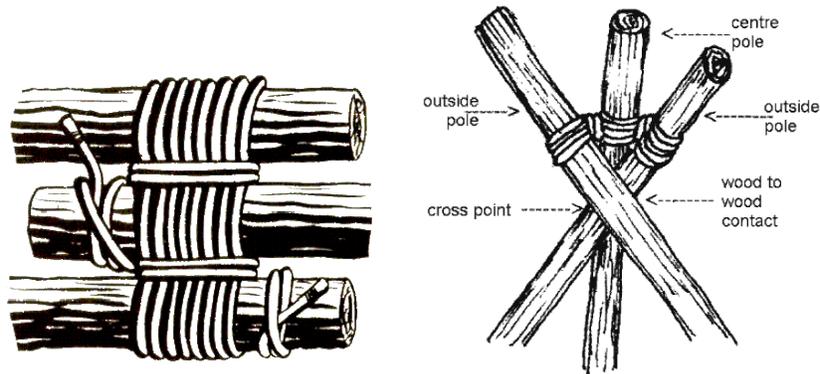
Shear Lashing



A Shear Lashing is similar to a Tripod Lashing but only uses two poles. The Shear Lashing begins and ends with a Clove Hitch tied on a single pole. Unlike the Round Lashing, you must maintain a space between the two poles when taking the lashing turns so that there will be space for the frapping turns. The frapping turns are used to tighten the lashing. The number of turns taken around the two poles depends on the size of the poles and the rope you're using, but generally four or five wraps will do. Too many and it will become hard to open the poles. Two to three frapping turns are generally enough to tighten the wraps.

A Shear Lashing made near the end of two poles will allow the poles to be opened out and used as an "A" frame to hold up a tent or tarp. Place it further down the poles to form an "X" frame that could be used at each end of a monkey bridge.

Tripod Lashing



The Tripod Lashing is a Shear Lashing that binds three poles together at the same point. 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. The picture on the left shows the center pole with the long end opposite the two outer poles. This is OK but it puts less strain on the rope if all three poles are laid out in the same direction.

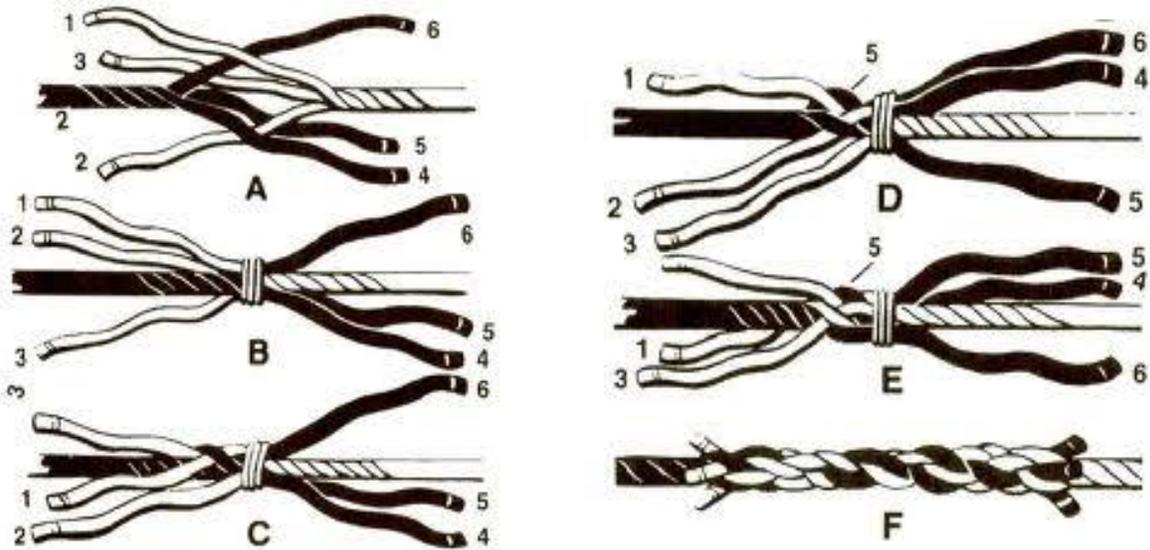
Tripod Lashing takes two main forms; with racked wrapping turns (the rope is woven between the poles) and with plain wrapping turns (the rope is wrapped around the poles without weaving the rope between the poles). When the lashing is made with racking turns the rope contacts each pole around its entire circumference, making the Tripod Lashing with racking turns the most secure form of Tripod Lashing. A Tripod Lashing with racking turns should be used when safety is important, like hanging a heavy Dutch Oven over a fire. However, for light structures where there would be no danger if the lashing slipped, the faster to tie, plain wrapping turns may be used.

Short Splice

Splicing a rope is an alternative way to join two pieces of rope (instead of using a knot), form a loop or prevent the end of a rope from unraveling. Splicing requires a three or four stranded rope. Splicing relies on the twist or set of a rope, as well as friction, for its strength. A well made splice will generally test higher for strength than a knot.

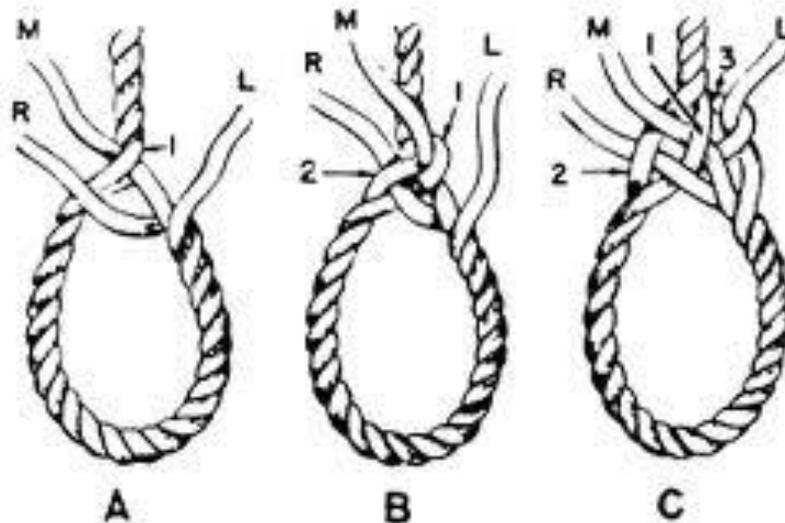
Splicing is basically weaving one piece of rope back into itself or another piece. This is done by un-twisting one of the ropes to separate the strands and form a "loop" that you can pass a strand from the other rope through. Then you pull the strand tight and re-twist the rope. After going under one strand, you go over the next strand, and under the one after that. You do the same thing with all three strands of both ropes, and in both directions (for the Short Splice). Make sure that two strands next to each other don't go under or over the same strand on the other rope. The weaving process is repeated until you have gone back against the rope a minimum of three times, more is better, but more than five or six is a waste of time.

There are a couple of ways to finish a splice. One is just to stop the splice, leaving the ends exposed, whip them or cut them off short. Be careful not to cut them off so short that they come un-tucked. Another way is to cut out about half the thickness of each strand after you've completed three weaves. Continue to weave the half strand through another weave. This gives a tapered finish to the final splice.



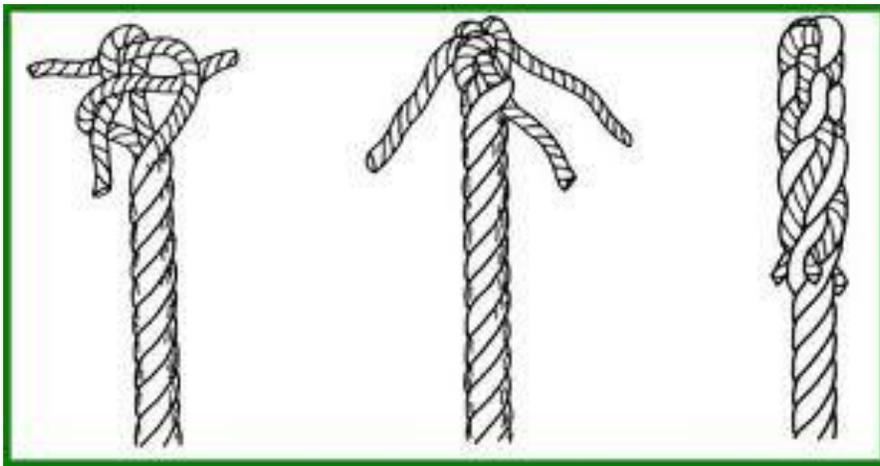
Until you learn to splice, tying the two ropes together temporarily as shown in the illustration (just to hold them together while you're working) will make the whole process much easier. After completing one or two weaves back against both ropes remove the tie and pull each strand tight.

Eye Splice



The Eye Splice is used to form a loop at the end of a rope without tying a knot. To begin the Eye Splice unravel enough of the tag end of the rope for the splice and bend the rope back on itself (the standing part) to create an eye of the size you want. Untwist the rope in this location and begin the weaving process described for the Short Splice. In the picture above, the strands in the tag end are identified by capital letters L, M, R (think of them as Left, Middle, Right even though the L and R are on the wrong side) and the loops on the standing part are numbered 1, 2, 3. It's easier to complete the tuck shown in part "C" of the picture if you flip the whole thing over to the "back side". Complete a minimum of three to four weaves and finish off.

Back Splice



The Back Splice is also known as the End Splice. Its purpose is to prevent the rope from fraying but it makes the spliced end thicker than the original rope. For this reason the Back Splice is not used frequently. Whipping the end of a rope accomplishes the same thing and is quicker. However, if you don't have a small piece of twine handy, or thickness at the end of the rope is not a problem, the Back Splice is very effective.

Tying the Back Splice begins with tying a Crown Knot (shown on the left side of the picture above). The Crown Knot secures the end of the rope and directs the three strands back against the rope. Unravel enough rope to make the splice and tie a Crown Knot. Weave the strands of the rope back against itself as described for the Short Splice. Complete three weaves and finish off. A tapered finish is a better choice for a Back Splice than just cutting the strands off.

Creating a neat splice will be difficult at first, but splicing is really not that hard. Always remember, "Practice makes Perfect"!

Level Three – Blue Rope

Level Three consists of a combination of six fishing knots that work well in monofilament fishing line, two climbing knots and two knots used to secure heavy loads.

Monofilament fishing line is made from various plastics and is prone to slipping.

Regular knots used on a multi-stranded ropes do not hold well in monofilament so fishermen have developed ways to handle this problem. Take special note of the comments on line size, number of turns and always remember to wet the knot (with saliva) before drawing it tight.

The instructions for tying knots use some general terms and you will see them used for the fishing knots as well. Something to realize with fishing knots is that you work with only one end of the line. The “standing part” refers to the long portion of line that goes to the fishing reel. As before, the “tag end” is just that, the end of the line.

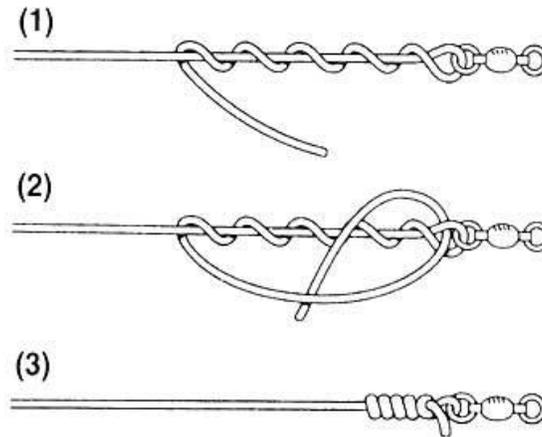
Fishermen often use a short, heavier (stronger) piece of monofilament called a leader at the end of the regular line to prevent a fish from biting through it. Other times a loop is used to tie on a lure so it moves more freely. When you start learning fishing knots you will find that there are dozens, even hundreds, of special purpose fishing knots!

When you tighten a knot tied with monofilament you typically only pull on one end (usually the standing part) and let the knot slip until it tightens up completely. At that point you can trim the tag end close to the knot. Fishermen often use a pair of common nail clippers to trim the tag end close. You need to be careful tightening fishing knots for two reasons. Monofilament can easily cut your skin. Also, more importantly, when you’re tying on a hook or a lure there’s a sharp, barbed point that doesn’t pull out of skin very easily if you get stuck with it. It’s always best to hold a hook with a pair of pliers (needle nose pliers work best) when you’re tightening the knot.

The last four knots can prove useful in various situations. The two loop knots allow you to tie a secure knot in the middle of a rope without using the ends. The two packing knots have been used to tie camping and prospecting equipment to the back of a mule or onto a pack frame, or to tie down a canoe to the top of a car.

Improved Clinch Knot

The Improved Clinch Knot is the most common way to attach a hook or swivel to monofilament. All fishing knots have to be drawn up tight to prevent them from slipping or coming undone. There’s nothing worse than after losing a fish to see a tight little curlicue of line at the tag end indicating that your knot slipped loose. Unfortunately I know this feeling from first-hand experience!

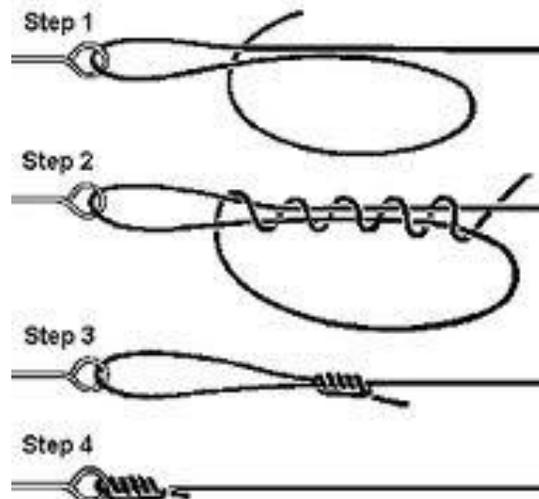


The Improved Clinch Knot is a little more difficult to tie in monofilament line in excess of 30 lb test. Five turns around the standing part are generally recommended.

Thread the tag end of the line through the eye of the hook, swivel or lure. Double back and make five or more turns around the standing part (picture 1). Bring the tag end back through the first loop formed behind the eye, and then through the big loop as shown in picture 2.

Wet the knot and pull slightly on the tag end to take up some of the slack. Pull on the standing part to form the knot with the coils all pressed neatly together. Keep pulling until the coils are pressed tight against the eye (picture 3). Clip of the tag end.

Uni Knot



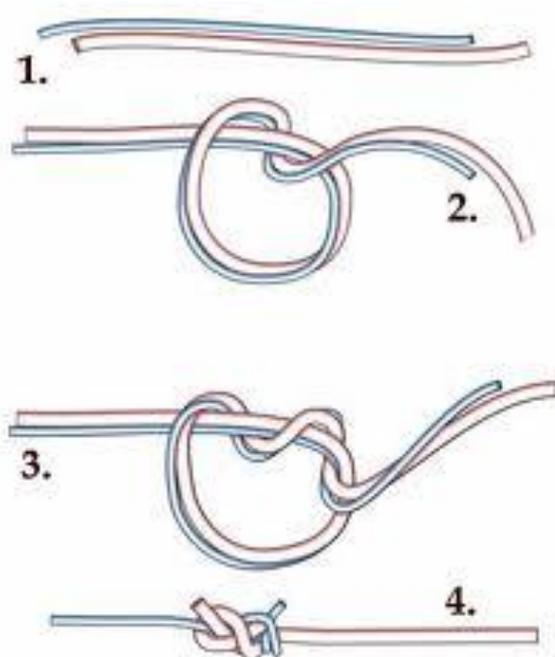
The Uni Knot is a good alternative to the Improved Clinch Knot. It's very reliable and easy to tie. This is a good knot to use when it's getting dark and you can't see as well.

Run the tag end through the eye of a hook or lure and double back parallel to the standing line. Make a loop by laying the tag end over the double line (step 1). Make six turns with the tag end around the double line and through the loop (step 2).

Moisten the lines and pull the tag end to snug up the turns (step 3). Slide the knot down tight to the eye (step 4). You can also leave a small loop if desired for better movement if you're using a lure. The loop will slip tight as soon as you set the hook.

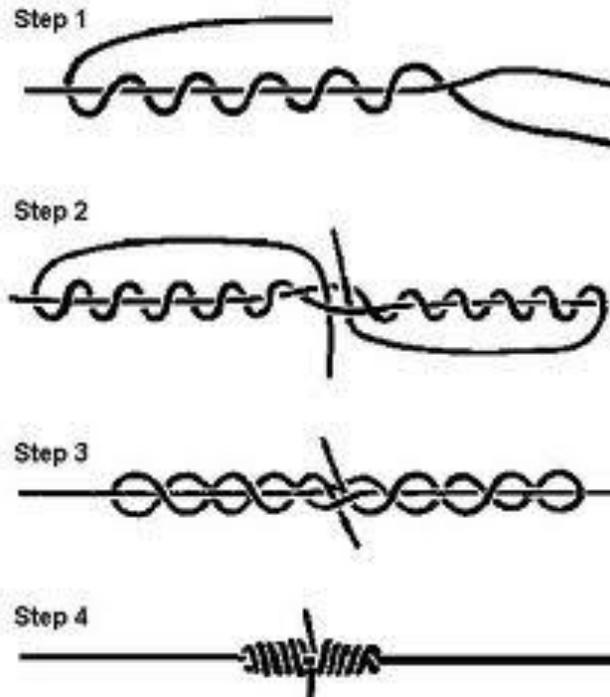
Surgeons Knot

The Surgeons Knot is one of the quickest and strongest knots for joining leader to line with unequal diameters. Don't get confused when looking at the drawings of this simple knot. The drawings do not show the full leader length. Just remember to pass the tag end of the line and the entire leader through the loop twice. Moisten the lines and pull all four ends tight.



Blood Knot

Use this knot to tie sections of leader or line together. It works best with lines of approximately equal diameter. Another words, don't use this knot to tie a 30 lb test leader to a 10 lb test line. Use the Surgeons Knot instead.



Overlap the two tag ends of the lines to be joined. Twist one around the other (it doesn't matter which one you start with) making five turns. Bring the tag end back between the two lines. Repeat with the other tag end, wrapping in the opposite direction the same number of turns. Bring the second tag end back through what is now a loop between the two lines. Make sure to bring it through in the opposite direction you used with the first line.

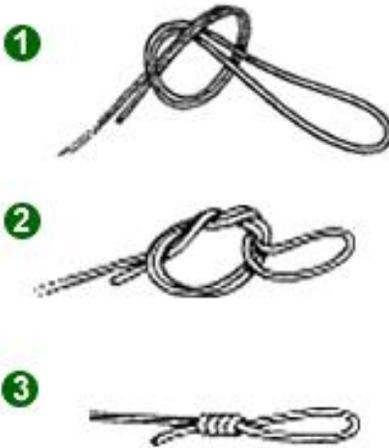
Moisten the lines and slowly pull both standing ends apart. The turns will tighten, gather together, and slide next to each other. Pull tight and clip off the tag ends closely.

Surgeons End Loop

The Surgeons End Loop is used to form a loop at the end of a line. The loop will let you quickly attach and remove a leader that has been tied with another loop. You can also use it to attach terminal tackle like a lure or swivel by pinching the loop together, sliding it through the eye, pulling out enough slack to get the loop over the lure, and tightening it back up by pulling on the standing part to draw the loop down on the eye.

This loop is easy to tie and reliable. Begin by forming a large bight to double the line. Tie a loose overhand knot. Pass the end of the loop through the overhand knot again to double it. You can even triple it but this is usually not needed.

Moisten the lines and tighten by holding the loop and pulling on the standing part. Clip off the tag end close to the knot.

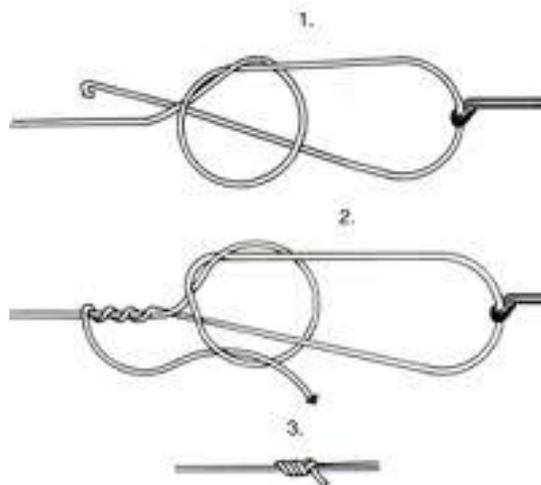


Non-Slip Mono Loop Knot

This is a great knot to use when you want to tie on a lure with a loop to give it better motion. Unlike using the Uni Knot to form a loop, this knot remains tight and won't slip.

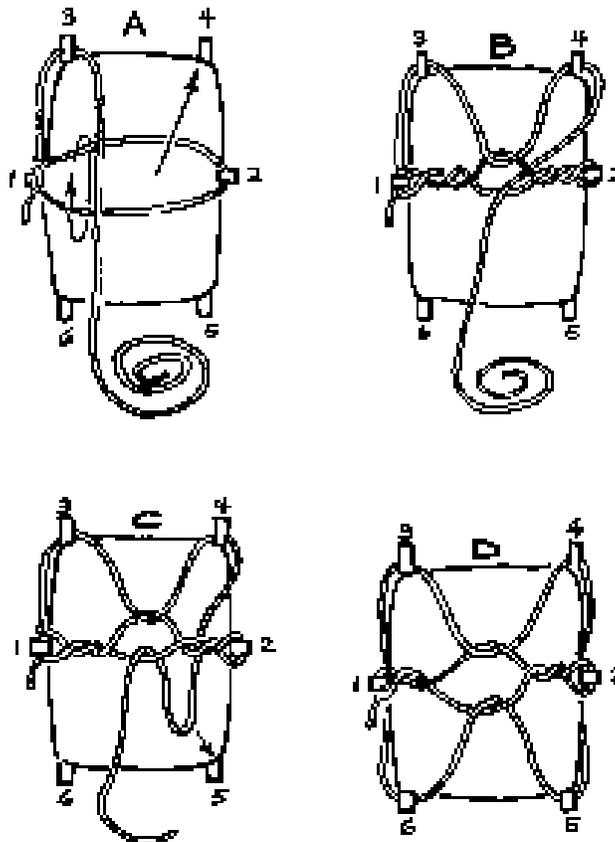
Start by making an overhand knot in the standing part about 10 – 12 inches from the tag end. Pass the tag end through the eye of the lure or hook, and back through the overhand knot. Wrap the tag end around the standing part 5 or 6 times. Bring the tag end back through the overhand knot, entering from the same side of the overhand knot that it came out from before.

Moisten the lines and pull slowly on the tag end to bring the wraps loosely together. Then pull the loop and the standing part in opposite directions to firmly seat the knot. Clip off the tag end close to the knot.

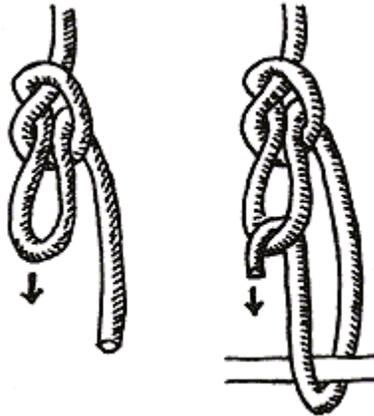


Diamond Hitch

The Diamond Hitch is a useful way to tie down a bulky load. The illustration shows a pack frame but the hitch was also used by prospectors to secure their supplies and equipment to a mule. The primary advantage to the Diamond Hitch is that the line that forms the "X" is one continuous piece, making the hitch easy to adjust and tighten.



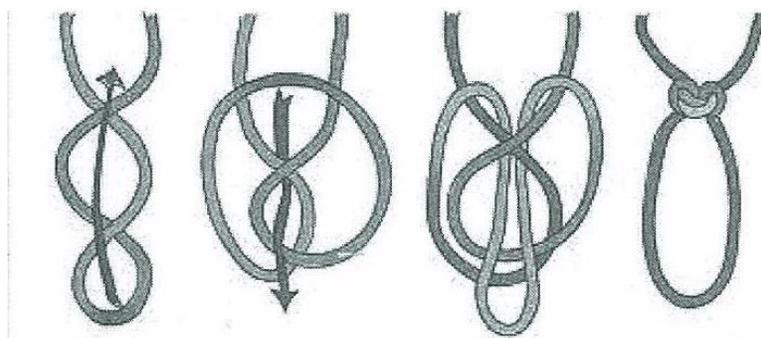
Truckers Hitch



The Trucker's Hitch has the distinctive feature of providing a three-to-one mechanical advantage (like a pulley) when being tightened. It's a valuable knot – particularly for securing loads or tarpaulins, or tying a canoe down to the top of a car.

There are several variations of the knot, all of which use a loop in the standing part of the rope as a make-shift pulley in order to obtain a three-to-one mechanical advantage. The hitch above is not as widely used today because straps and mechanical ratchets have gained in popularity. The hitch is composed of three parts: a loop, a purchase, and Two Half Hitches. An eye is formed by twisting the rope after which a loop is passed through the eye. The purchase is then created by passing the free end around the roof rack and then back through the loop. After tightening, the tag end is used to tie a Two Half Hitches below the original loop to hold everything secure.

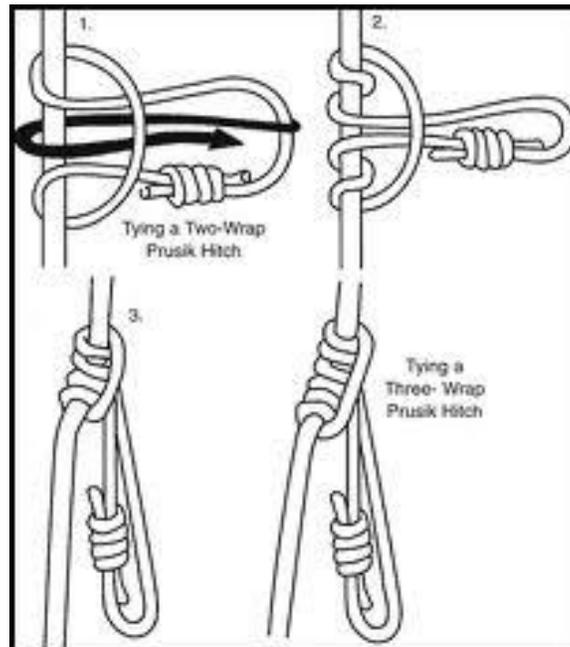
Alpine Butterfly



The Alpine Butterfly provides a secure loop in the middle of a piece of rope that won't slip. Loads can safely be applied from the loop to either end of the rope, between the two ends with the loop hanging free or, to the loop with the load spread between the two ends.

It is useful anytime a secure loop is required in the middle of a rope. A good example is when a line of hikers wish to hook on along a length of a shared rope.

Prusik Knot



At first look the Prusik Knot appears to do the same thing as the Alpine Butterfly knot but there is a major difference. The Alpine Butterfly Knot is tied in the middle of a rope using the rope itself to tie the knot. The Prusik Knot is used to tie a second rope to the main line. The Prusik Knot can also be slid or moved along the line without un-tying.

Camp Gadget

This is an opportunity to use your imagination and knot skills to create a camp gadget. Some suggestions are:

- Pack holder or pack frame
- Table
- Chair
- Camp entrance/gateway
- Paper towel holder
- Rain gage
- Flag pole
- Trash bag holder
- Chef kit (utensil) holder

Level Four – Red Rope

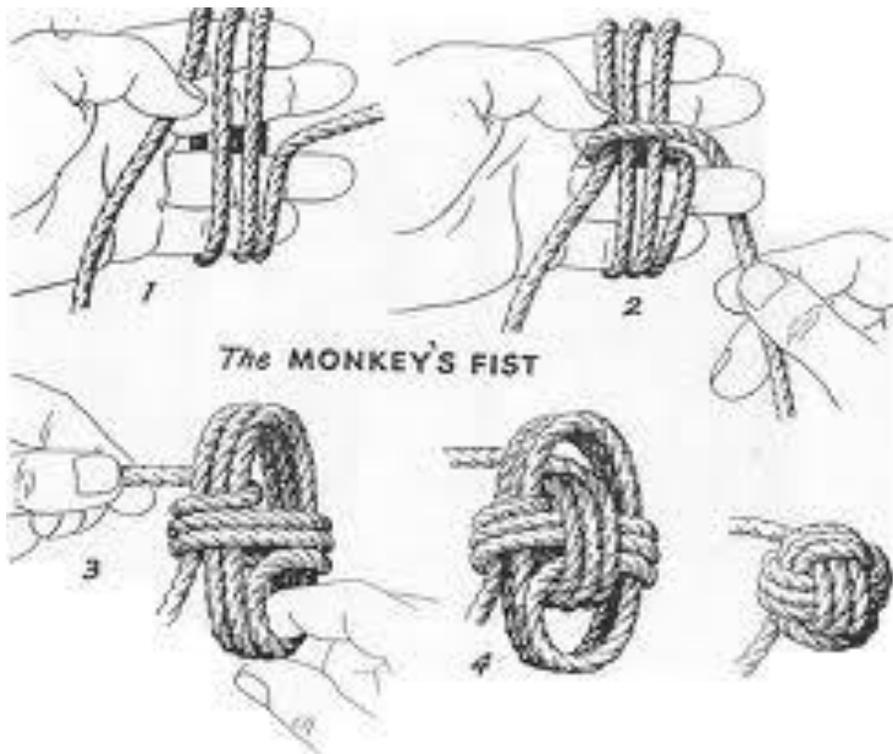
Level Four consists of a combination of more difficult, decorative and useful knots. These knots will challenge your knot tying capability and prepare you for the “Knot Master” level. The Turks Head, or “Woggle” is probably the most popular because of its use as a neckerchief slide. The Bowtie Knot is included to demonstrate some unique knots that have an interesting history.

Turks Head



Turks Head knots are often tied around cylindrical objects. To tie a Turks Head around a post of some kind, first tie a basic overhand knot around the object (picture 1). Bring the working end of the rope behind the object (to the left of the overhand knot) and around to the front at the bottom of the object. Then thread it through the overhand knot as in picture 2. Bring the working end back towards the left, over the first strand and under the second strand (picture 3). Now bring the working end behind the object (to the left of the knot) and around to the front at the bottom again, then thread it over-under-over as in picture 4. Now bring the working end behind the object (to the right of the knot) and around to the front at the bottom, and you have completed a single strand Turks Head. If you thread the working end of the rope all the way through the knot again, precisely following the original path, you will have a two strand Turks Head (picture 5). Repeat again for a three strand knot and tighten carefully by starting at the beginning and pulling out some of the slack and working all of the way through. You will probably have to do this a couple of times to get it to the size you want.

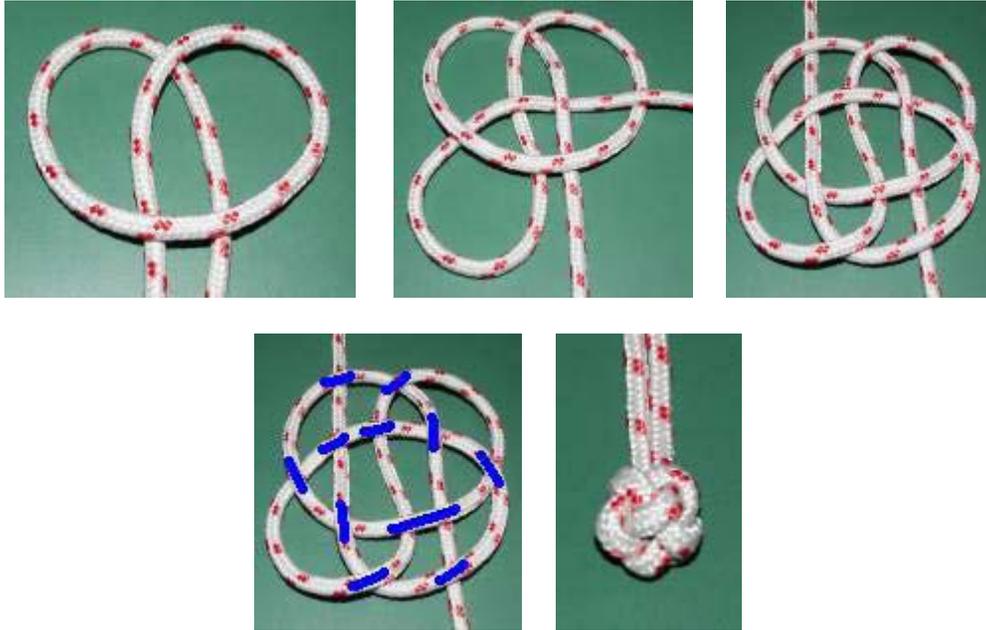
Monkey's Fist



A Monkey's Fist Knot is so named because it looks something like a small bunched fist or paw. It also looks kind of like a volleyball. It's tied at the end of a rope to serve as a weight, making it easier to throw the line, and also as an ornamental knot. This type of weighted rope was also used as an improvised weapon called a slingshot by sailors.

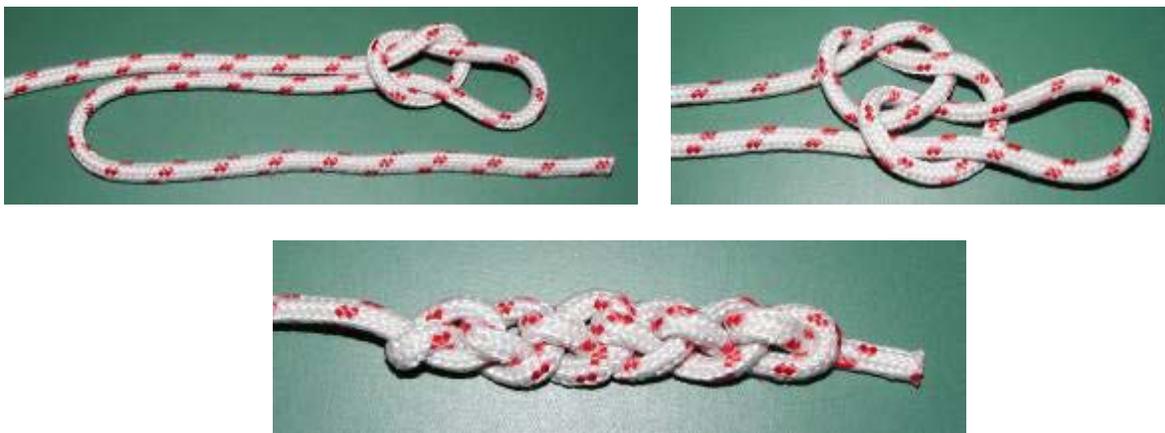
The knot is usually tied around a small weight, such as a stone, marble or a piece of wood. A thicker line will require a larger object in the center to hold the shape of the knot. Another variation of the Monkey's Fist Knot omits the use of an external object or weight and uses the spare end of the rope which gets tucked back into the knot. This results in a nicer looking knot of lesser weight, minimizing the potential danger of hitting someone with the knot when hauling line.

Chinese Button



This is the knot Chinese tailors traditionally used as buttons on jackets. To tie this knot, lay out the rope on a table and follow the over and under sequence exactly as in the pictures. It looks complicated, but just take it step by step. Picture 4 is identical to picture 3, but with blue lines to indicate more clearly which parts of the rope cross over other parts of the rope. After you tie the knot as in picture 3, slowly and carefully tighten the knot and work it into a button shape (picture 5).

Daisy Chain



Like the Braid Knot (next) this can be used as a decorative “pull” at the end of a rope or string, or as a “friendship braid”, or as a decorative handle. To tie this knot start somewhere in the middle of the rope by tying a Slip Knot (picture 1). Push a bight from the end of the rope through the loop of the Slip Knot (picture 2), pull tight and continue

pushing a new bight through each previous bight, working your way towards the end of the rope. Tuck the end of the rope through the final bight to “lock” the Chain Stitch (picture 3). To untie this knot simply remove the end of the rope from the final bight and pull both ends of the rope apart from each other. This will untie all of the Slip Knots. The chain looks best when all of the knots have been tightened the same amount. A variation of this knot can be used as a lanyard knot.

Braid Knot



Like the Daisy Chain (above), this can be used as a decorative “pull” at the end of a rope or string, or as a “friendship braid”, or as a decorative handle, and so on. To tie this knot start by looping the rope around twice in order to create three strands to work with (picture 1). Begin “braiding” the three strands by bringing the bottom strand over the center strand, then bringing the top strand over the new center strand (picture 2). Continue alternating in this way (picture 3) until you have braided as far as you want to go (picture 4). As you are braiding the rope, the end of the rope may become twisted and tangled (which is starting to happen in picture 2). Simply pull the end of the rope out of the tangle periodically (picture 3) to keep it untangled.

Square Sinnet



The square sinnet uses two strands of cord, like paracord (or plastic / leather lace). You can use the same color or two different colors for a combined finish.

The result is useful as a fob, or terminal end, with a squared shape. If you want to leave a small lace of paracord in the end then you should plan the length before starting the knot. You can use a small rubber band to separate the lace from the rest of the cord.

If you want to install a solid or split ring (for a keychain, etc.) you should also do it before starting the knot.

Round Sinnet



This is a variation on the square sinnet that produces a cylindrical result instead of a square, with the strands of paracord doing spiral waves.

It has a nice look when you combine strands of paracord of different colors. The procedure to create this knot is almost identical to the square sinnet but what you do in every step is slightly different, basically you cross the strands of paracord across the center instead of bending them along straight lines.

Cobra Stitch



The Cobra Stitch, also known as the Solomon Bar knot is the star of the “flat” knots. It can be used to enhance lanyards, to create fobs, bracelets, belts, straps for bags or pouches, straps for flashlights, etc. This interesting knot can also be used to “store” paracord inside the knot itself in a way that can be easily pulled out in case of need. That is why you often see bracelets or belts tied this way labeled “survival”, meaning you can use them to get to the cord in case of need. Another way to “Be Prepared”.

The Cobra Stitch can be done with a single strand of paracord, with two strands or with three strands depending on the kind of result you want. You can also leave a loop of cord outside of the Cobra Stitch to be used as an attachment point.

Bowtie Knot



The Bowtie Knot, also known as the “Tomfool Knot”, can be used as handcuffs and became famous, owing to its having baffled a number of “handcuff kings” and other performers who readily escaped from common knots and manacles. It is made like the Clove Hitch on a Bight, and then the loops are passed through the opening to form a double loop or bow. If the hands or wrists are placed within these loops, the loops

drawn tight, and the loose ends tied firmly around the central part, a wonderfully secure handcuff results.

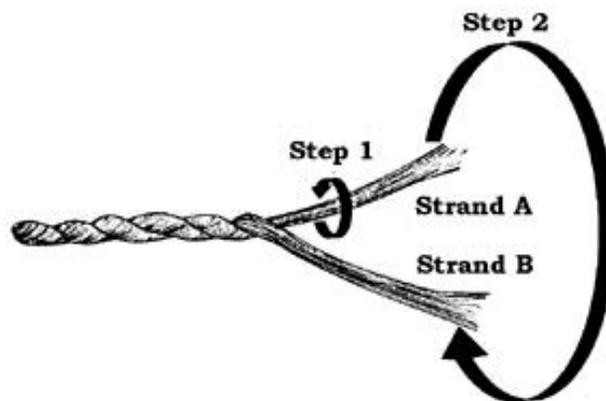
This knot is also known as a *hobble knot* for similar reasons, from the idea that the knot was sometimes used on the legs of horses to limit the distance their riders had to walk in the morning to retrieve them.

Making Rope

Of course some type of rope is necessary to tie knots in the first place. Making a 3-strand rope out of twine is pretty straight forward. It does help if you have a few tools and someone to help you.

Making rope or cordage is part of the Pioneering merit badge, so you can use the merit badge book as a reference to complete this part of the Knot Master Program. Another option is to make natural cordage.

There are numerous resources on the internet that can teach you how to make cordage out of natural materials in the wild, including several good YouTube videos. There are a wide range of materials you can use including the inner bark of several trees, milkweed, thistle, dog bane and cattail leaves to name a few. Of course it helps to be able to identify the material you plan to use in the field. While some materials are better or stronger than others, basically anything fibrous will work. Once you have gathered and prepared the material, most of the cordage making techniques use the Reverse Twist technique.



The basic idea behind the Reverse Twist is shown in the picture above. Prepare a small bundle of fibers and fold them over to double them. Hold the end of the loop in your left hand. Give Strand A half a twist in one direction (clockwise) and then pull Strand A back in the reverse direction (counter clockwise) over Strand B.

Repeat this several times and you will begin to see a section of twisted cordage forming. Add additional material as you work along and you can make your cordage as long as you like. You can also take two or three strands of your finished cordage and twist them together to form a thicker, stronger rope.

Level Five – Black Rope

Knot Master

Level Five is the final level of the Knot Master Program. The level of Knot Master is achieved by combining the skills you've learned in completing Levels One through Four, and then going a little further on your own, to create a decorative or functional rope project. Decorate a walking stick or make a key fob from a combination of Round and Square Sinnets and modifying the Chinese Button as a lanyard knot. Make a decorative lanyard to clip on a whistle and/or compass using variations of the knots you've learned. Make a decorative wall hanging or a door mat using a variation of the Turks Head or the Ocean Plait. The field is wide open. Do a little research, think it over, use your imagination and be creative! Once you've done so, you will truly have become a Knot Master.

But like anything else, if you don't use it, you'll lose it! Make sure to stay proficient on all of the knots you've learned. Wearing the black rope is a symbol to all that you can be relied on to demonstrate and teach any of the knots at any given moment.

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