

ALL TIED UP

LEARNING OUTCOMES

By the conclusion of this badge members will:

- have knowledge of various knots and their uses;
- be able to demonstrate skills in using knotting.



BADGE REQUIREMENTS

1. Tie at least five knots from the following list and know at least one specific use for each knot:
 - Reef knot
 - Truckie's hitch
 - Clove hitch
 - Bowline
 - Round turn and two half hitch
 - Back splice
 - Sheep shank
 - Timber hitch
 - Double overhand
 - Sheet bend
 - Whipping (any variety)
 - Marquee hitch
 - Turks head
2. Demonstrate ability to use two of the following:
 - Diagonal lashing
 - Shear lashing
 - Frapping ties
3. Describe the practical application of and construct a rope bridge, flagpole or other gadget.
4. Show proper care of rope in regard to stowage and cleaning.





TEACHING IDEAS



1. Tie at least five knots from the following list and know at least one specific use for each knot.

- Reef knot
- Truckie's hitch
- Clove hitch
- Bowline
- Round turn and two half hitch
- Back splice
- Sheep shank
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- Double overhand
- Sheet bend
- Whipping (any variety)
- Marquee hitch
- Turks head

Ask members to choose five knots from the list to learn the tying techniques. Below are basic instructions for tying each knot. Members can use **Handout 1** to name, illustrate and list the uses of the five chosen knots.

Leader's Resource 1 has an extensive list of games which will assist in teaching and remembering specific knots.

Use **Handout 2** to reinforce the names of knots.

There are also many websites that have instructions, pictures and animated displays. Some useful sites are:

- <http://boatsafe.com/kids/knots.htm>; <http://ropeworks.biz/>;
- <http://folsoms.net/knots/>;
- <http://42brghtn.mistral.co.uk/knots/>;
- http://www.proknot.com/html/rope_knots.html;
- <http://www.realknots.com/knots/index.htm>;
- <http://www.animatedknots.com/index.php?LogoImage=LogoGrog.jpg&Website=www.animatedknots.com>;
- <http://www.scoutingresources.org.uk/knots/index.html>;
- <http://knots-guide.blogspot.com/2008/03/knots-bends-and-hitches-knot-is-generic.html>.

Teaching ideas



Reef Knot

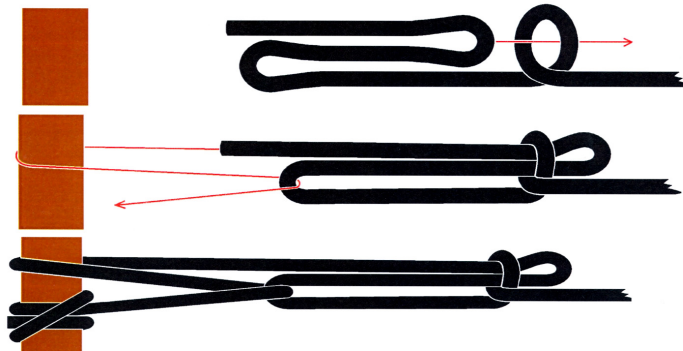
(Also known as a square knot) very useful in tying ropes of even thickness, it ties and unties easily and is common in first aid as it sits flat.



Tying: Bring end A over end B then under and over the top of rope B; Turn end A back to the right hand side over rope B under and through the loop just made. Teach 'Left over right and under, Right over left and under'. Teach this knot when teaching first aid skills and revise it frequently.

Truckie's hitch

Used to tie a rope to a fixed object under tension, especially when securing a load onto a truck or trailer. This knot uses a loop in the rope as a "pulley" to double the tension that can be exerted by simply pulling on the rope. It is not recommended for natural-fibre ropes because of the

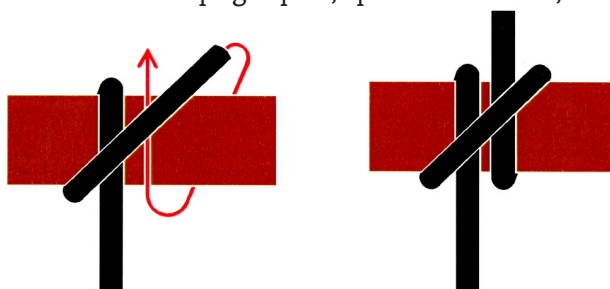


rope-on-rope friction.

Tying: Tie off one end of the rope. Lay the rope over the load to be tied down. Tie a slippery half hitch in the middle of the line to form a small loop. With the free end make a turn around the trailer bar/eye hook etc and bring the free end back up to the loop in the line. Feed through the loop and pull down tight. Secure it off with a clove hitch or half hitches tied snugly next to the turn.

Clove hitch

Best used around an upright pole, spar or tree trunk, this hitch is often used





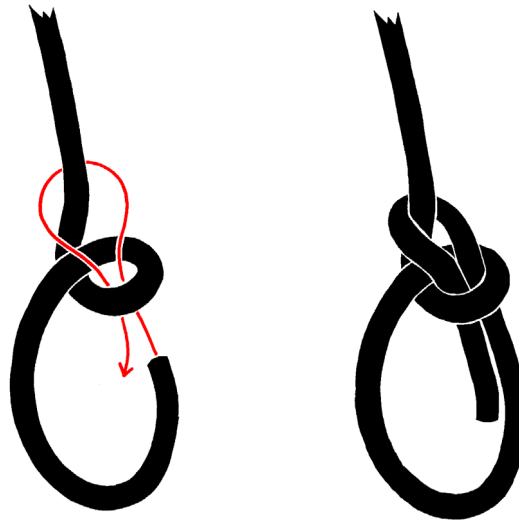
Teaching ideas

Tying: Place the rope around the pole to the right, behind the pole and over the rope, then around the pole from right to left and under the cross over of the rope.

To drop the hitch onto a pole or staff, make two loops in the middle of the rope, one loop underhand and one loop overhand, now place the underhand loop on top of the overhand loop and thread the loop onto the pole.

Bowline

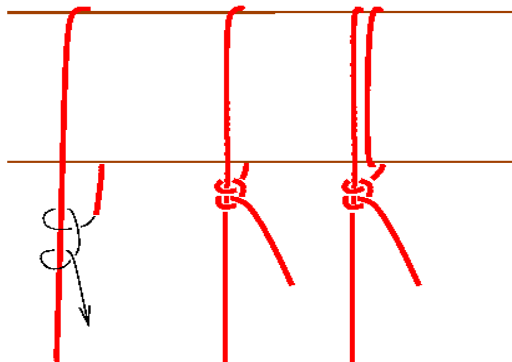
Will not slip or jam and is therefore used as a rescue knot on the end of a life line and as a lasso.



Tying: Using one end of the rope make a small loop 60 to 80 cm from the end of the rope (this rope end should be sufficient to go around the waist) Bring the end up through the loop around the long (or standing) part of the rope and down through the loop again.

Round turn and two half hitches

Is a hitch used to secure the end of a rope to a fixed object. The name refers to the components used to form the knot: a round turn wraps the rope around the object (completely encircling it) and the two half hitches secure the end around the standing part. Variations of this hitch can be made with differing numbers of turns and half-hitches.



Tying: Pass the running end of the rope over the pole twice. Then pass the running end over the standing part of rope, and tuck it back up and under itself, forming a half hitch. Repeat this for a second half hitch.

Teaching ideas

Back splice

Used to stop ropes or the strands of ropes unravelling.



Tying: Tape the main body of the line six crowns from its end to keep it from unravelling. Un-lay the strands and tape the ends. Lay the right hand strand across the other two as shown.

Tuck the left hand strand over the first strand, behind the centre strand, and back over the right hand strand. Remove tape from the main line and pull the strands snug. Tuck the strands in sequence, over and under the strands in the main body of the line, working against the twist as in the short splice. Clip protruding ends with a sharp knife and roll the splice between hands to smooth out.

The process above is demonstrated on three strands; however the same method applies for any rope. If the back splice is to fit through a pulley or hole, be sure to do the splicing after the rope has been threaded as back splicing does expand the rope size.

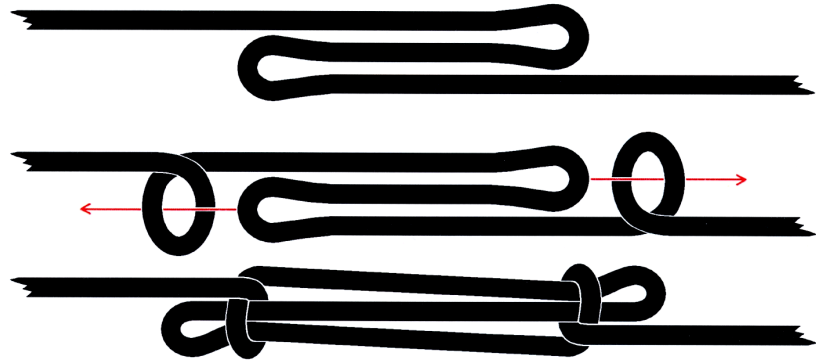




Teaching ideas

sheep shank

Used for shortening rope with many variations. Can also be used to strengthen a rope, the weak part of a rope should be placed in the centre of the slack forming the knot.

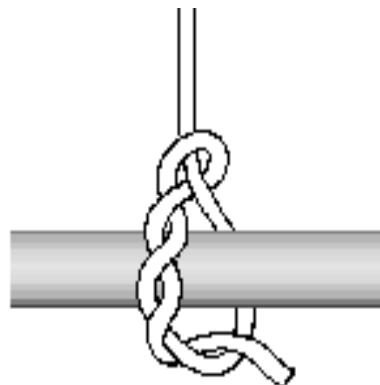


Tying: A sheepshank knot may be constructed as follows:

- Pull a section of rope back and lay it alongside the rope, so that the rope forms a Z approximately 20 cm long.
- Flatten the Z so that there are three sections of rope lying alongside each other, with two U-bends where the rope reverses direction.
- At each U-bend, grasp the U-bend in one hand, thus holding two of the rope sections. With the other hand form a small loop in the remaining section and draw it over the U-bend so that the loop forms a half hitch and stays there if the free end of the rope is pulled taut.
- Many people draw the small loop over facing the wrong way at least half of the time. Instead, make with the U a half-hitch around the other part, by tucking through, then pull the U straight.
- Repeat at the other U-bend.

Timber hitch

Easily tied and easily untied when slackened. This knot is used often to haul timber or bind timber together and works when strain is maintained on the rope.

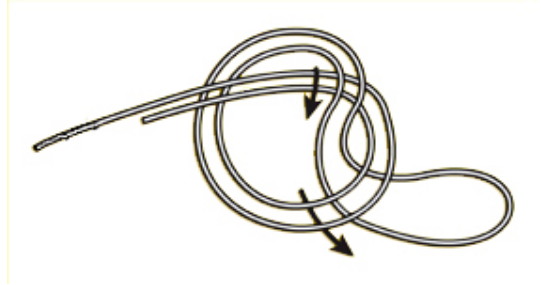


Tying: One end of the rope is passed under or around the timber or pole; this is then brought up and around the standing part of the rope. Then turned three or four times around itself and pulled taut. Make sure that the turns are around the rope that has just been passed around the standing rope.

Teaching ideas

Double Overhand

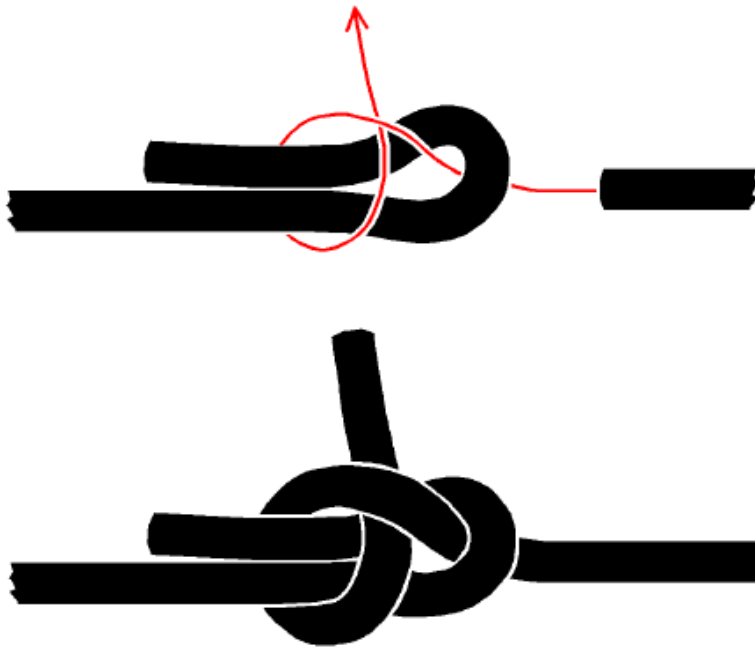
Used for bundling ropes and cords preventing them from tangling. Used to create a grommet.



Tying: Halve the rope, or quarter it if you are using this knot to bundle the rope.

Cross the left end of the rope over the right end of the rope and pull through the loop that has been created.

Sheet Bend



Used to join two ropes of uneven thickness

Tying: Form a loop at the end of the thicker rope. Pass the thinner rope through this loop and around both ends of the thicker rope. Then pass the thinner rope underneath itself in front of the loop of the thicker rope.





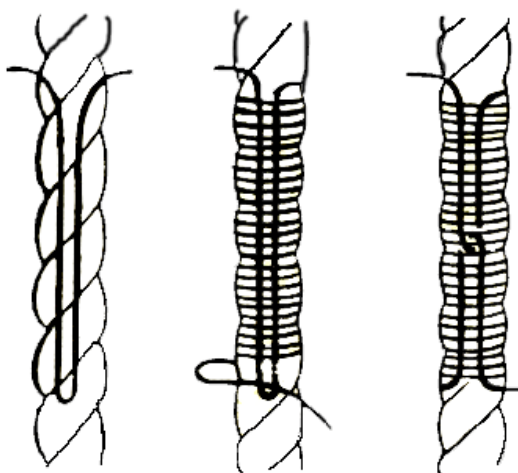
Teaching ideas

Whipping

There are various methods of whipping but the object of them all is to prevent ropes and cord from fraying.

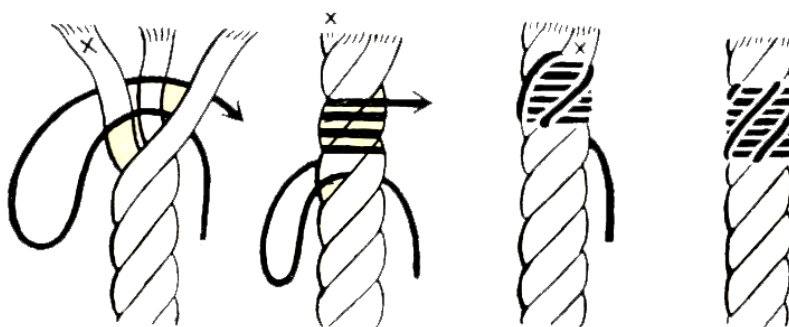
Simple Whipping

Lay a loop of twine along the rope and begin winding the end of the twine around the rope towards the end of the rope which is also towards the loop you have made. Keep a firm pressure on the twine and lay each turn side by side, do not wind the twine on top of itself. The whipping should be as long as the rope is thick. When you have reached near to the end of your rope pass the end of the rope through the loop. Now pull gently on the first end of the twine which will pull your end under the whipping. This will hold the ends under the middle of the whipping. Snip off the end close to the whipping



sail Maker Whipping

Is a stronger form of whipping but will not work with sash cords. Unlay the strands of the rope and place the twine in a loose loop over one of the strands; the two ends of the twine emerge together on the opposite side of the rope. Now relay the rope and begin whipping around it remembering to keep pressure on the twine and not to overlap the twine as it is wound around the rope. When you have the desired length of whipping, bring the loop up and over the strand of the rope. Now secure this by pulling the loose end at the beginning of your whipping. Now bring this up from the base between the third strand of rope and tie with a reef knot to the working end so that the knot is hidden in the centre of the strands. Trim off any excess twine.

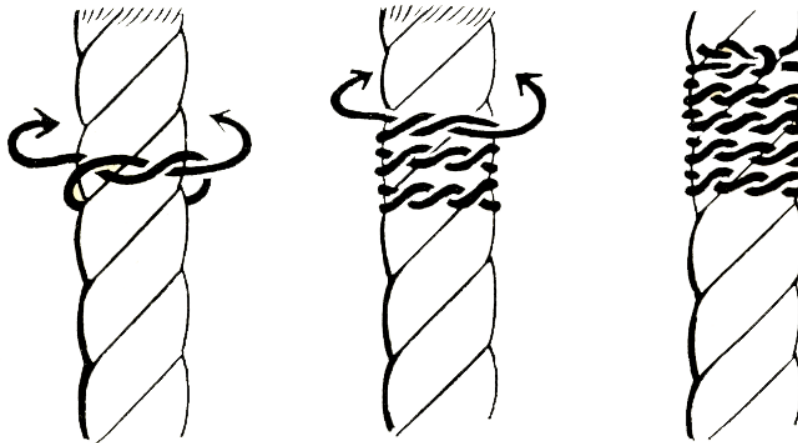


Teaching ideas



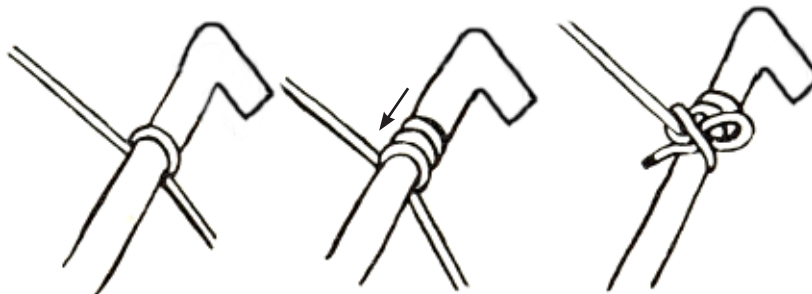
West Country Whipping

A more ornamental whipping suitable for woven cords and core ropes. Begin by halving the twine to find the middle and wrap this around the rope. Tie a simple thumb knot around the rope, pull tight and pass both ends to the back of the rope. Tie another thumb knot, pull tight and pass the twine to the front of the rope. Repeat this process about five times until you have the desired length of whipping i.e. the length should be equal to the diameter of the rope. Finish with a reef knot and trim the twine tucking the ends neatly under.



Marquee Hitch

To secure a rope to a peg.



Tying: Bring the guy rope around the peg keeping even pressure on the rope. Turn the rope around the peg again going over the top of the guy; this will pull the guy tighter. Repeat this three times and finish with a half bow.

When tying as a guy rope on a flag pole have someone hold the pole upright keeping it straight. It is advisable to tie opposite guys at the same time to equalise the pressure.

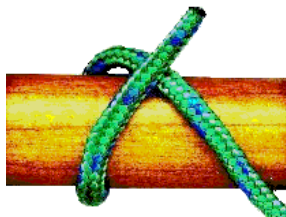


Teaching ideas

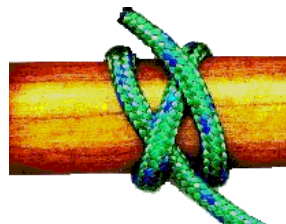
Turks Head

Finishes off a rope end or used for a woggle. Tie around a short pole, dowell or your fingers.

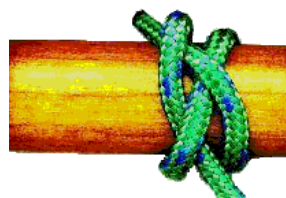
Tying:



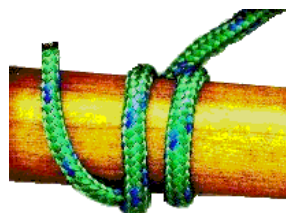
Bring the rope up in front of your form, pass around behind it, and then around front again, crossing over the first pass you made.



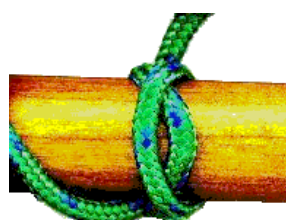
Now take the working end behind the form again, and bring it to the front, crossing your last pass, and parallel to the first one.



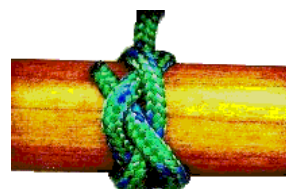
Now tuck the working end under the first pass you made.



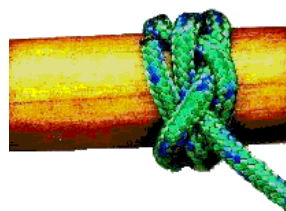
Roll the form toward you. Your working end should now be on the bottom, and your previous work should show two, mostly parallel, ropes.



This is the only tricky part. Look for the parallel rope that is furthest from your working end, and pull it over the other rope, making a small opening or eye.



Now tuck your working end over the first rope, down through the eye you just formed, and under the second rope. Now take the working end up and over the form.



Roll the form back towards you. Believe it or not, the basic Turks head is now done! It only has one pass, though, so you will probably want to double or triple it. Take the working end and tuck it next to your very first rope, and thread it into and out of the knot, always staying exactly next to the first pass you made.

Teaching ideas



This image shows a doubling pass almost completed. Remember, you're just putting one pass right next to the previous one.

Woggles can be made with a doubled or tripled Turks head.



The ends of a Turks head should always be hidden, tucked into the knot. One thing to do is bring the ends up between two of the passes before tightening the knot. Tightening the Turks head is essential, and is done by slowly working the ends through, until it is firm.

Once you have completed your Turks head, you have to do something to help it hold its shape. If it is intended to stay on its form, simply tightening it will probably be sufficient. If you want to take it off the form, you have to try something else. For natural materials (cotton or hemp rope) you can whip the ends to the lines next to them, or spray the whole thing with clear polyurethane varnish.

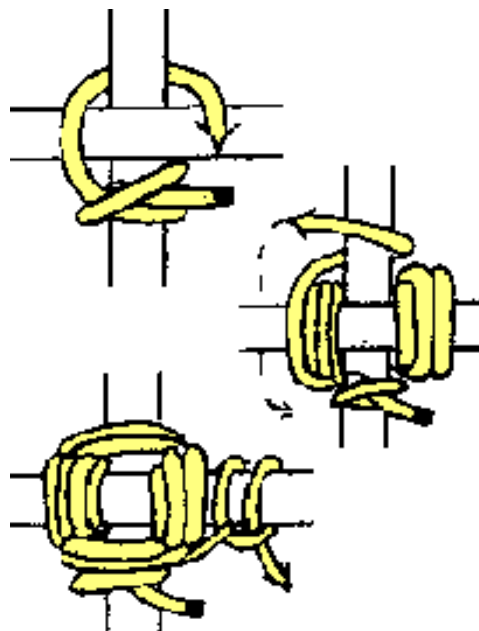
For artificial rope (nylon, poly) you also have the option of melting the ends to hold them in place. One technique is to put the whole knot, form and all, in the oven at about 200°C. For Poly rope, take it out after about ten minutes and for nylon after about 20 minutes. Let it cool, and the whole thing should have melted slightly, and hold its shape.

2. Demonstrate ability to use two of the following.



square Lashing

Used to join poles and staffs together. To be successful each turn of the rope must be drawn tight and laid close to the previous turn without overlapping, the hitch that begins the lashing (usually a clove or timber hitch) should be tied tightly and lay flat and snug against the pole.





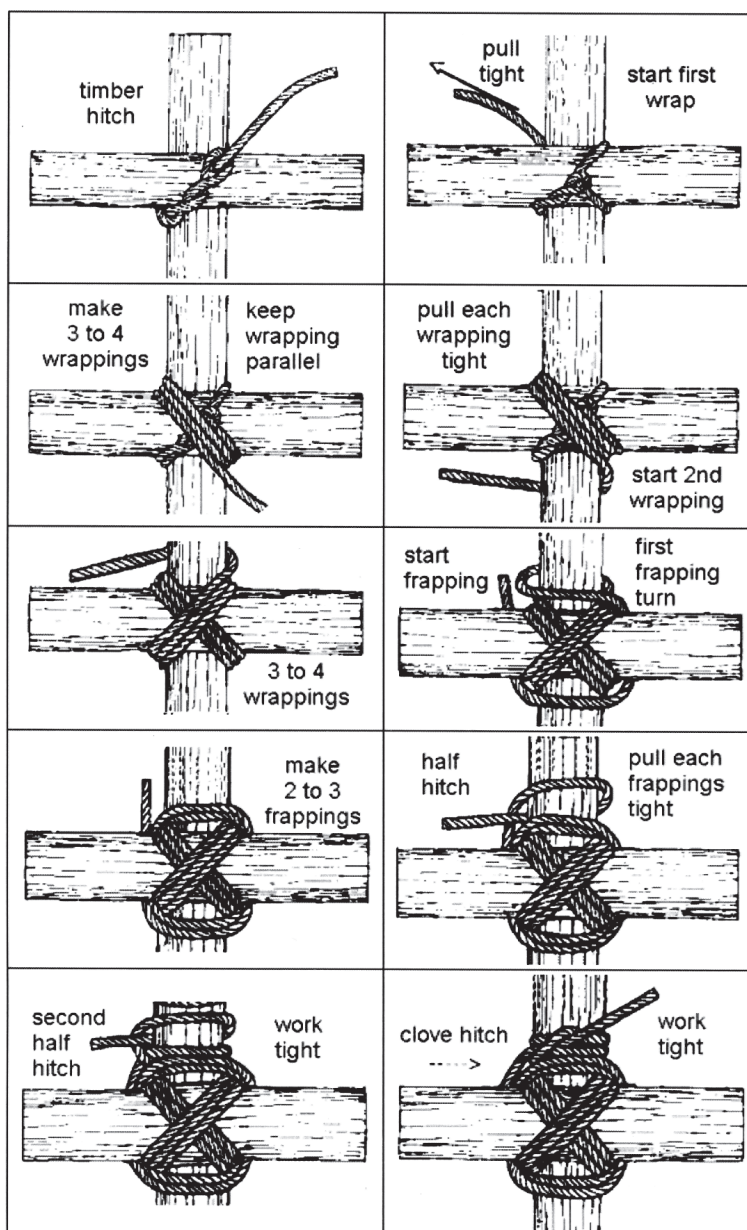
Teaching ideas

Tying:

- Tie a clove hitch onto the upright so that the long end pulls straight out from the hitch.
- Lay the horizontal spar directly above this hitch.
- Take the rope upward in front of the horizontal behind the vertical; down over in front of the horizontal and behind the vertical again.
- The process is repeated four times. Each turn should be kept tight and laid directly next to the previous turn.
- The lashing is then finished with three or four frapping turns around the lashings. Frapping turns go around the binding of the first lashing between the two poles, as these are turned around the lashing they tighten the lashings together.
- Finish off with a tight clove hitch on the horizontal spar.

Diagonal lashing

Used to 'spring' two spars/poles together.



Teaching ideas

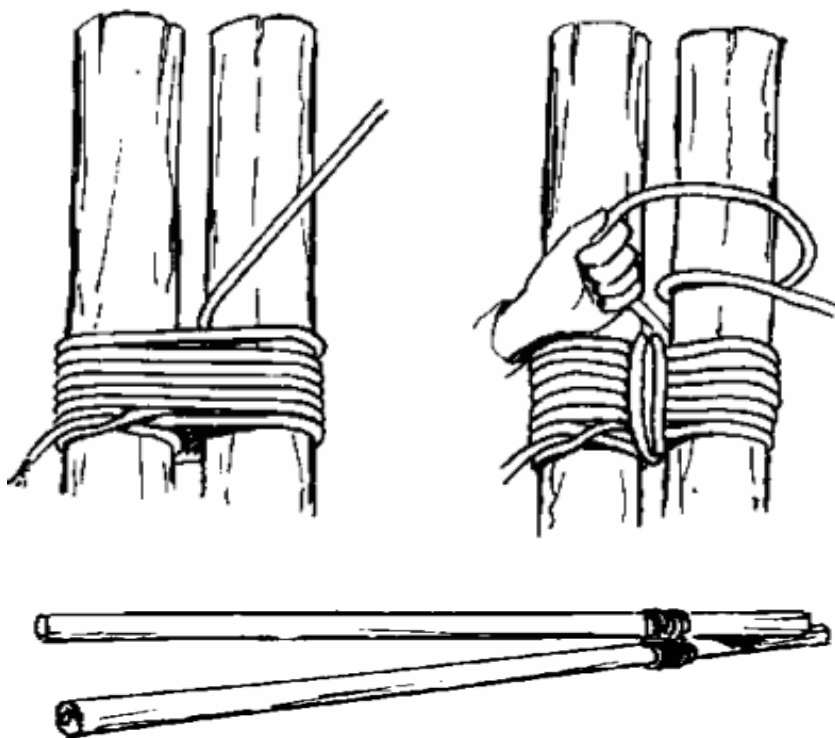


Tying:

- This lashing is started with a 'timber hitch' around the two spars at the point where they cross, so binding them together.
- Take three turns around the spars, following the lay of the timber hitch, making sure that the turns lie beside each other, not on top of one another.
- Lay three more turns, this time crosswise over the previous turns and strain to tighten. Make two frapping turns between the two spars, around the lashing turns.
- Strain the frapping turns tightly and finish the lashing with a clove hitch around any convenient spar.

Shear Lashing

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.



Tying:

- Lay out the poles side by side.
- Tie a clove hitch around one of the outside poles and secure the end under the wrapping.
- Pass the rope around the poles to form a first turn.
- Pulling each turn tight make a series of turns until the lashing is at least as long as the combined diameters of the two poles (usually a set of four to six turns will be sufficient).



Teaching ideas

- 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 two or three times.
- When using three spars or poles start the second set of frapping turns by taking the rope around the centre pole and frapping. Take the second set of frapping turns in the opposite direction to the first set.
- 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.

Frapping

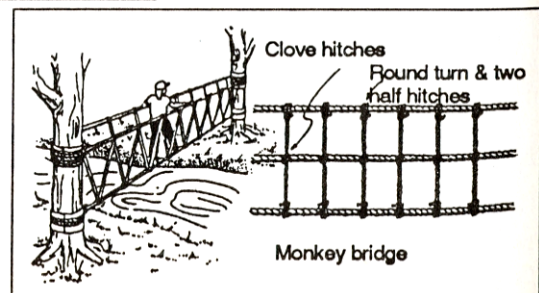
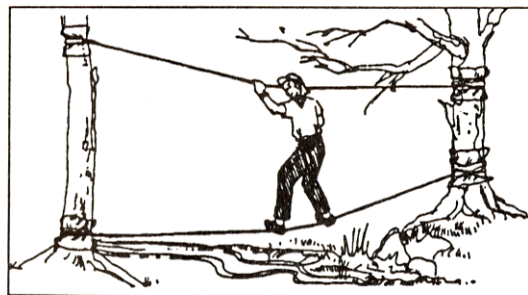
A series of turns around lashings to make them tight. Frapping is often included in the lashing and not referred to separately.



3. Describe the practical application of and construct a rope bridge, flagpole or other gadget.

Rope Bridge

A rope bridge requires long lengths of ropes strung between two trees or fixed points enabling the crossing of a gorge or river.



Supplies

Three long ropes of sufficient length to cross the gap, one usually thicker than the other two
 Eight one metre length ropes
 Hessian or newspaper

Teaching ideas



Method

- Lay three ropes parallel on the ground – the thicker rope being in the middle for the foot rope.
- Use the eight ropes as the side guide ropes.
- Tie each of these guide ropes to the foot rope with a clove hitch and to the side ropes with a round turn and two half hitches, spacing them evenly along the ropes.
- Tie one end of each rope around the tree with a round turn and two half hitches; protect the tree with hessian or newspaper.
- Have someone cross the river by swimming across and then throw a hauling rope to them.
- After hauling the rope bridge over tie it to the second tree, again protecting the tree with hessian.
- Make sure that the bridge is tied high enough off the ground to prevent the centre sagging into the water.

Flagpole

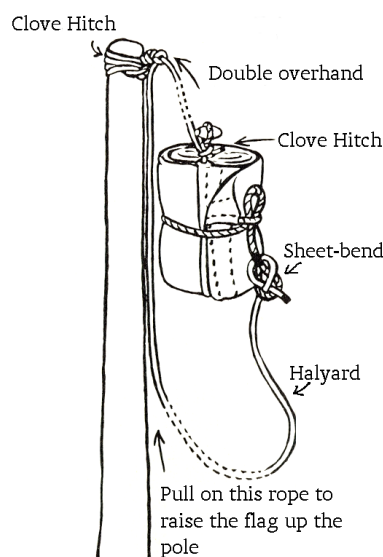
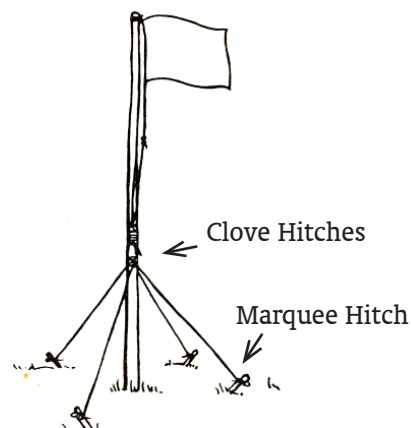
Every Camp should have a flag pole.

Supplies

2.5 metres long staff/pole
Two guy ropes 1.2 metres each
Halyard three metres long
Grommet - sash cord 0.5 metres
Four pegs
Flag
Mallet

Method

- Tie the two guy ropes a third of the way up the pole using a clove hitch in the middle of the ropes. This will then give you four guy ropes.
- Tie a double overhand in the middle of the small sash cord and tie this to the very top of the flagpole with a clove hitch. This makes the grommet for the halyard to run through.
- Slip the halyard through the grommet ready to attach the flag.
- Hammer in the four pegs in a square formation 80 centimetres from the base of the pole.
- Place the flag pole upright and secure the guy rope to the pegs with marquee hitches.
- Attach the flag to the halyard with a sheet bend and clove hitch. Hoist the flag to the top of the pole.
- Unfurl the flag with a colour party and ceremony.





Teaching ideas

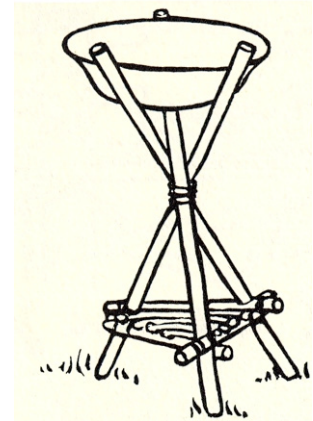
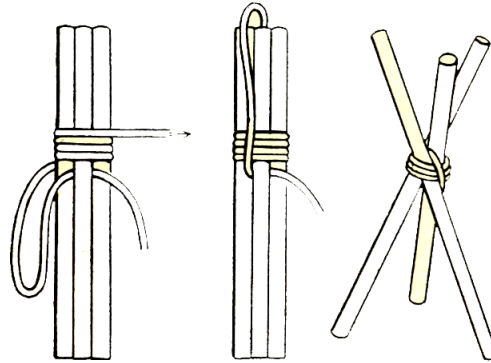
Tripod

Tripods are useful kitchen gadgets to hold washing up bowls or may be used to support cross bars for other gadgets.

Supplies

Three sticks of even thickness and length

Lashing cord



Method

- Start with all three sticks together.
- Place a loop of sash cord around one of the three sticks leaving the loop loose and the end hanging.
- Wrap the cord around the three sticks six or so times.
- Bring the loop over the top of the whipping then pull taut with the beginning of the cord.
- Bring this end around and between the other two sticks. Tie ends tightly with a reef knot.

Kitchen or Camp Gadget

Supplies

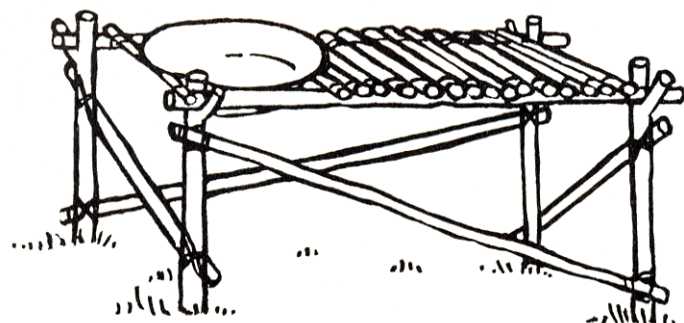
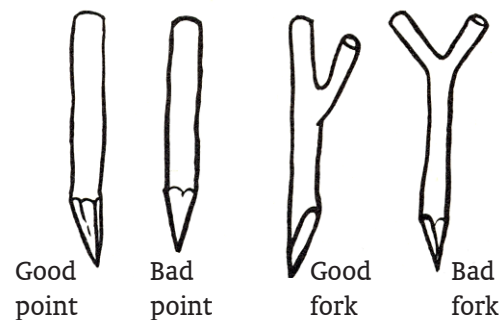
Straight poles

Sticks for cross bars

Forked sticks

Lashing cord

Mallet



Teaching ideas



Method

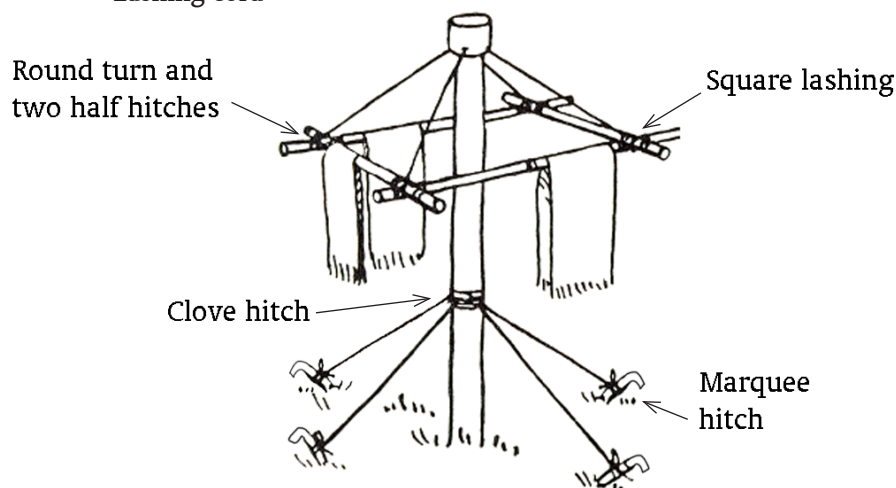
- Use four uprights that have sharp points cut in their base or find good strong forked sticks.
- Hammer these into the ground to form the corners of a rectangle. If you have forked sticks lay two long sticks in the forks and then snake lash cross bars to them to form the flat top of the gadget that will hold your bedding or kitchen gear.
- Or, if you have straight sticks square lash four sticks to form the frame of the top then snake lash the cross bars.

Once the lashings are learnt there are many variations that you can experiment with.

Rotary Clothes line

Supplies

One metre long staff
Four sticks – 60 centimetres long
Small can
Guy ropes, sash cord and twine
Four pegs
Mallet
Lashing cord



Method

- Use the same method as a flag pole for an upright pole choosing a staff or stick that is about a metre long. Construct a small square from four sticks approximately 60 - 80 centimetres long by square lashing them together. Punch four holes in the top of the tin, diagonally opposed.
- Thread two lengths of each sash through the holes in the tin.
- Place the tin on top of the upright and connect it to the corners of the lashed square with sash cord using a round turn and two half hitches.
- The tin sitting on the top of the upright will spin just like a rotary clothesline.



Teaching ideas

Clothes line

Supplies

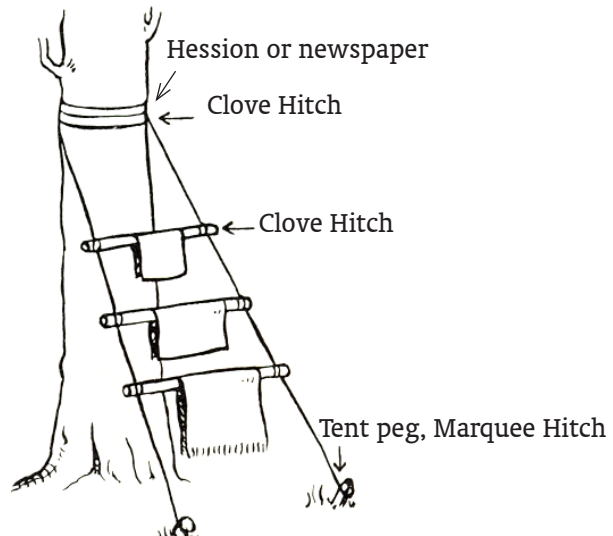
Long sash cord

Three to four straight sticks

Two pegs

Mallet

Hessian or newspaper



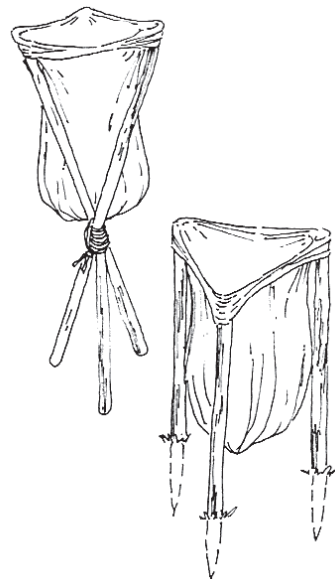
Method

Find the middle of a long sash cord and tie around the upright. A tree may be used if it is protected with hessian.

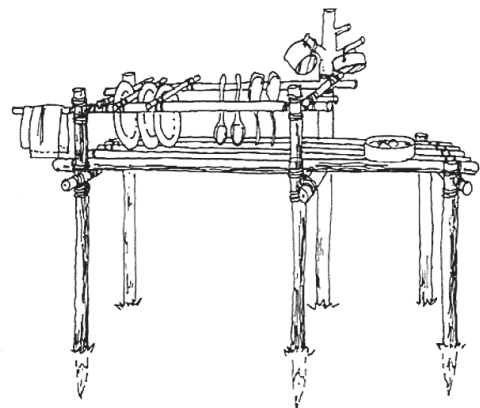
At regular intervals down the cord tie rungs across with clove hitches. Fasten the ends of the ropes to the ground by attaching them to pegs with marquee hitches.

Other Gadgets

Rubbish stand



Kitchen Gadget

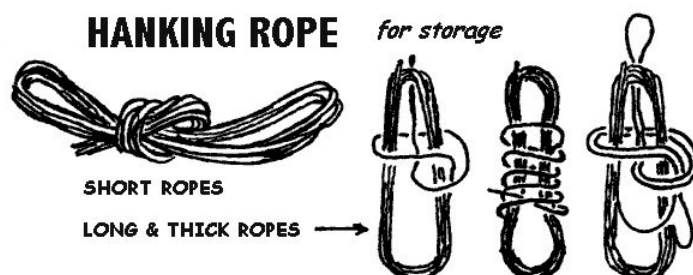


Teaching ideas



4. show proper care of rope in regard to stowage and cleaning.

- All ropes should be stored carefully to prevent rotting and moulding.
- When tying ropes to pegs make sure the ropes are one to two centimetres above the ground to prevent dirt getting into the rope fibres. Grit and stone particles will cut the fibres of the rope. Shake dirt from the ropes when ready to put them away.
- Occasionally ropes will need washing. Wash dirty ropes in clean, fresh water, using a mild soap, rather than harsh detergent.
- If ropes are exposed to salt water they should always be rinsed in fresh water and dried before putting away.
- Hang ropes to dry shaded from the hot sun, away from fires or artificial heat source.
- Always untie and un-kink ropes.
- Coil longer ropes in a hank and hang. Coil with the lay of the rope i.e. hawser laid rope should be coiled clockwise.
- Store ropes in a cool dry area protected from mildew and mould.
- Protect ropes from acid, paints, oils and alkalis as these will quickly damage natural rope fibres.
- Sunlight degrades synthetic ropes. Polypropylene is especially susceptible.
- Don't store rope on concrete floor as concrete contains oxidizing agents.
- Tie smaller ropes in double overhands and wind larger ropes securing them around the middle with both ends.
- Store the ropes in a well ventilated dry area. A material bag is a good storage area.
- Ropes that bear strain should be checked regularly for wear and tear, rotting, chaffing, and replaced if worn.
- All rope ends should be treated so they do not fray and unravel. Nylon and polyethylene ropes may be burnt to seal them. Cotton, sisal and cords should be whipped.

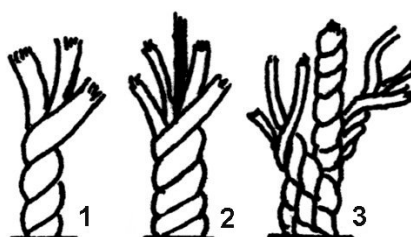


Rope Terms

Hawser-laid Rope – three strands laid up right handed as shown in fig.1.

Shroud-laid Rope – four strands laid right handed with a cord heart as in fig.2.

Cable-laid Rope – three right hand hawser-laid ropes laid left handed together as in fig.3.



Leader's Resource 1

Games

Games are an easy way to help members learn knots and can make the learning fun. It is suggested that games are repeated regularly to ensure members will not forget the knots. Knots can also form part of a Wide Game.

Back to Back

Members sit back to back each with a rope. One member ties a knot and describes how the process as they are tying. The other member follows this to copy the knot without seeing it.

Baseball

Same teams as baseball, but no bat or ball. Pitcher and batter each have a piece of rope. Pitcher calls name of knot and throws the rope to anyone in the field. If the batter reaches first base with knot tied correctly, they are safe. If knot tied (correctly) by fielder, reaches first base before batter, they are out. If batter cannot tie the knot called, they are out. If fielder cannot tie the knot called, the batting side scores one run whatever else happens. Fielders can then return ropes to second, third or home to 'force' base runners. Make sure the pitcher throws the rope to all fielders and not too frequently to first base. The size of the diamond can be adjusted.

Bean Game

After you have taught the reef knot give every member one bean. They then go in pairs and see who can tie the knot the fastest. The fastest one gets the other one's bean which now means they have two. Members with two beans find each other and repeat tying the knot. The one who ties it the fastest gets the beans and therefore now has four beans. They go to find another person with four beans and so on. For the members who lose they just go and get another bean from the pot and start out again so no one really loses and everyone gets lots of practice with this one knot.

Big Beetle

Each beetle needs:

Eight short pieces of rope (string)

One beetle head (cardboard with hole for attaching to body)

Two antennae - two pieces of wire in a loop

Two eyes – two large circles

Players need:

A bucket

Large dice

Tape and glue

Long piece of rope

Short rope

Play in patrols and provide all items for each patrol. Each member throws a dice in turn. A six must be thrown first to get the body (the bucket). Then when a five is thrown, the head is attached with a reef knot. Then when a four is thrown, the legs are attached with reef knots. At the three, the tail is attached, which is a short piece of rope tied in a reef knot. When the next player rolls a two, the antennae are stuck to head with tape. When a one is thrown, glue the eyes into place. When the beetle is complete, a long rope is tied around the neck with a bowline and the beetle is dragged across the finishing line some distance away.

Blackout Knots

All players have a piece of rope. Assign a specific knot. Shut out lights for a specified time and see how adept group is in the darkness. Vary knots called and time lights are out.

Leader's Resource 1 (cont'd)

Blindfold Knot tying

Have members tie knots behind their back or blind-fold them. This can be organised as a relay or in pairs with one member giving directions and hints. Use two blind-folds per team and have a member tie the blind-fold on the next player.

Blindman's Knot

The patrol/team is blindfolded. Pass a piece of cord with a knot tied in it down the line. Each member may finger it for ten seconds to discover which knot it is. The patrol is then provided with ropes one per member. At the word "Go" each blindfolded player makes the knot they considers the right one. The quickest team (if correct) wins. This may also be played with one member at a time blindfolded playing on behalf of the team.

Bowline/Sheet-bend Draw

Have the group divide into pairs. Each pair lines up across from each other. Each Member is given a piece of rope long enough to tie around his/her waist and leaving a metre or two spare. These ropes should be on the ground by the member's feet. At the GO signal, each member picks up his/her rope and ties a bowline around their waist. Then they join the rope with their partner's rope using a sheet-bend. They then back up until the ropes become taught, lean back and hold their hands in the air. As a patrol competition, the first patrol to have all of their pairs done, wins. As an individual competition, each team competes independently. Check the knots, if they are wrong, have them start over, with time running.

Bowline Pull

A game for outside or camp. Two players at a time with a rope long enough to bridge a gap between them. This gap may be a water barrier such as a small creek or a tarp with mud or slime. The members are given an end each. At the given signal they tie a bowline in the rope and fit it over their shoulders. At the second signal they begin to pull on the rope to pull their opponent into the mud. You may like to use a rope for each player so that they are pulling with their arms rather than the body.

Bowline Relay

Using a long rope for each patrol, position half the patrol at each end of your playing area. The first person in the patrol must tie a bowline around their waist, throw the rope to the first person opposite them and be hauled to the other end. The hauler then becomes the tier and ties a bowline around their waist and is pulled to the opposite side. The process is repeated until the entire patrol has swapped sides.

Buying Knots

Have a list of knots with there value i.e. reef knot one bean, bowline three beans. Each patrol has a supply of ropes that they must tie knots in. Once tied present them to a leader who will 'buy' with one or two beans depending on the value of the knot. Double the payment for 11 year olds.

This game may be used at camp or during a time when members are involved in a slower activity and beans may then be traded for extra morning tea or similar.

Capture the Elephant

Line the teams or patrols up in single lines with a chair at the front of each team. Each player has a length of rope, approximately two metres; each person has to join their rope to the next person's rope the last person then joins to the 'Elephant' (Chair) The team then pulls the chair a certain distance to ascertain strength of knots.

Leader's Resource 1 (cont.)

Challenge Course

Set up challenge points around the hall. At each point members complete one task. Have supplies at the table for each task and a leader to mark off the challenge checking the correct knot and stamping a card or similar. Games to use for a challenge may include Doctor Knots, Knot Scenarios, Knot Card Lucky Dip, Lace up challenge (using one boot and timing the tying) Match Box Wrap, Mini Gadgets (using skewers) Save Yourself, Spaghetti tie, Tie up the dog, Time Trial, What's in the Bag, etc. If you don't have enough volunteers to check the challenge points provide ten envelope or plastic bags numbered for each challenge. Members then go around the challenge and put their Match box, scenario and rope in that plastic bag writing the name of the knot on the bag next to the number of the challenge. Knots are 'marked' together and points awarded.

Challenger

Draw up a challenge system according to the experience of your group. Have three levels of ability. Challenging on your own level or below (and being correct) earns one point; challenging a level above two points; challenging two levels above three points. The challenger must tie the knot to earn the point.

Chariot Race

When you get on to teaching the square lashing a good game to have is a chariot race. Give each patrol a chair and two staves or broomsticks. They then have a fixed period (say fifteen minutes) to build a chariot which simply involves square lashing each of the staves to either side of a chair so that they extend equally in front and behind of the chair. Warn members that it is vital that the lashings are very tight. One member of each team sits on the chair and the other team members must carry the chair by the staves only. Then set up a race track, if space is limited have each team running one at a time and time them however if you can hold the race in a larger space it is possible for all teams to race together and run around the course. Weak lashings will be disclosed since they will work undone. A suitable penalty should be imposed for any team that drops their passenger.

Variation: use three staves lashed together on which a patrol member sits to be carried around.

Chasm Cross

A good challenge for a camp or fun day. The patrols are placed on one side of a creek or chasm and must get the entire patrol to the other side using various ropes and knots. This challenge may form part of a wide game and be themed; i.e. Your Artic expedition comes across a chasm of unknown depth in the ice. Your scientific teams realises the river of blue sludge is radio active no one must touch it.

Champ-Not

Have members form a circle, each with a length of rope. The leader calls a knot; members tie it and then drop the knot at their feet. The first to tie the knot correctly drops out, and then the remainder of the members play again. This continues, using the same knot until only a few members are left and declared the 'Champ-nots' for that knot. The beauty of this game is that it gives the most practise to those that need the most practise.

Chocolate Bar Game

Play this game after you've taught the members a specific knot, for example, the sheepshank.

Equipment needed: apron, placemat, knife and fork, oven mitts and wrapped (many times with newspaper over and over again) a chocolate bar, and one dice.

Put all the equipment in the centre of a circle. Have the members sit around the equipment in a circle. The dice is passed around and everyone has a turn at throwing a one. When you throw a one you get the rope and start tying the knot, meanwhile, the others are still throwing the dice. If you tie the knot successfully before someone else throws a one then you get to put on the oven mitts, your apron, put the chocolate bar on the placemat pick up the knife and fork and try to cut a piece of chocolate. However once someone else has successfully tied the knot you have to hand over the equipment and become part of the circle again. Share the chocolate at the end of the game.

Leader's Resource 1 (contd)

Circle tug

Mark out a circle on the floor. Three or four players stand around this circle with a rope. At the first signal they must tie this rope to the rope of the player on their right with a given knot. On the second signal they must attempt to pull the other players into the circle. Once the player steps inside the circle they are eliminated and let go of the rope. The play continues until one player is left.

Clothes line challenge

Each patrol is given a variety of ropes to construct a clothes line. They must use sheet bends, reef knots, clove hitches and round turn and two half hitches. Give a number of items to peg on the line and award points for first patrol finished and correct knots.

Clove Tree

A circle is marked two metres around a tree for each patrol. The patrols each have a 10 - 15 metre rope. They must tie a clove hitch around the tree without entering the circle. No other tools may be used. The winning patrol is the patrol taking the least time to complete the tie.

Doctor Knots

Doctors tie very small knot when they suture their patients sometimes practising in a match box. Have members try this. Prepare the match box with a small amount of string or dental floss pushed through each side of the match box and knotted so that it will stay.

First Aid Knotting

Provide several slings to tie reef knots and clove hitches with. This may be done just using slings to tie the knots or as a relay, or, when a little more experienced, as a relay tying slings on a person. Have one person per patrol as the injured out the front of that team and call out types of slings to be tied i.e. full arm sling, elevated sling, collar and cuff sling; or call out the injury fractured ulna, infected tooth, snake bite (immobilisation slings).

Fisherman's Knots

When the basic knots are mastered you may choose to learn fishing knots and this is good practice for the real thing. Make your game realistic by using fishing line. Use large hooks to start with and de-barbed hooks for practice. Teach the members the basic fisherman's knots – the blood knot, clinch knot, perfection loop and line-to-leader knot, and use relays to develop skill and speed.

Flagpole relay

Each team has:

- A³ black and white copy of flag. Any flag will do (*Use a flag from another badge activity for example, Missionary project, Flags.*)
- Two lengths of timber suitable for making a flagpole
- Ropes to lash poles together
- Halyard and grommet rope
- Pegs if desired, or rope to shear lash the pole to a table leg or such like
- Colouring pens

The aim is to construct a flag pole. On the given signal, teams must correctly colour, construct their flagpole and hoist the flag. Teams should work together with all members involved.

Gift Wrapping

Each team chooses a member to wrap as a gift. Use large sheet of butcher's paper and string for members to practise their packer's knot.

Leader's Resource 1 (contd)

Group Knots

Each member has a length of rope. The patrol of team numbers off. Patrol leaders are given a set of instruction. Member number one must tie their rope to a tree/chair leg with a round turn and two half hitches, Member two joins their rope to member one with a reef knot, member three ties a clove hitch around the ankle of member four, member four must join their rope to member five's with a sheet bend, member five ties their rope to member one wrist with a round turn and two half hitches. These instructions can be varied for each patrol depending on their experience or the same issued to all patrols. Each time the game is played change the instructions to increase the difficulty.

Hand a clove Hitch

Tie a rope across the hall or between trees. Each patrol or member has a rope. Members tie a clove hitch to the rope. As an individual challenge this could be part of a challenge course or a patrol challenge -the patrol with the most correct wins (Supply equal number of ropes to the patrol so that in the smaller patrol one member may tie two clove hitches.)

Hauling Race

Each patrol is given a rope and a log. They must tie the rope to the log using a timber hitch and haul the log over a certain distance. This can be a time trial; or a true race if you have enough logs and ropes; or part of a challenge course.

Lace up Relay

Use a football boot for each team. As in a relay game have the member run up to the boot lace it up and then tie it in a normal bow. This is a very simple game but can ease the pressure for those who are having trouble tying knots and can be used as a warm up.

Lanyards

Many members will have made Scoobies or Boondoggles and not realised this is a knotting skill. If you use hemp cord you can make a full size lanyard that can be used as a guitar strap, camera strap or name badge lanyard.

- 1 Take two strands of craft lace, plastic string or cordage fold them in half together (while making sure they are the same size, the length itself will depend on the type of lanyard) and tie a knot toward the top to hold them securely together. You may like to thread your cord onto a ring or clip with a larks head. You now have four strands secured at the top.
- 2 Spread the four strings apart, separately, pointing in each cardinal direction of a compass. Hold the left string with one finger (close to the knot). At the same time, pull the left string over the top string.
- 3 Cross the top string over the right string. At this point the top string is covering both the left string and the right string. Now cross the right string over the bottom string. Finally, cross the bottom string over the left string and tuck it under the looped top string.
- 4 Pull each end of the four strings extremely tight to make the first knot. Continue crossing the strings in the same manner until the desired length is reached. The knots will produce a rounded lanyard.

Another method is to quarter the length of rope, mark each quarter with string or tape, tie off loosely at the first quarter mark, begin knotting in the same manner until you reach the third quarter mark, then join all strands together so your lanyard becomes a loop, begin knotting again with all strands, finish off with a metal ring or clip, (to hold your name badge) and back splice; Or make a smaller loop on this end and finish off with a Turks Head. You may need to use an awl to help on so many strands.

Knot Board

Have members construct knot boards for practice or display boards. Use thin ply or craft wood, 20 x 20 cm. These may be painted or lacquered. Drill two holes across the middle to pass short lengths of rope through. Print instructions and glue them onto the board. The board may then be lacquered to seal the instructions. Ends of rope should be whipped or sealed. Use boards to practice knots and members can take a different board home each week.

Leader's Resource 1 (cont'd)

Knot Card

Make up knot cards on cardboard by copying pictures of knots and the instruction on to small cardboard squares. You may like to use **Leaders' Resource 3** as a start.

Knot Card Lucky Dip Relay

The leader has a set of cards with the names of various knots on them. Drawing the cards from a hat or pile the leader gives the patrol five or six cards with knots that the patrol must tie. The first patrol with all knots tied and correct wins. Have a variety of knots with duplicates – this may mean that members in one patrol may tie the same knot and patrol leaders have the option to allocate who ties what knot.

Knot Hangman

Patrols are formed up as in a relay. The leader selects a knot to tie and patrol members attempt to tie it. A portion of the hangman is drawn for each incorrect knot. The first patrol to have their hangman completed is out.

Knot Relay

Give each member a shoelace or short piece of rope. Members run up, tie a specified knot run back and tag the next player. Players may all tie the same knot or number the teams off and call different numbers to tie a different knot. If playing with a numbered team the knot can be graded according to the experience of the players. However you will have to order the team from inexperienced to more experienced, and knots from simplest to more difficult and follow a predetermined list. You may also like to have members draw out the knot from a hat either one player draws for all competitors in that round or each player draws their own. Decide in advance how to handle a competitor who, after making several attempts, is unable to tie the required knot, one possibility is to give assistance so the member will learn and have a sense of achievement.

Knot Relay (timed variation)

Have the patrols line up behind a starting line. A leader stands opposite each patrol and has one or two ropes, and a pole (if desired). At the GO signal, each patrol sends one member forward. The leader asks them to tie a randomly selected knot. The member then must successfully tie that knot before returning to their patrol. When each member returns to the patrol, the next member is sent forward. Count the number of knots tied. Keep moving until the game period has nearly expired. The patrol with the most successfully tied knots wins. By running this relay for a fixed time, there is no need to adjust for different sized groups. Each member should get the opportunity to tie two or three different knots (at least).

Knot scenarios

Following on from the relay expand the members knowledge by reading a scenario instead of a knot name and have members tie the suitable knot, for example, someone is drowning (bowline); my tent pole has snapped (shear lashing); I need to tie this rope to a peg (marquee hitch); Dad needs a long rope but has only short ropes (sheet bend); a friend wants to tie his boat to the post (mooring hitch); Mum wants to tie a parcel (packer's knot).

Knot story

Each member is given a rope. Tell a story that has knot words in it not necessarily the knot name. When that word is mentioned they tie the knot, for example, I went to Cairns to visit the reef ... and went out on a Fisherman's boat ... that had been moored to the jetty ... The fisherman used to be a Trucker. To allow time to tie the knot elaborate and describe the journey, the view, the day.

Leader's Resource 1 (contd)

Knot Trail

Several lengths of rope are tied together with various knots. This is then stretched between two trees or points. Each patrol walks the length of the rope and identifies the knots. The knots can be written down or the patrol challenged to remember the knots in order and report back to the leader. One point can be awarded for each knot correctly identified.

Variations:

- this could be an individual challenge, members record on their own score card;
- an individual within the patrol – each patrol has a recorder at the end of the trail who marks and records the individual score and adds this as a patrol total;
- the players could be blindfolded;
- this could be part of a challenge course.

Knotting Circle

Players in circle, one player is 'in' and ties a knot in the rope and drops it at the feet of a player, who must name the knot correctly and say if it is tied correctly before the 'in' player has run around the circle. Whoever wins, ties the next knot, and so on.

Variation: Players again in a circle with the runner on the outside. The runner places a rope in the hands of a player who must tie a specified knot before the runner return to that spot.

Knotting Relays

Relays can be made more elaborate by putting the knot into context. Use basic knots tied in a useful way: bowline around the waist, tie a sheet bend using two different thickness of rope, tie a clove hitch around a spar or pole. Provide the props either by allocating them to the patrol and initially specifying what each knot requires or having equipment out the front for teams to collect. This will allow members to make a choice as to what they require. Give all members a chance to compete and practice.

Knotty

1. Each member is provided with a thin rope that is half a metre long.
2. Two players sit face to face with about two metres between them. One player holds the rope in front of them and the other member is the guesser. When the member who is the guesser says 'Ready' the other member puts the rope behind them and makes simple, single knots on it, from one to four. The knots are made as fast as possible and when done, the player brings his empty hand out in front of him. The opponent guesses how many knots there are on the cord. The guesser only has one chance.
3. Immediately upon the guess the rope is held out in front of the player who made the knots, in order to prove the guess right or wrong. The member making the knots tries to fool their opponent by only making one knot, or several knots, in the time it should take to make one. Members faces can give the expression that hands are idle when they are actually busy or vice versa.
4. When playing this game as a Patrol competition, each player on each team has a turn at knotting and guessing before the winning side can count. A team can have a brief conference before guessing the number of knots made by the opposing Patrol. In patrol competition it is best to have a referee to keep track of the score made by each team.

Macramé

Many macramé knots originate from classic knots and hitches and there are many quick and easy things that can be made using knots. **Leaders' Resource 2** has a selection of simple projects and many others can be found on the internet although this is not the focus of the badge.

Magic Knots

Just for fun learn some magic tricks with knots. Borrow a book from the library or have a special guest.

Leader's Resource 1 (contd)

Master Knotter

Find the 'Master Knotter' of your group. Supply a variety of ropes and cords of various thicknesses; some lengths of wood or dowel; a stop watch or timer; beans or tokens for points. Award two beans for the fastest and one bean for every correct knot or similar scoring method. Find out who can:

- tie the most reef knots in 60 seconds;
- tie the most sheet bends in 60 seconds. Check that these are tied in different thickness ropes;
- tie the most clove hitches on to a length of wood;
- tie a reef knot in the dark. Turn the light out for a minute;
- tie the most round turn and two half hitches in a minute;
- tie a marquee hitch to a chair leg;
- join two pieces of dowel or wood with sheer lashing.

Match Box Parcel

Each member has one matchbox, paper and string. Play as a time trial allowing three minutes for all members to wrap their matchbox ten times using a reef knot or packer's knot each time they wrap. Provide shoe boxes for those with dexterity problems.

Memory game

Use Knot cards in a memory game. Cards can be made by photocopying pictures as in **Leaders' Resource 3** or made with knots tied in twine, stuck on small cards. Have members make these cards with or without instructions. Or make one set with instructions on one set of cards and illustrations on the second set to 'match' the pairs.

Mooring Relay

A tree or stake in the ground is needed for each patrol. Each member has a piece of rope and must tie themselves to the stake using a clove hitch. The winning patrol is the one that has all tied quickest and correctly. A mooring hitch can be taught and used for this game and then it can be played in water. You could use floating quoits instead of a stake or real mooring point.

Morse Knots

Provide each patrol with a length of rope and a copy of Morse code. Each patrol constructs a Morse code word or message using small and large knots on the length of rope. Swap ropes and see if other patrol can solve the code.

Pairs

Two people put one arm each behind their backs; this may be tied with a stocking, and then using the free hand tie a specified knot.

Patrol Ties

Members form around their patrol leaders with sufficient ropes for each to tie several knots. Leader calls out a knot and the patrol must tie this knot somewhere on their patrol leader. Points are awarded for fastest patrols. After a few rounds knots on the patrol leaders are inspected and points are awarded for correct knots. The patrol leaders keep the score and is then untied and the game played again. Family Ties: This may also be used on a family night with a family team and the adult becomes the patrol leader.

Leader's Resource 1 (cont.)

Rope Throw

One member of group is seated on a piece of cardboard about eight metres away from the group. The rest of the patrol each have one piece of rope about two metres long. On 'Go' each patrol must join all pieces of rope using a specified knot (reef, clove hitch, sheet bend) and throw completed rope close enough to the player on the cardboard so that they can reach it. The player on the cardboard cannot move and the rope must fall within their arms reach. When they catch the rope, they must tie a bowline around their waist and be hauled across the line where the rest of the patrol threw the rope from. Works well on most indoor floors. If you haven't enough rope for all your groups, game can be run by groups in turn using best time to declare the winners. If you have access to four life lines you may use these and then the game becomes quicker and focuses on the bowline with one person tying the knot. This may be included in teaching life saving skills rather than the knotting focus.

Scavenger Knots

Knots are tied around the area inside and outside and allocated numbers. Give each patrol a supply of rope and dowel according to what knots are in the scavenger hunt. The patrol is to find these knots and name them. You may care to make this a free search or a predetermined trail to find the knots as in a normal scavenger hunt using cryptic clues or incidences. 'The dog has escaped from my car' would indicate the position of the knot and the knot itself. When the knot is found the patrol must copy it using their supplies. When returning to the leader patrols are given points for the name and correctness of the knot.

Save my Child

Similar to Rope throw. Requires a broom handle or stout stick. The patrol ties their ropes together, throw to the victim; victim ties a bowline. While victim is tying the bowline the team ties their end to the broom handle with a clove hitch. All pulling must be done on the stick not the rope.

Save Yourself!

Give the members the following situation: You have fallen over a cliff and your rescuers are here with a long rope. Unfortunately you have broken your wrist. They throw it to you, but they can't come down and get you! Tie a bowline around your waist using only one hand so that you can be rescued.

Sheet bend test

Members are paired off and stand a few metres apart. Each has a rope. The first runs to the middle line with the thicker rope and makes an open loop in it and then runs back holding the other end. The second member runs up complete the sheet bend. And then the pairs test the strength of the knot. This may also be done using a reef knot.

Spaghetti or snake tie

Use cooked spaghetti or lolly snakes to tie knots. This could form part of a challenge course.

Stepping Knots

Members line up at the end of the room. When a knot is called, members tie it, a leader checks it and if correct the member steps forward. The process is repeated until one member crosses the line.

String Hunt

Spread lengths of string around your playing area, if outside use bright coloured string or thick wool. Have each member search for the string and tie pieces together with a reef knot. The patrol leader should check that this is correctly tied. After the specified time the patrol with the longest correctly tied 'rope' wins.

Three Legged race

Use reef knots to tie triangular bandages around the ankles and hold three legged races. This is good practice for immobilisation bandaging.

Leader's Resource 1 (cont'd)

Three Legged Convoy

The first member of the patrol ties their ankle to the next member's ankle with a bandage and a reef knot; runs around the set course back to the patrol where the second member ties the third member's ankle to theirs. The three then run around the course and the process is repeated until all member are tied together

Tie Up The Dog

This game is good for teaching uses for the bowline. Have stuffed animal especially dogs available for the game. Each patrol requires a chair, and a dog (or animal) & rope for each player at one end of the room. The patrols stand in line with their chair at the other end of the room. Each member in turn has to run down to the chair, tie their dog to the chair with a bowline and go back to the end of their line. The first patrol to have everyone in the line sitting down and all the dogs tied to the chair is the winner.

Time Trials

Have a stop watch or egg timer and see who can tie each knot within 60 seconds.

Tug of War

Each patrol is given several ropes. These must then be tied together before the tug of war begins. The winning patrol would naturally be the one who pulled the opposing patrol over the line but also whose rope held together. You may specify the knot to tie such as sheet bend. You may choose to give experienced members various types and thicknesses of rope which they must tie together with appropriate knots (i.e. reef knot for ropes of even thickness, sheet bend for uneven thickness). You may choose to challenge the winning patrol to name the knots. A variation is to use a point system. 'Winning' is worth two points and every knot tied and named correctly is worth two points. Knots could also be specified so that the first person in the team ties a reef knot the second two bowlines. This will allow the patrol leader to place the less experienced knotter with the knot they know.

Water Knotting

A game for camp or summer. Have a bucket of water and teaspoons for each patrol and a pile of ropes in the middle. A patrol, or one member from a patrol, is called to the middle to tie a specified knot. During the time they are tying the knot they are splashed with water using the teaspoons.

What Knot

Members sit in a circle each with the name of a various knot. A leader stands in the middle of the circle and makes a statement about a knot. For example, I am joining two ropes of equal thickness. The member/s with that name run around the circle and back to their place. This will help members associate the use of the knot with its name. You may try the game with a member in the middle (and the leader out of the circle). When the statement is read, those members with the name that corresponds run across the circle to swap place with a member in the middle. The member in the middle must take the place of one of the members who runs across the circle.

What's in the bag?

Have knots tied and placed into material bags. Members must name the knot by feeling through the bag. With inexperience knotters you may get them to feel inside the bag without looking. Have eight to ten knots.

Wild Horses and Stockmen

Members are divided into two teams. One team are the stockmen and have a length of rope. One team are the wild horses that must be caught and secured with a bowline then led to the hitching rail and tied with a clove hitch. The wild horses naturally do not wish to be caught but once the rope is around their waist must remain still for the 'stockman' to tie the bowline. Once all horses are caught change teams.

Variation: Have each patrol split in two, or one patrol to catch a specified patrol. Stockman usually choose the horse that they want to catch. Members who are wild horses may work together to prevent being caught.

Leader's Resource 1 (cont.)

Woggle

Making a woggle is an interesting skill and is just one knot – the Turks Head.

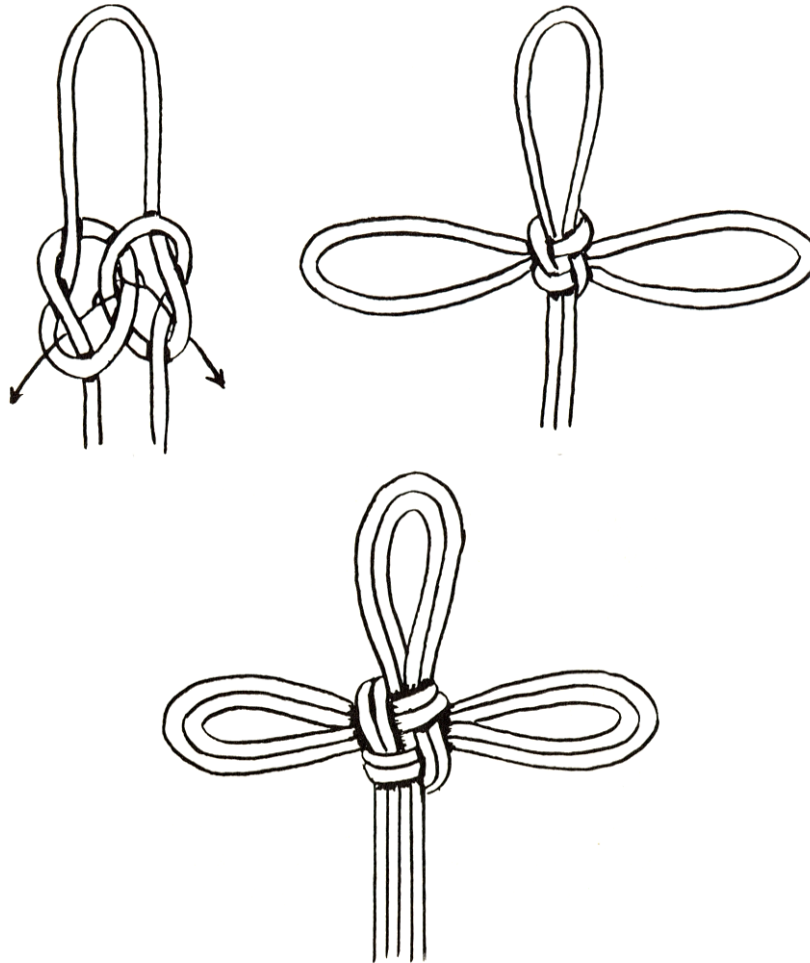
Leader's Resource 2

Simple Bookmark

1. True Shamrock Knot

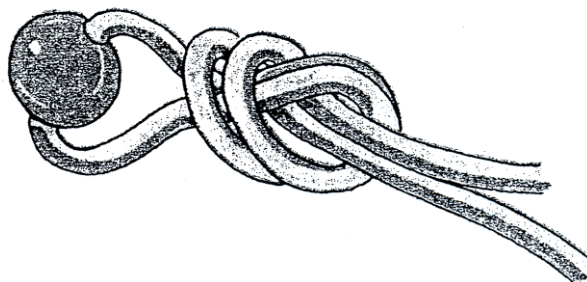
Use string, leather or ribbon to make an interesting bookmark.

Using a length approx 30 centimetres long tie a loose thumb knot almost in the middle. Turn the string around your finger to make a loop and tie a second thumb knot through the first. Pull the middle through the very bottom turns of the string as per diagram. This can also be tied using a doubled length of cord.



2. Double Overhand Bookmark

Thread a bead (or shell or coin that has a whole drilled in it) in the middle of a short piece of ribbon, thonging or string. Tie a double overhand to keep it in place. At each end thread another bead and tie in place with a clove hitch, then thread another and tie in place with a round turn and two half hitches.



Leader's Resource 2 (contd.)

Macramé Bracelet

Suggested Parts:

- Three metres of one millimetre diameter hemp cord
- Five to eight glass roller beads, or any beads with at least a two millimetre large hole
- One crow bead, or any 10 millimetre bead with about a three millimetre large hole

Tools:

- Scissors or clippers
- Tape (masking tape works well)
- Optional: a clipboard makes your project portable

Instructions:

1. Cut cord into the following pieces:

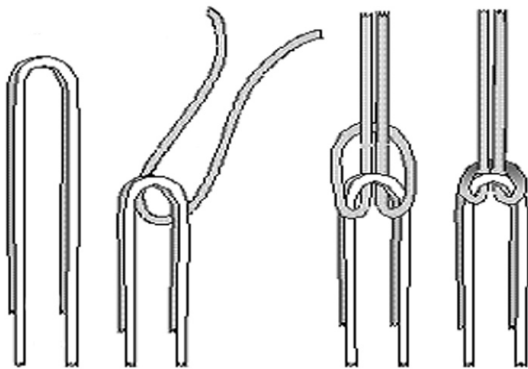
One 20 centimetre piece

One 40 centimetre piece

This leaves a remaining piece about 240 centimetres

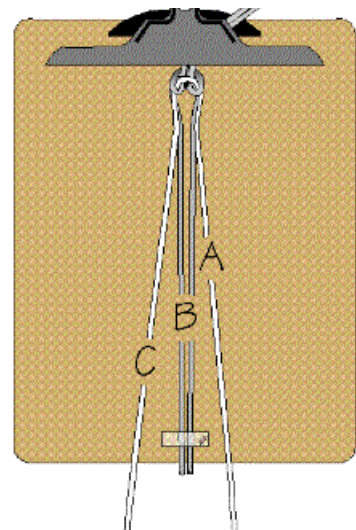
2. Connect cords:

- Find centres of the 40 centimetres and 240 centimetres pieces of cord. Place the two centres (loops) of each cord on top of one another and leave all four ends dangling free.
- Find centre of the 20 centimetres piece of cord.
- String the centres (loops) of the two cords into the centre of the 20 centimetres piece. Bring all four loose ends back through the centre loops and pull tight. This knot is a half hitch.



3. Anchor the project.

This helps keep track of what step to do next, and secures the project in place. A clipboard works well and allows for movement and storage of an unfinished piece. Secure the 20 centimetres piece of cord under the clip and let the long pieces of cording dangle. Tape the short pieces at the bottom of the board. Taping the whole project to a table will do the same thing as a clipboard, but is not as convenient if you want to move your project.



Make sure cording is even and all ends still match up.

Leader's Resource 2 (cont'd)

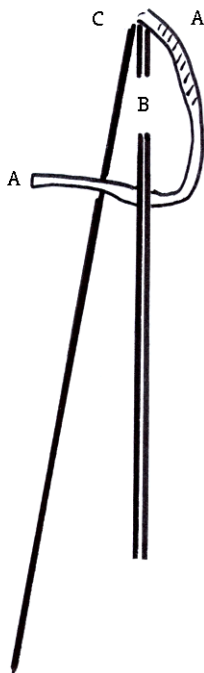
4. Start knotting:

This bracelet uses one basic knot, the half knot. To create a half-knot, follow the diagram below, in which the long (knotting) cord on the right side will be "A," the two short (filler) cords in the middle will be "B" and the long (knotting) cord on the left side will be "C":

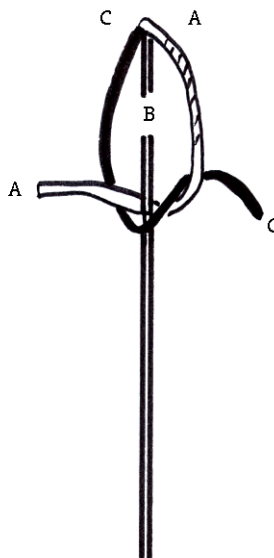
- Start with cord A and bring behind cords B, forming a loop with the A cord (about the size of a 50-cent piece) out to the right side.
- Now bring cord C behind the long length of A (now on the left side) and over cords B. Pull through the loop of cord A.
- Pull tight. Hint: The tighter the cord is pulled, the smaller the knot will be. Find the desired size and pull at that tightness throughout the project for consistency.
- Repeat step four, but this time, start on the left side instead of the right.

Starting from the right:

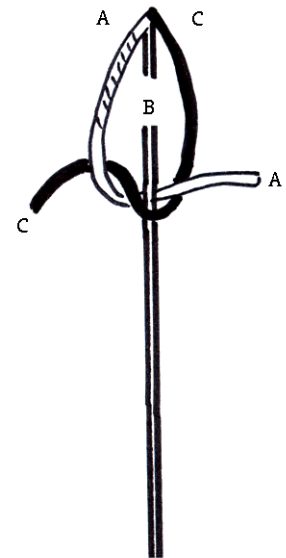
#1



#2



Starting from the left:



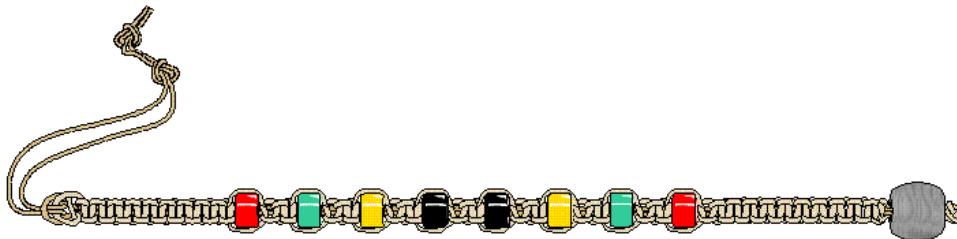
5. Alternate sides

One knot starting from the left, the next knot starting from the right for approximately 20 knots. Be sure to create an even number of knots. Pull knots consistently snugly. Hint: keep track of which side you are working on. After a knot is pulled tight, notice that the side to be worked on next is the side with the cord facing forward, not the cord facing the back.

Leader's Resource 2 (cont'd)

6. **Add beads:** Slide a bead over cords B (the fillers), and push it up close to the last knot (but don't bunch up the knots). If the bead is difficult to slide over the cord, twist the bead as you push it on.
 - Go around the beads with cords A and C. Then make a knot as usual with cord A (starting on the right side, assuming your last knot before adding the bead started on the left).
 - Push knot up to the bottom of the bead.
 - Add three more knots (left, right, left).
 - Add at least two more beads the same way (adding four knots after each bead). When you add your third bead, test the length (on your wrist or ankle). Does it go about half way around? If yes, then this is the middle -only add two more beads. If no, then continue adding beads (with four knots after each bead). If you add more than eight beads, your bead pattern will probably be off-centre. Don't worry if it seems like the project won't be long enough. That piece of cord hanging back at the beginning makes this project any desired length.
7. **After adding your last bead,** make about another 20 knots (the same number you made at the beginning).
8. **Make the clasp:**
 - After design is finished, slide the 10 millimetres pony bead onto all four cords. Pull snug and tie a knot. This bead will go through a loop made on the opposite side.
 - Trim cords and apply a drop of glue to secure the knot.
 - Measure bracelet on wrist (or anklet on ankle) to find the desired length needed.
 - On the opposite side of the bracelet (the 20 centimetres length of cording) tie a knot at desired length. About two centimetres past that knot tie another knot.

Trim excess cord and apply a drop of glue to secure the knots.



Leader's Resource 2 (contd)

Faith Bracelet

Reprinted from Bible Crafts 'n More by Kim Thomas

You need:

150-180 centimetres hemp cord

Opaque Beads (five of each)

Black – Our Sins

Red – The blood he shed for us

White – Purity

Blue – Baptismal water

Green – Spiritual growth

Yellow – The heavens shine upon us

Instructions



- Cut 30 centimetres off hemp for centre cord. Fold remaining hemp cord in half. Lay the centre cord between fold. Holding all three cords together, tie an overhand knot by making a circle and pulling all the cords through it (see diagram at left). Pull knot so you end up with a one centimetre loop at the top.



- Make a square knot by bringing left cord in front of centre cord. Now bring the right cord over the left cord, around the back of the centre cord and through the loop. Pull tight.



- Now reverse it. Bring the right cord in front over the centre cord, the left cord over, around the back and through the loop. Keep knots tight.
- Tie five more knots.


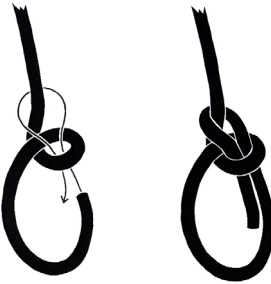
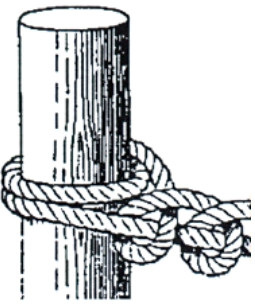
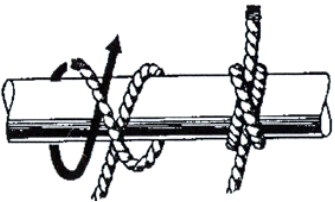
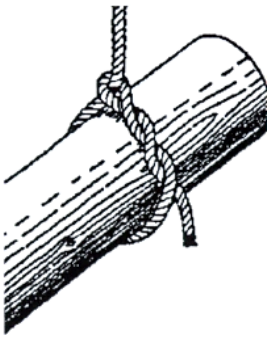
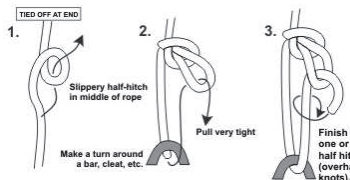
- Make the first cross by tying the first half of the square knot, then thread one black bead on centre cord and tie second half of square knot. Then thread one black bead on each outside cord and tie first half of square knot. Next thread two black beads onto centre cord and tie second half of square knot.
- Repeat for each colour cross, then tie five more square knots. Tie all three strands in an overhand knot. This will slip through loop on other end to secure bracelet around wrist. Trim to desired length, leaving them three centimetres or longer.



Leader's Resource 3

Knot Card

Photocopy resource onto cardstock, laminate and then cut. Punch a hole in the top corner and place on a ring for a quick reference.

<h3>Reef Knot</h3> 	<h3>Bowline</h3> 	<h3>Round Turn & Two Half Hitches</h3> 
<p>Sometimes known as the Square Knot. Used in the early days to 'Reef' a sail to cross spar – easily undone with one hand. The Reef Knot is used for tying two thin ropes of equal size together. It is the preferred first aid knot used for tying bandages. It lies flat, holds well and is easily untied. Most easily tied using the Chant, 'Right Over Left, Tuck End Under. Left Over Right, Tuck End Under' ... Not to be confused with or mistakenly tied as the 'Thief Knot'.</p>	<p>The Bowline is fundamentally a rescue knot that you tie around yourself or in a rope that you throw to someone who needs a lifeline. The knot was originally used to tie a line in the bow of a ship. Form a small loop (the direction is important), and pass the free end of the knot up through the loop, around behind the standing part of the rope, and back down through the loop. A chant used by many to remember this knot is 'The rabbit comes out of the hole, round the tree, and back down the hole again', where the hole is the small loop and the rabbit is the running end of the rope.</p>	<p>Used to secure a rope to a pole or ring. Can be used to start or finish a lashing. Pass the running end of the rope over the pole twice. Then pass the running end over the standing part of rope, and tuck it back up and under itself, forming a half hitch. Repeat this for a second half hitch. Often used instead of a Clove Hitch as the half hitches prevent this knot from unrolling, as they have the effect of locking the knot.</p>
<h3>Clove Hitch</h3> 	<h3>Timber Hitch</h3> 	<h3>Truckies Hitch</h3> 
<p>Used to attach a rope to a pole, or to start and finish lashings. This knot provides a quick and secure result. It rarely jams, and can in fact suffer from the hitch unrolling under tension if the pole can turn. If you are in a situation where the clove hitch may unroll, add a couple of half hitches with the running end to the standing end of the knot, turning it into a 'Clove Hitch and Two Half Hitches'!</p>	<p>Used to attach a rope to a log, or where security is not an issue. This knot tightens under strain, but comes undone extremely easily when the rope is slack. Wrap the rope around the log, then pass the running end around the standing part of the rope forming an eye. Finally twist the running end around itself three or four times. Jolly useful for dragging logs back to the camp fire!</p>	<p>Use this knot to pull down a load on your car roof, boat, trailer etc. ... You'll wonder how you every got along without it! Tie off one end of the rope. Lay the rope over the load to be tied down. Tie a slippery half hitch in the middle of the line to form a small loop. With the free end make a turn around the trailer bar/eye hook etc. and bring the free end back up to the loop in the line. Feed through the loop and pull down tight. Secure it off with half hitches tied snugly to the loop.</p>

Handout 1

Guards/Rangers

Knot Charge

Knot	Diagram	Uses

Handout 2

Guards/Rangers

WonderWord

BOWLINE

REEF

WHIPPING

SQUARE LASHING

TIMBER HITCHES

TRUCKERS HITCH

FIGURE OF EIGHT

TURKS HEAD

DOUBLE OVERHAND

SHEEPSHANK

MARQUEE HITCH

C	E	I	R	E	E	F	Z	Y	A	O	V	L	D	L
I	N	H	C	T	I	H	S	R	E	K	C	U	R	T
W	Q	N	I	H	S	A	L	E	R	A	U	Q	S	B
M	F	A	C	J	F	D	H	J	F	R	I	K	Z	W
D	V	B	Z	L	D	D	E	R	H	W	W	E	O	K
C	S	T	D	O	A	T	U	R	K	S	H	E	A	D
E	R	S	H	E	E	P	S	H	A	N	K	S	W	K
D	N	A	H	R	E	V	O	E	L	B	U	O	D	Q
L	H	C	J	S	M	R	B	O	W	L	I	N	E	C
Z	Q	T	I	M	B	E	R	H	I	T	C	H	E	S
M	Z	H	C	T	I	H	E	E	U	Q	R	A	M	F
I	Y	Z	M	E	W	I	J	A	J	T	P	R	U	Y
E	W	Q	R	R	O	W	H	I	P	P	I	N	Q	S
X	P	F	I	Q	U	R	E	O	F	E	I	Q	H	T
V	F	F	W	X	H	J	I	P	Q	L	Q	X	C	Q

Devotional ideas



- 1. Title:** Knotted together
Bible: Hebrews 3:13a (CEV)
Thought: Each of us must work together and encourage one another
Supplies: Bible

Have members form a circle and reach into the circle with their right hand and take the hand of someone else not adjacent to them. Ask members to put their left hands in and take hold of someone else. Now members are to untie each other without letting go of hands. Have members encourage each other. Ask members why we need encouragement.

Read the Bible verse. Comment that, as in the game, we solved our problems by working together and encouraging each other. This is what we can do in our daily life.

Challenge members to speak an encouragement to someone each day this coming week.

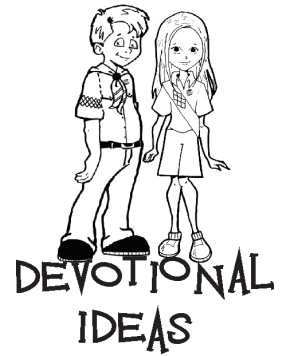


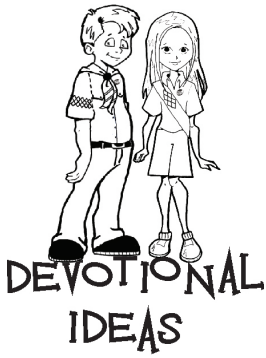
- 2. Title:** Friendship knots
Bible: Proverbs 17:17
Thought: We are friends
Supplies: Bible, short ropes

Members are given a short rope to tie to the end of their neighbour's rope. When all ropes are tied you will have created a large circle. Indicate to members that altogether the ropes form a circle. Even though each rope is part of that circle they are still separate ropes, they have individual qualities. This is the same for us in SAGALA. We are all separate individuals with our own individual qualities but we come together to form SAGALA. The circle represents our circle of friendship; we share our friendship and the values of SAGALA.

Ask members what are some values we share in SAGALA. In this circle there is no end so too it should be with our friendship. Read the Bible verse. We should aim to continue our friendships and be kind and accepting of others.

Finish with a prayer asking God to tie us together with bonds of kindness, love and friendship.





Devotional ideas

- 3. Title:** Across the gap
Bible: John 14:6
Thought: Jesus is the only way to the Father
Supplies: Bible, two long ropes, four chairs, sheets of newspaper

Tie the end of each rope to a chair and place the rope along the floor with a small gap between the ropes. The chairs will hold the ropes straight and allow them to be moved easily to enlarge the space between the two ropes. Members are to jump the gap clearing it completely. When all members have cleared the gap move the chairs further apart, ensuring that the ropes remains flat on the floor. Continue this until you have only one person clearing the gap. Then move the ropes apart a final time so that even this person is unable to clear the gap.

Read the verse. This game illustrates that Jesus is the only way to reach the Father. We cannot reach God by our own efforts - there is a gulf separating us like the gap between the ropes. We can try all sorts of methods like by 'being good' or 'saying our prayers' but none of them will work. We need Jesus to bridge that gap.

Now place the sheets of newspaper in the gap and ask members what they think this represents. Now with Jesus bridging the gap we can all cross. Jesus made the way by dying on the cross to take our sins away.

Devotional ideas



4. Title:

Odds and Ends

Bible:

Colossians 3:12-14

Thought:

What SAGALA means to us

Supplies:

Bible, a variety of everyday objects, for example, a candle, rope, small Bible, compass, tracking sign, friendship bracelet, battery, pin, ring, coin, book, wash cloth, mint, ruler, rope. You will need to have at least one item for every member.

Have the members sit in a circle and place the everyday items in the middle. Ask them to look at the items and then choose an item that they think represents what SAGALA means to them. You may need to give an example here: 'The battery means that when I come to SAGALA I feel re-charged and energised'; 'the compass reminds me to point my life to Jesus'; 'the Bible reminds me that SAGALA teaches me about Jesus'. Ask members to pick up their item then share why they chose that item.

Read the Bible passage.

End the devotion in prayer, ask members to look at the person on their right and then the person on their left. Tell the members that during the prayer they will be asked to pray for the person on their right and then the person on their left.

Prayer: Lord there are many good things about SAGALA, but we know that the best thing is that you are here with us. Help us to care constantly for the members of *(insert your corps name)* SAGALA. To love and support each other as you have taught us. We would now like to silently pray for the person on our right hand side. *(Leave one or two minutes in silence)*. Now we would like to pray for the person sitting on our left hand *(Leave one or two minutes in silence)*. Lord, thank you for listening to our prayers. Help us through the coming week to remember our SAGALA friends until we meet next week. Amen.

