

Woodinville Day Camp Knots Progression by Grade

Pixies	K-1: Daisies	2 nd	3 rd	4 th	5 th	6 th
Learn the overhand knot using licorice ropes. Practice shoe tying with ropes and dowels.	<p>Learn the overhand knot using licorice ropes.</p> <p>Practice shoe tying with ropes and dowels.</p> <p>Play the shoelace relay race. Half kids on one side, other half about 20 ft away. Put on a pair of oversized boots and tie shoelaces. Run to other side, untie, give boots to next kid who ties them and runs to next kid.</p>	<p>New skill: tie and use a larks head knot.</p> <p>New terms: standing end, working end</p> <p>Review overhand (shoelace knot).</p> <p>Materials needed: individual rope, dowels.</p> <p>Ask: "Who uses knots?" Climbers, sailors, fishermen, surgeons... YOU!</p> <p>Make tutu using larks head knot, yarn, ribbon</p>	<p>Review overhand (shoelace knot) and lark's head knots. Review should take no more than 10 minutes.</p> <p>New skill: tie and release a square knot.</p> <p>Materials needed: blue/red rope, dowels.</p> <p>Overhand knot review will lead into square knot. Play giant rope game: everyone tie their rope to neighbor's rope to make giant circle. Everyone stands inside circle with rope at waist and leans back letting rope hold you.</p>	<p>Review overhand knot, larks head knot, square knot. Review should take more more than 10 minutes.</p> <p>New skill: tie and use a clove hitch, tie and use double half hitch, make a round lashing (flag poles).</p> <p>Materials needed: rope, dowels, round poles.</p> <p>Play game to see how long of a pole they can lash together on ground.</p>	<p>Review overhand knot, larks head knot, square knot, clove hitch and double half hitch.</p> <p>New skills: Learn to lash a washstand tripod; tie a taut-line hitch.</p> <p>Materials needed: clothesline (for lashing) and poles.</p>	<p>Review overhand knot, larks head knot, square knot, clove hitch and double half hitch.</p> <p>Review lashing a washstand tripod for 6th grade challenge.</p> <p>Materials needed: clothesline (for lashing) and poles.</p>
Boys	<p>Younger Boys: Teach overhand knot, larks head knot, square knot.</p> <p>Materials needed: rope, dowels</p>		<p>Older boys: Teach clove hitch and how to lash a washstand tripod</p> <p>Materials needed: clothesline (for lashing) and poles.</p>			

Pixies / Daisies 1st grade – 30 minutes. New skill: overhand (shoelace) knot. Materials needed: licorice ropes, individual lengths of rope, long rope.

Knots are useful! Where do you see knots being tied everyday?

Teach overhand knot (left over right). The overhand knot is the start for many other knots.

Practice overhand knot until campers are comfortable.

Play a knots game.

Suggestions:

Tug-of-War: use a long length of rope, have each camper tie an overhand knot in the rope, one at a time until each has a knot to hold onto.

Teach the Magic licorice knot trick – “Slide off”: Tie an overhand knot in the center of a licorice rope. As you pass your hand over the rope, the knot will “magically” vanish (you will secretly insert a finger into the knot as you pass your hand over the top and slide it down the rope). *From the book Self-working rope magic: 70 foolproof tricks By Karl Fulves, Joseph K. Schmidt*

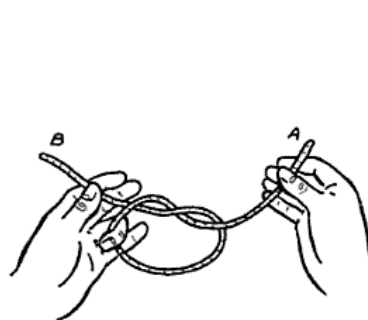


Fig. 12

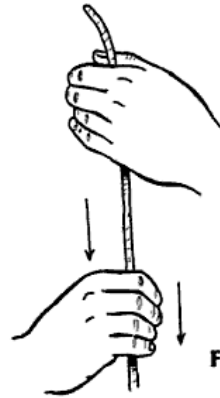


Fig. 13

Brownies 2nd grade – 30 minutes. New skill: tie and use a lark's head knot. New terms: standing end, working end, bight, hitch. Review overhand (shoelace knot). Materials needed: individual rope, dowels.

Ask: "Who uses knots?" Climbers, sailors, fishermen, surgeons... YOU!

OVERHAND KNOT REVIEW When would we use an overhand knot?

Stops a line from slipping or pulling through a hole. Can be tied anywhere, but often at the end. "Bumps" can be used to make a rope ladder or Tarzan swing, or as a grip on a tug-of-war rope. Used for knotting thread ends, or making a quick fix in the end of a rope to keep it from unraveling.

Cons: difficult to untie, especially when wet.

Demonstrate overhand knot.

Instructions: Make an "O" in your rope by crossing the *working end* in front of the *standing end*.

Standing end: the end of the rope knot involved in making the knot.

Working end: the end of the rope being used to make the knot.

Pass out lengths of rope. Practice together. Make sure everyone successfully makes an overhand knot. Have them identify the standing end and working end of the rope.

LARK'S HEAD, a.k.a. Girth hitch, cow hitch, – (pair up and use dowels)

Often used to attach a rope to a ring, or around an object when there is pull on both working ends.

Pros: Easy to tie; doesn't jam.

Cons: Not secure if only one strand has load.

Demonstrate Lark's Head Knot.

Instructions:

To tie with a length of rope with two free ends: Fold rope in half to make a *bight*. Wrap bight over object from front to back. Reach through the bight and grab the rope ends to draw them through. Pull tight. Practice.

Have campers pair up and pass out one dowel to each pair (for odd numbers, partner up with a P/A/T or unit leader).

Walk campers through the knot again, and then let them practice twice on their own. Switch and walk the next camper through, and let them practice. Now have them take turns until they are able to tie on their own without help.

Alternative method... (if there is time, and they are comfortable with the first method)

To tie with only one end free: Loop working end over object from front to back. Take working end from back and cross over in front of standing end. Insert working from back to front of object, forming loop beside existing one. Pull through object and tuck down into loop you just made from behind.



Play a knots game.

Suggestions:

Knotting pairs – campers pair up and try to tie knots, each using only one hand (overhand knot, or lark's head – for lark's head, one partner holds the dowel, the other ties the knot one handed).

Knot relay – split into two even teams, with a judge for each team. Each team sits in a circle and has one piece of rope, which should be held by the person who will go first. Call out a knot name. First person runs around the circle, sits back in place and ties knot correctly. Rope is then passed to next player, who unties the rope before running around the circle, comes back to tie, and so on, until everyone has tied/untied the rope.

Brownies 3rd grade – 30 minutes. New skill: tie and release a square knot. New terms: Review overhand (shoelace knot) and lark's head knots. Materials needed: blue/red rope, dowels.

Review should take no more than 10 minutes. Overhand knot review will lead into square knot

Who uses knots? Climbers, sailors, fishermen, surgeons... YOU!

LARK'S HEAD REVIEW, a.k.a. Girth hitch, cow hitch, – (pair up and use dowels)

Often used to attach a rope to a ring, or around an object when there is pull on both working ends.

Pros: Easy to tie; doesn't jam.

Cons: Not secure if only one strand has load.

Demonstrate Lark's Head Knot.

Instructions:

To tie with a length of rope with two free ends: Fold rope in half to make a *bight*. Wrap bight over object from front to back. Reach through the bight and grab the rope ends to draw them through. Pull tight.

Practice.

Have campers pair up and pass out one dowel and one length of rope to each pair (for odd numbers, partner up with a P/A/T or unit leader). Walk campers through the knot again, and then let them practice twice on their own. Switch and walk the next camper through, and let them practice.

Add alternative method... (if there is time, and they are comfortable with the first method)

To tie with only one end free: Loop working end over object from front to back. Take working end from back and cross over in front of standing end. Insert working from back to front of object, forming loop beside existing one. Pull through object and tuck down into loop you just made from behind.

OVERHAND KNOT REVIEW What knot do you use when you tie your shoes?

Demonstrate overhand knot.

Instructions: Make an "O" in your rope by crossing the *working end* in front of the *standing end*.

Standing end: the end of the rope knot involved in making the knot.

Working end: the end of the rope being used to make the knot.

Pass out lengths of rope so each camper has their own. Practice together. Make sure everyone successfully makes an overhand knot. Have them identify the standing end and working end of the rope.

SQUARE KNOT a.k.a. Reef Knot.

Purpose: used to join together two ropes of the **same thickness**.

Trivia: was widely used in ancient Greece and Rome to decorate handles of vases. Romans called it the "Hercules Knot" because they said he invented it.

Cons: consists of two overhand knots tied in opposite directions; if tied improperly, a "granny knot" is formed which will slip and won't bear a load.

Can easily slip into a lark's head knot, which makes it unsuitable for safety uses/rescue.

Demonstrate Square Knot.

Instructions: (*When teaching, blue will be in your right hand – ie. reverse of the instructions) Hold blue end at top of left-hand rope (standing end) and red at top of right-hand rope (working end – review terms if necessary). Cross red working end in front of left rope to make an "X". Tuck under toward back and come up to make "horns" shape. Then cross red working end, now in left hand, in front of right (blue) rope to make an "X". Tuck under toward back and come up.

It *should* look like 2 interlocking U's, with both legs together either under or over intersecting loop.

To release: Pull top end back over knot in opposite direction. Turns it into a lark's head, which can then slip off.

Learn and Practice.

Pass out two red/blue ropes to each camper. Partner up if more than 11 in the group. Walk them through a couple of times, and let them practice on their own.

Play a knots game.

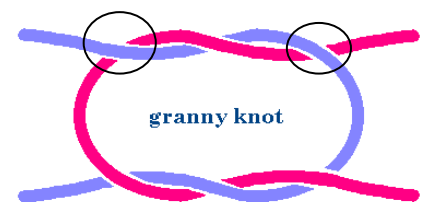
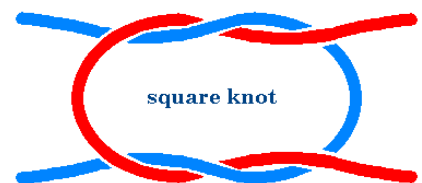
Suggestions:

Cat's Tail (requires 20-30 pieces of rope hidden in advance within a predetermined space) – Hide

all but 3 or 4 pieces of rope. Divide group into 3 or 4 teams of equal size. Each team chooses a

"cat" who stays in one spot and holds 1 of the rope pieces. At a given signal, all players except

cats search for hidden ropes within announced parameters. Finders take 1 rope at a time back to their cat to attach to the last piece of rope using a square knot, then can go find a new piece of rope and repeat until all pieces have been found. Team with longest tail wins.



Juniors 4th grade - 1 hour. New skill: tie and use a clove hitch, tie and use double half hitch, make a round lashing (flag poles).

Materials needed: rope, dowels, round poles

Knots review – have examples of each knot prepared ahead of time.

Overhand knot – Who remembers how to tie an overhand knot? Check their knots. Have them show someone who doesn't know how to tie the overhand knot.

Where do we most often use the overhand knot?

Lark's head – Also called a girth hitch or cow hitch. Demonstrate. When would we use this knot? Partner up with a dowel and length of rope. Give everyone the chance to tie a lark's head twice.

Square Knot – How many ropes does this knot require? (2) Ask: "What is a square knot used for?" This knot can be used to join 2 ropes of the same thickness, but it can easily slip, and is not suitable for safety uses. Reminder: "Right over left, left over right"

Demonstrate Square Knot.

Walk through tying square knot together (partner up if more than 11 campers).

Practice tying and untying on their own.

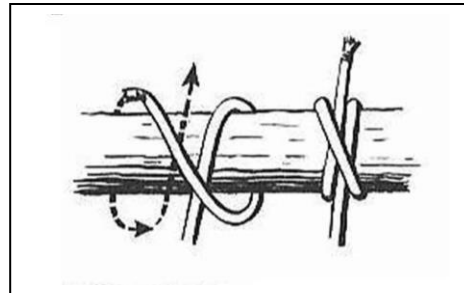
Square knot circle test

This game demonstrates the strength of the square knot.

Players sit in a circle holding their ropes. Each girl ties one end of her rope with a square knot to the rope of the girl on her left. When all knots are tied, lift the rope over your heads and down to the middle of your back. At the signal, lean back against the rope circle. If any knots aren't tied correctly, you'll fall over backwards.

CLOVE HITCH (Hitch: any knot tied to a post, cable, ring, etc.)

- Used by ancient Greeks; we'll use it in camp to hang dunk bags.
- Easy to tie and untie
- Won't jam under strain
- Stays in one place when tight
- CONS: can loosen with repeated jerking or if the pull isn't constant – don't use it when one end is tied to something that moves, like a boat or a dog.



DEMONSTRATE.

INSTRUCTIONS: (use dowels) Wrap working end around dowel from front to back, coming up underneath to the right of the working end. Cross over and up, making an X, continuing down the back. Come up along the left of the working end and thread under the crosspiece, making sort of a figure-8 shape. Working end should then thread under last cross beside the existing first wrap. Result is X with one line coming up from the bottom in the middle and the other exiting in the middle out the top.

DO ONE TOGETHER.

PRACTICE. At least a few more times until they are comfortable. Reiterate that they should use this hitch when they are hanging their dunk sack. Could practice tying thin rope to a dunk line hanging at Knots station.

HALF HITCH

<http://www.animatedknots.com/halfhitch/index.php?LogoImage=LogoGrog.jpg&Website=www.animatedknots.com&Categ=basics>

- Basic part of many other knots. Nearly identical to an overhand knot. Overhand is usually used as a stopper knot at the end of a rope, while half hitch is tied around something.
- Sometimes used for quickly (and usually temporarily) attaching a line to a post or spar (on a sailboat).

DEMONSTRATE.

INSTRUCTIONS: (use dowels) Form a loop around the object (dowel). Pass the working end around the standing end and through the loop (overhand knot). Tighten into a half hitch by sliding knot over to all working end to come up alongside standing end. When done properly, standing end should be able to take a load.



Note the difference in where the working end falls in the overhand vs. half hitch knot

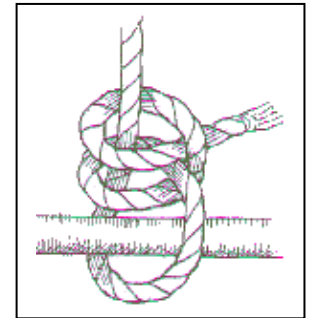


DO TOGETHER.

PRACTICE. At least a couple of times.

DOUBLE HALF HITCH

- Use on its own or to add strength to another knot (such as clove hitch)
- Stays secure even when tied around a square shape (such as a railing), or when shaken
- CONS: can be hard to untie when pulled tight.



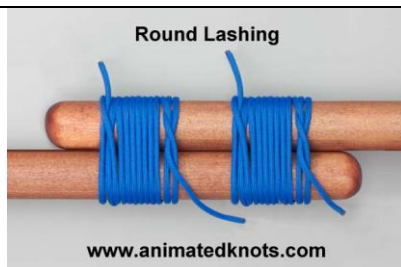
DEMONSTRATE.

INSTRUCTIONS: Make a half hitch (as above). Add another hitch by again passing the working end up in front of the standing end, looping it down and behind the standing end through the loop you just made. Push the half hitches together and pull the working end to tighten.

PRACTICE. First practice making a double half hitch, then practice making a clove hitch with a double half hitch.

Learn Round Lashing <http://www.animatedknots.com/lashround/>

Round lashing is used to tie two shorter sticks or poles together to make one longer stick/pole. In addition to making our flag poles, why else might you want/need a longer stick? (To reach something up high, etc.) Play a game to see how long of a pole they can create.



In this example, a clove hitch is tied around both poles. We will tie the hitch around only one pole at the beginning and end of each lash.

1. Line up pole ends as show in photo.
2. Starting by tying a clove hitch to the top left pole end.
3. Wrap long end tightly around both poles, taking care to lay each wrap alongside the previous wrap. Wrap 8 times.
4. Tie clove hitch around the opposite pole you started with.
5. With new line, repeat steps 1-4 near the other pole end.

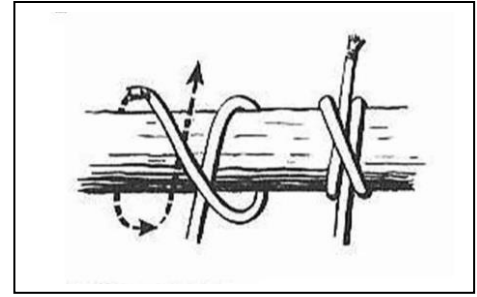
Juniors 5th grade – 1 hour. New skills: Learn to lash a washstand/tripod; tie a taut-line hitch.

Materials needed: clothesline (for lashing) and poles.

Review knots and their uses

Lark's head (girth hitch), Overhand knot, Square knot, Half hitch/double half hitch

*FOCUS ON: Clove hitch – this hitch will be used to lash poles for the tripods.



Learn about tripod lashing

Tripod lashing:

1. Binds 3 poles together at the same point (tri = 3)
2. Can use "plain" (faster, for light structures that won't bear much weight or have safety concerns) or "racked", where the rope is woven between the poles. We will be using racked for safety and stability. Probably not necessary for the wash stations, but is important to know for other purposes, such as cooking.

DEMONSTRATE.

A diagram showing three horizontal poles. An orange rope is used to lash them together. The rope starts with a clove hitch on the top pole. It then weaves between the poles, going over the top pole, under the middle pole, and over the bottom pole. This is followed by five more wraps around all three poles. Then, the rope is wrapped perpendicular to the previous wraps, going between the poles. Finally, the rope ends with a clove hitch on the center pole.	<p>Lay three boards out so that the middle one lays in the opposite direction, approximately 2/3 of the way down the other two boards.</p> <p>Tie a clove hitch to the top board.</p> <p>Start weaving the rope over and under the three boards. Weave the loose end of the starting clove hitch under the first wrap. Pull tight as you go! And lay each wrap flat and tight against the previous one.</p> <p>Do 5 wraps, then start wrapping perpendicular to the wraps, between the poles ("FRAPPING").</p> <p>Do 3 fraps, snugging as you go.</p> <p>Do the second set of 3 fraps in the opposite direction from the first set.</p> <p>End with a clove hitch on the center board. Stand tripod up by crossing outer boards in front of center one, with leftover rope dangling in center.</p>
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Practice.

Campers should try one together, then a second time on their own. They will have further opportunity to practice more lashing as part of their unit's camp kaper setting up washstands each morning.

TAUT-LINE HITCH

- Use to keep a rope tight that would otherwise sag (clothesline, tent guy lines, flag poles)
- Holds in one direction but can be slid in the other direction to remove slack
- Adjustable to you don't have to tie, untie, re-tie.
- Basically two half-hitches with an extra turn.

DEMONSTRATE.

INSTRUCTIONS:

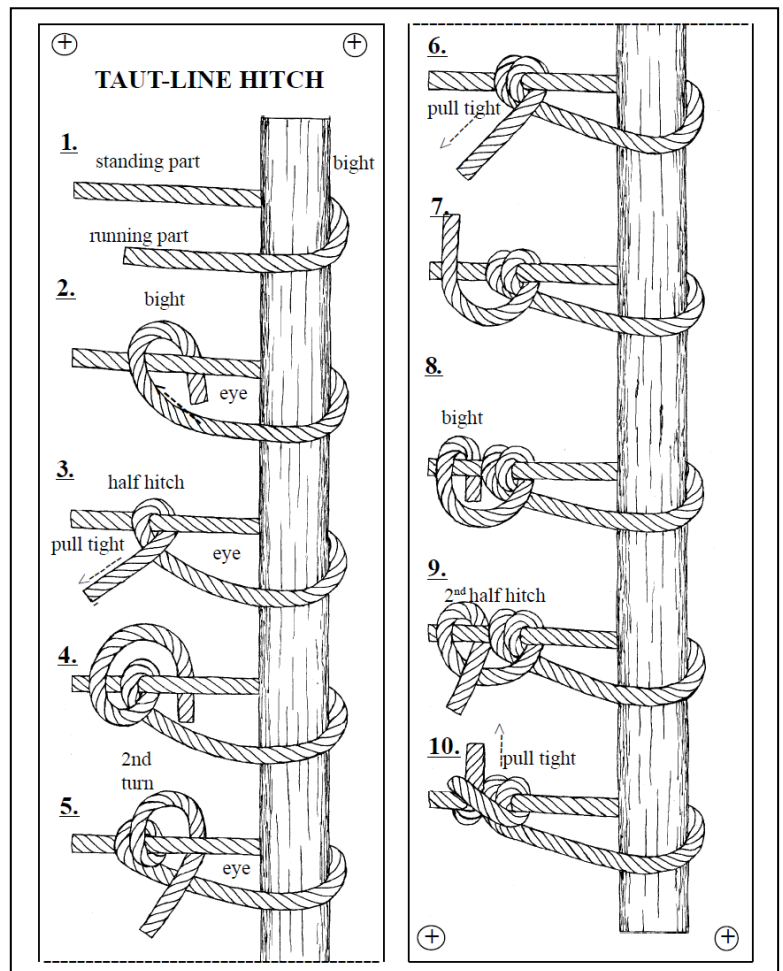
(1) Wrap the working end around the back of a pole. (2-3) Bring the working end over the top and behind the standing end, then pass it through the eye (first half hitch created around the standing end of rope). Pull tight. (4-6) Wrap working end over the top of the standing end and back through the eye again. Pull tight. (7) Take working end to the outside of the loop. (8-9) Go over standing part and bring down through eye on this side. (second half hitch created). (10) Pull tight.

To adjust tension, hold standing end and slide hitch back and forth.

Practice.

Working with partners, practice together by walking through as a group (twice, so each partner has a chance). Campers should try again on their own.

Investigate the flag poles to see how taut line hitch is used.



Cadette 6th graders – SURVIVOR CHALLENGE

Sixth graders will be participating in a rotation between Fire, Knots, and Tools/Knives on Wednesday morning in preparation for the Survivor Challenge.

They will need to review the tripod lashing and clove hitch to perform this challenge.