

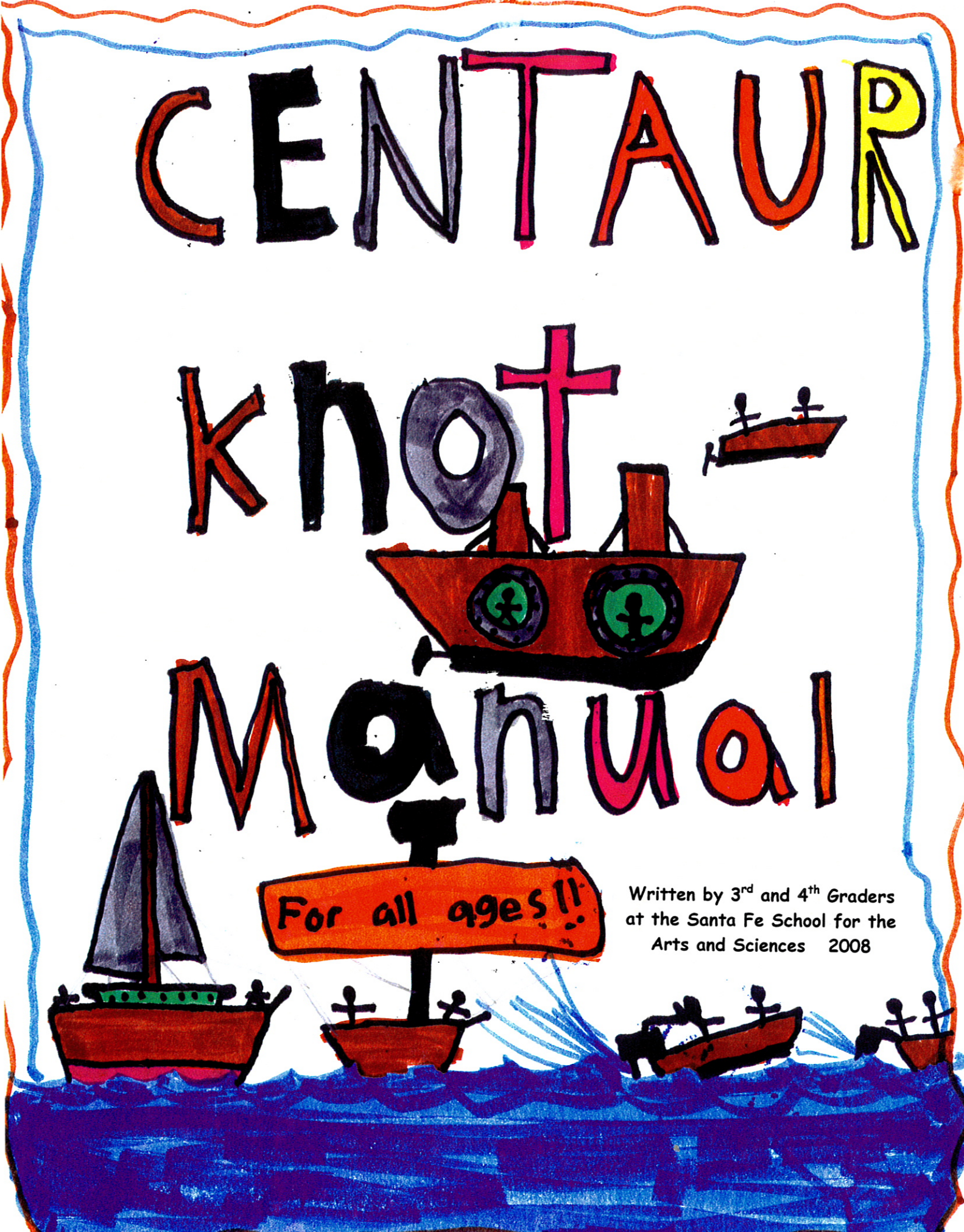
# CENTAUR

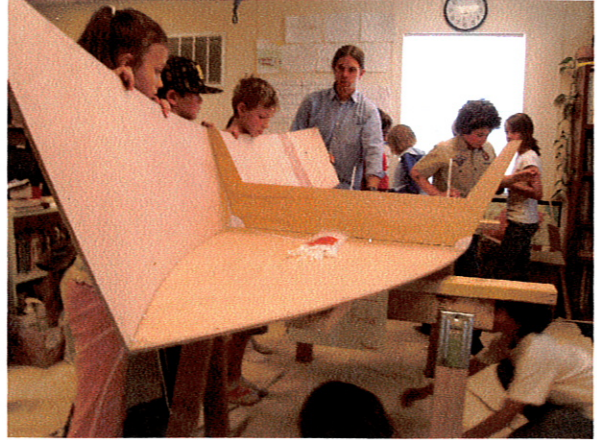
# KNOT

# MANUAL

For all ages!!

Written by 3<sup>rd</sup> and 4<sup>th</sup> Graders  
at the Santa Fe School for the  
Arts and Sciences 2008



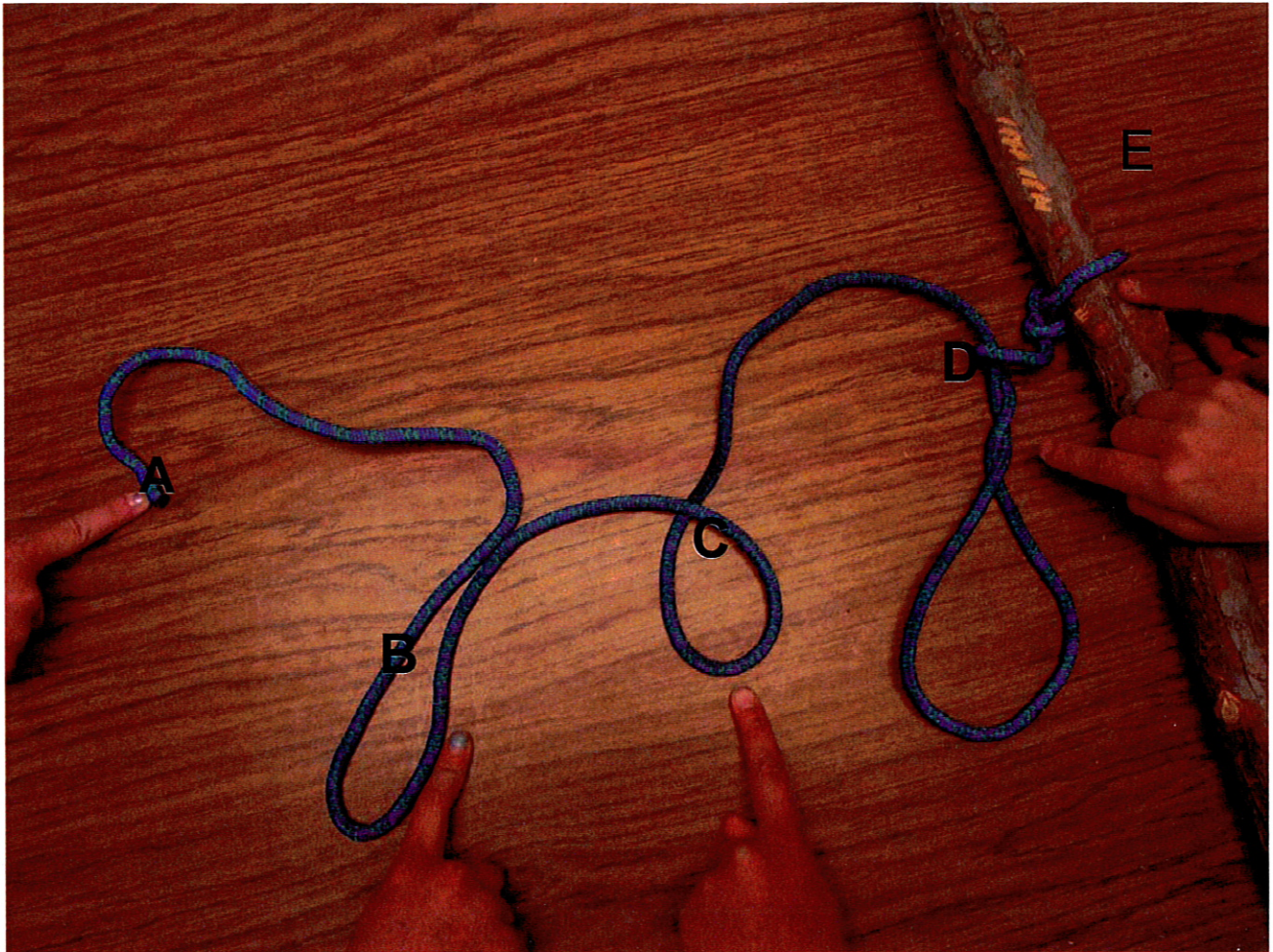


**During their Learning Expedition on Sailing,  
Centaur Students Designed, Built and  
Sailed a Wooden Sailboat**



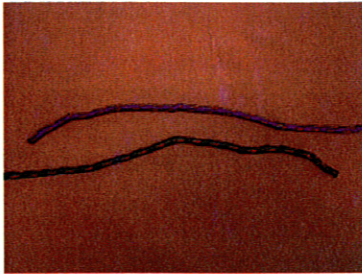
## Rope Terminology

When tying a knot it is helpful to know a few simple terms for the parts of a rope. Use the picture below to see what each part is called.



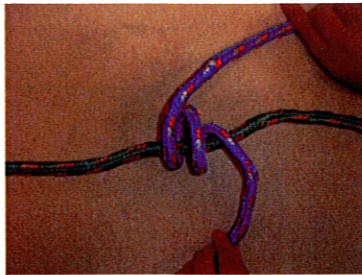
- A) Working end: the end that is actively involved in tying the knot
- B) Bight: doubling a line so that two parts are brought together
- C) Loop: when two parts of line cross, a bight turns into a loop
- D) Elbows: the twists in a rope
- E) Standing End: the inactive part of the line that is usually attached to something

# Adjustable Bend



1. Lay the two pieces of rope parallel to each other.

By: Sam



2. Wrap the piece of rope on the top around the bottom one twice so that the working end is pointing down.



3. Pull the end over the other rope so that it is pointing up.



4. Lastly, tuck the end through the last wrap so that the end is pointing towards the other

History: The Adjustable Bend, a.k.a. the Rolling hitch, was one of the most commonly used knots on ships that relies on rope rigging. The original, according to William Falconers Universal Dictionary of the Marine (1769), was a knot that Richard H. Dana, and others would later call a round turn, and two half-hitches. Dana popularized it's current name in his Seaman's Friend (1841 Boston, and New York) and Seaman's Manual (1841 London) Other authors, such as Darcy Lever (Yong Sea Officer sheet Anchor, 1808), Gorge Biddlecombe (Art of Rigging, 1848), and David steel (Elements and Practice of Rigging and Seamanship, 1798), called it a "Magnus Hitch" or "Magner's Hitch".



5. Repeat these steps on the other piece of rope, and "WHALAH!" you have the Adiustable Bend.

## Uses:

This knot is used for tying two ropes together. It is useful in pitching tents when camping. I have found it useful when a long rope is needed but isn't handy.

# Anchor Bend

By: John



1. Wrap the rope around whatever your tying it to.



2. Wrap it around a second time.



3. Wrap the working end around and in front of the standing end. Then, stick the working end through the two turns or loops.



4. Stick the working end through the loop you just made.



5. That is a half-hitch.

## History:

The Anchor Bend is similar to a round turn and two Half-Hitch. David Steel suggested the Anchor Bend should be used in sailing.

## Uses:

The Anchor Bend is mostly used to tie a rope to an anchor.



# The Barrel Sling

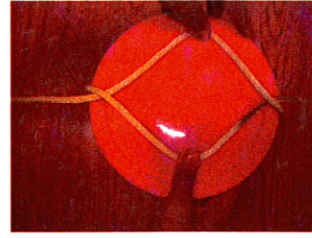
By: Alliya



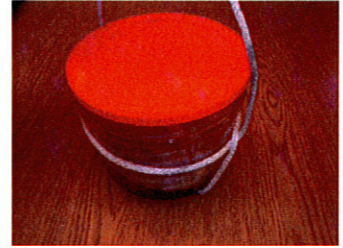
1. Place the rope under the barrel and pull the rope up around the side of the barrel.



2. Then cross one piece of rope over the other and take the rope that's on the bottom and wrap it around the top rope once.



3. Then pull the twist in the top part of the rope apart and around the side of the barrel. Then grab the two ends of the rope and hold them up and keep holding them there. Then pull the ends on the side up.



4. Then with the two ends tie a Bowline and now you're done! You can learn how to tie the bowline because it's in this book.

## Uses:

This knot can be used for lifting objects, but the special thing about this knot is that when you use it to carry objects they stay straight up and don't wobble around.

## Helpful hints

To tie this knot you will need a medium sized rope you will also need a barrel or container.

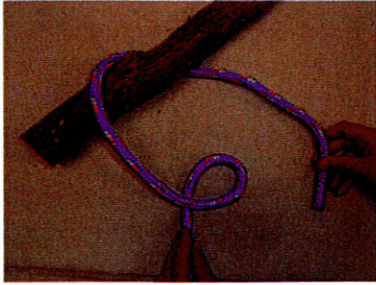
## History:

The barrel sling was named for its use in hoisting cargo aboard ships. There wasn't much history on the Barrel Sling but there was information on the Bottle Sling. Did you know that in 1889 E.N little wrote about the Bottle Sling in his book called Log Book Notes? Also, this other guy named Johann Roding author of this book called Allgemeines Worterbuch der Marine 1795 called it a jug sling.



# Bowline

By: Kai



1 Put your rope around something. Make a loop and put the working end under the standing end.



2. Put your standing end up through the loop.



3. Put your working end under and around your standing end.



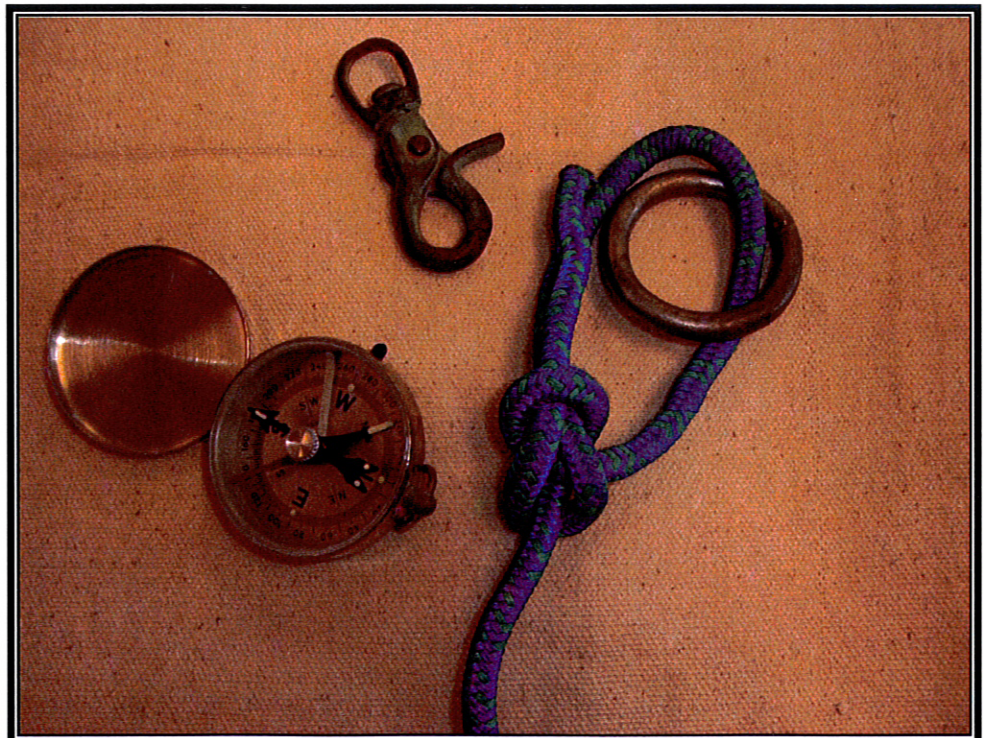
4. Put your standing end back in your loop and pull the standing end and your working end. Make it snug and you have the Bowline!

## History:

In 1627 John Smith wrote about the Bowline. He said the ancient Egyptians used it on their ships. Bowline comes from the nautical words Bow line which was the sail in line with the front of the ship and pointing in to the wind.

## Uses:

The Bowline is used in Sailing and climbing. It is used to lift up a sail and to attach to sheets and halyards to the sails.



# Cat's Paw Knot

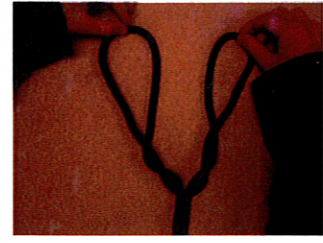
By: Adriel



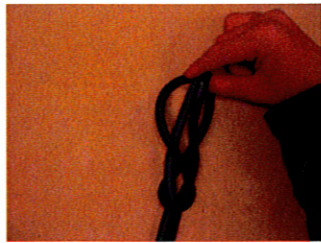
1. Make a bight



2. Bend the bight over itself making two loops



3. Twist the left loop clockwise and the right loop counterclockwise



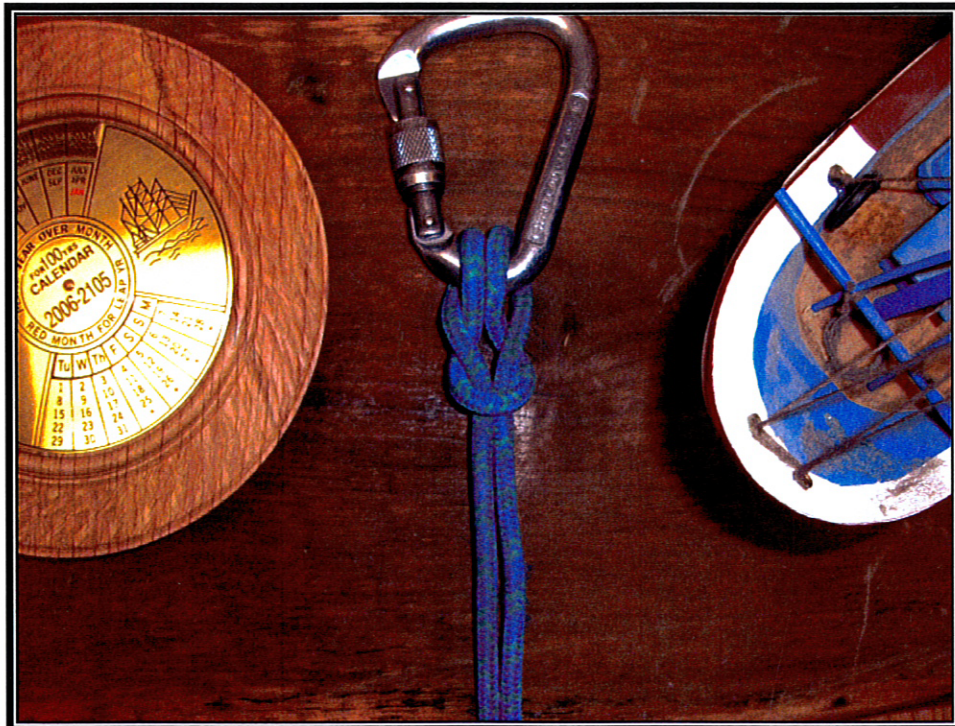
4. Take the two twisted loops and put them on a hook ring etc.

## Uses:

This knot is used by long shore men. Some of the uses are to haul lobster pots heavy loads etc. If one of the ends were to break the other end will stay steady so you can lower it down. (Don't try it!)

## History:

I think the history of the cat's paw is that when long shore men would haul their lobster pots they would fall in to the ocean because the knots weren't strong enough. So they invented the cat's paw.



Pull the rope so it's nice and secure. Then, meow you made the cat's paw!!!

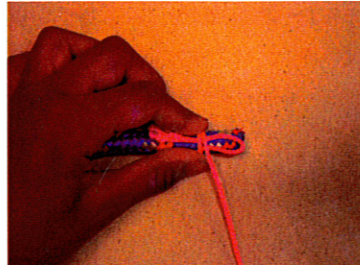


# Common Whipping

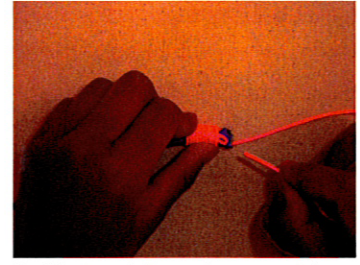
By: Sarafina



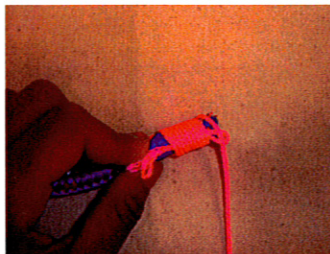
1. Make a bight with a smaller rope on the end of a bigger rope that is about to fray.



2. Wrap the working end around the bight on the bigger rope.



3. Keep this twisty motion until you get to the end of the bight but make sure you make it tight.



4. Once you get to the end of the bight put the working end through the end of the bight.



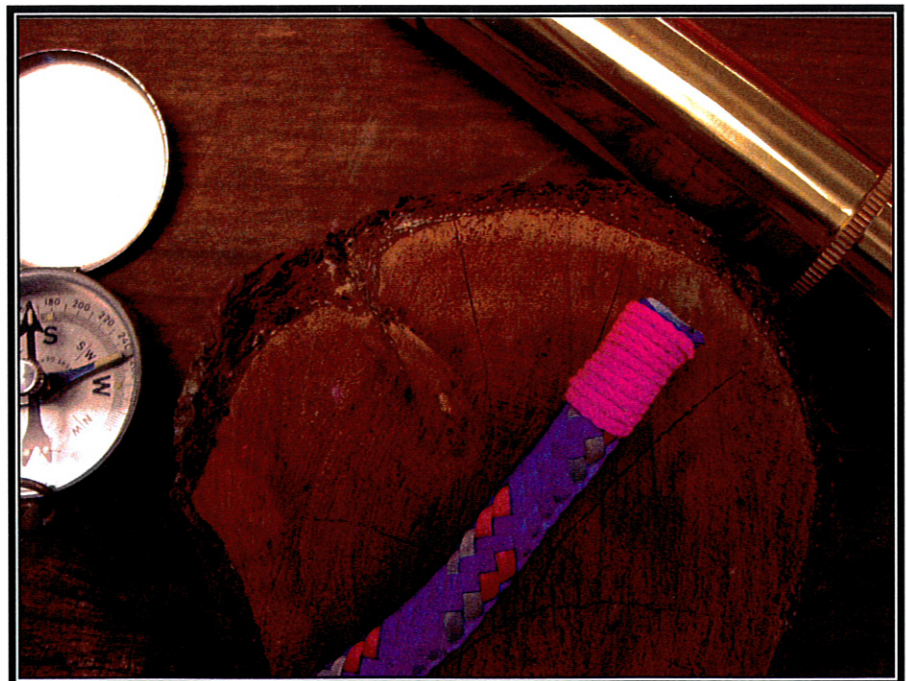
5. And now pull on the standing end until the bight disappears. Then cut the ends.

## Uses:

Whipping is used to stop the fraying of ropes. It also helps to make sure that the rope can go through small places.

## History:

I could not find any history of my knot (Common Whipping.) But I think people used it to whip sheep. It's also to make sure that their whipping rope won't fray.



# Halter Hitch

By: Merit



1. Around something, cross the working end (the right end) over the standing end (the left end) to make a loop.



2. Make a second loop by passing the working end behind the first loop.



3. Make a bight in the working end.



4. Slide the bight through the second loop.



5. Pass the working end through the bight, tighten and adjust.

## HISTORY

In the olden days this knot was used by anyone who rode a horse. This knot was most likely invented many years ago.

## USES

This knot was used, and still is, to tie animals, mostly horses, to things such as hitching posts or hitching rails. I use the Halter Hitch when my horse is a bit wild and I need to get his Lead rope out of the way but I don't want to take it off.



# Hand Cuff Knot

By: Noa Noa



1. Make two loops, one clockwise one counter clockwise



2. Cross the two loops



3. Pull the inner edges of the loops through the opposite loop



4. Fasten tightly until it looks like the picture above

## USES

The knot was sometimes used on the legs of horses to limit the steps their riders had to walk in the morning to fetch them. A different name for this knot is the Fireman's chair knot and it can be used as a rescue cable to support a person while lowered to safety.

## HISTORY

People used this knot hundreds of years ago to tie up prisoners. They even used fishing line! They could use fishing line by tying the Hand Cuff knot on their thumbs behind their back.



# Monkey Chain

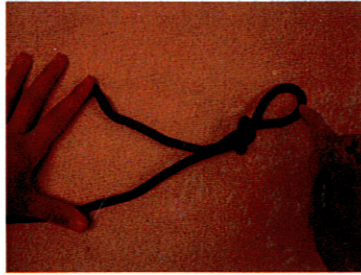
By: Alicia

## HISTORY

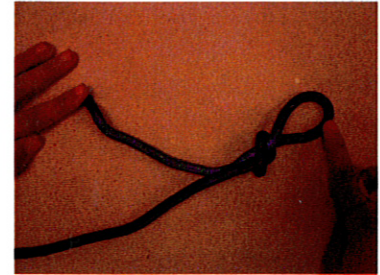
I couldn't find any history on the Monkey chain. I believe that some horseback riders use it and sailors. In rock climbing it's called a daisy chain.

## USES

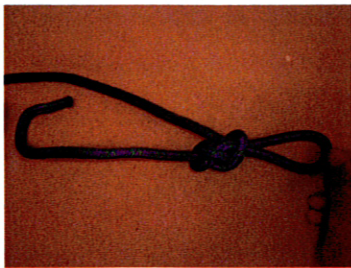
You can use it to store rope. Or you can make it into a strap for glasses or binoculars.



1. Make a loop at the end of a rope. Stick your hand through and grab the part that is below the other part and pull it through and pull it tight.



2. Reach through your loop and grab the longer part and pull it through and pull it tight again.



3. Reach through and grab the longer part and pull it through and pull it tight.



4. Reach through and grab the longer part pull it through and pull it tight.



5. Keep doing that until you get to the end of the rope.

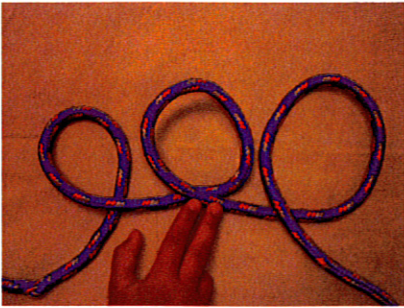


6. When you get your last loop stick the end of your rope closest to your loop through the loop and pull it tight.

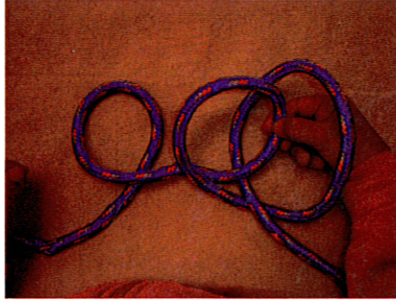


# Sheepshank

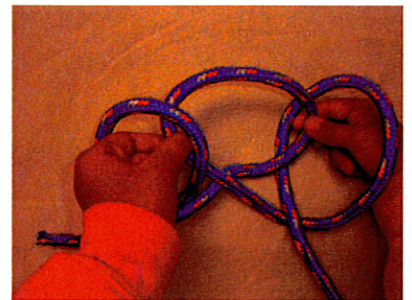
By: Isabel



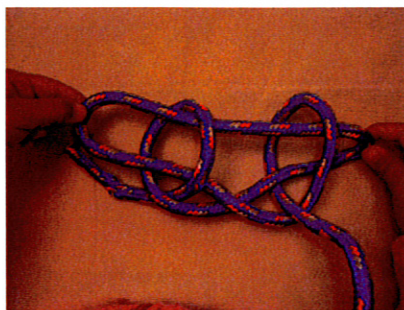
1. Make three overhand loops



2. Put the middle loop over then through the right loop.



3. Put the middle loop under then through the left loop



4. Pull the middle loop through both loops



5. Pull the working and standing end.

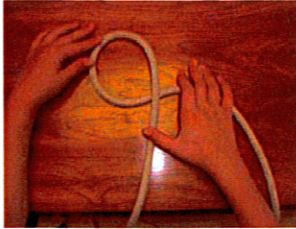
**Uses:** The sheepshank is used for making a rope shorter. It is also used for making rope not break. In other words, if there is a rip it won't put to much pressure on the rip.

**History:** A sheepshank once was used for tying sheep to stakes so they would stay in one spot to graze. The rope could be lengthened so the sheep could have more grass in their area. It was also called a sheepshank merely because it looked like a sheep's leg.



# Spanish Bowline

By: Anjali



1. First you make a loop in the middle of the rope and make sure your working end is in the front of your other rope.



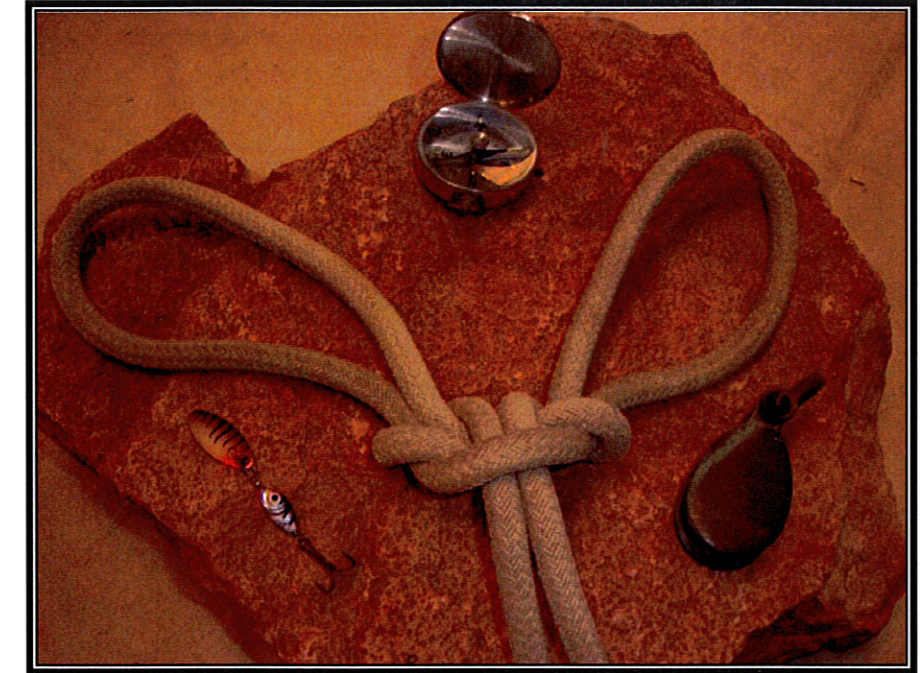
2. Make another loop beside your other loop and repeat the process that was in step one.



3. Twist the left loop to the right and twist the right loop to the left.



4. Then put one loop into the other loop and tighten a little

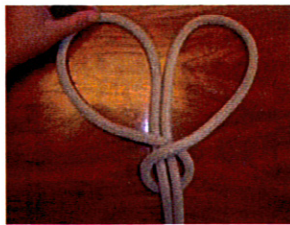


## History

The knot is mentioned as a seafarer's knot by Sir Henry Mainwaring in the seaman's dictionary (1644) and illustrated in elements and practice of rigging and seaman's ship (1794) by David Steel.

## Uses

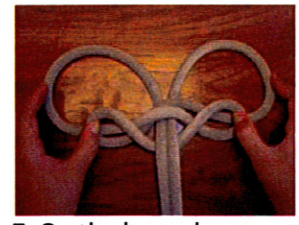
The Spanish Bowline can be used wherever it is desirable to have two eyes in the line. Its primary use is a substitute for the boatswain's chair. Many prefer it to the French Bowline because the bights are set and will not slip back and forth.



5. Then it will look like this.



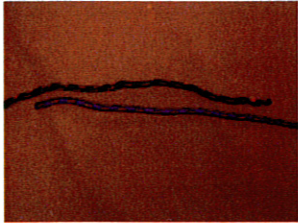
6. Pull the lower loops and make it big and it should look like a butterfly's wings.



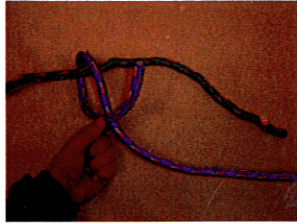
7. On the lower loops you get the bottom parts and put them through the upper loops.

# The Double Fisherman's Knot

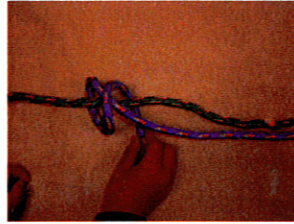
By: Lewis



1. First place two ropes next to each other.



2. Then make one loop with one of the ropes on the other rope.



3. Then go over the loop making an "x" in the loop. This is a second loop.



4. Then you will see two loops. Go through the two loops with your working end.



5. Pull on the working end until it tightens. Then, do the same on the other side with the other working end.



6. Pull on the working ends.

## History:

Fishermen have known this knot for centuries. I think they have known it since the 19<sup>th</sup> century. This knot is not just called the Double Fisherman's knot. It is also called the Angler's knot and the English knot. In 1834 Captain Marryat said in his book *Peter Simple*, "There is a moral in that knot that points out the necessity of pulling together when we wish to hold on."



## Uses:

This knot is mostly used for rock climbing, to make sure that the climbers are safe and secure. It is also used to tie necklaces.

# The Figure 8 Knot

## Uses

The figure 8 knot is used as a stopper knot and is very useful in rock climbing and replaces the over hand knot in many cases. It is also referred to as the Flemish knot, Savvy knot, and the lover's knot.

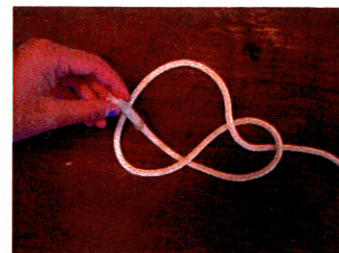
By: Lauren

## History

The name figure 8 knot first appeared in a book called *Young Officers Sheet* by Darcy Lever in 1808. The other name at the time for the figure 8 was the Flemish knot.



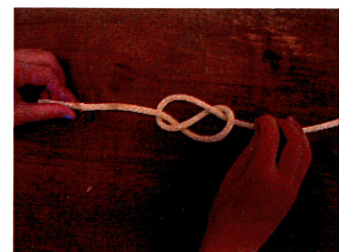
1. First make a loop.



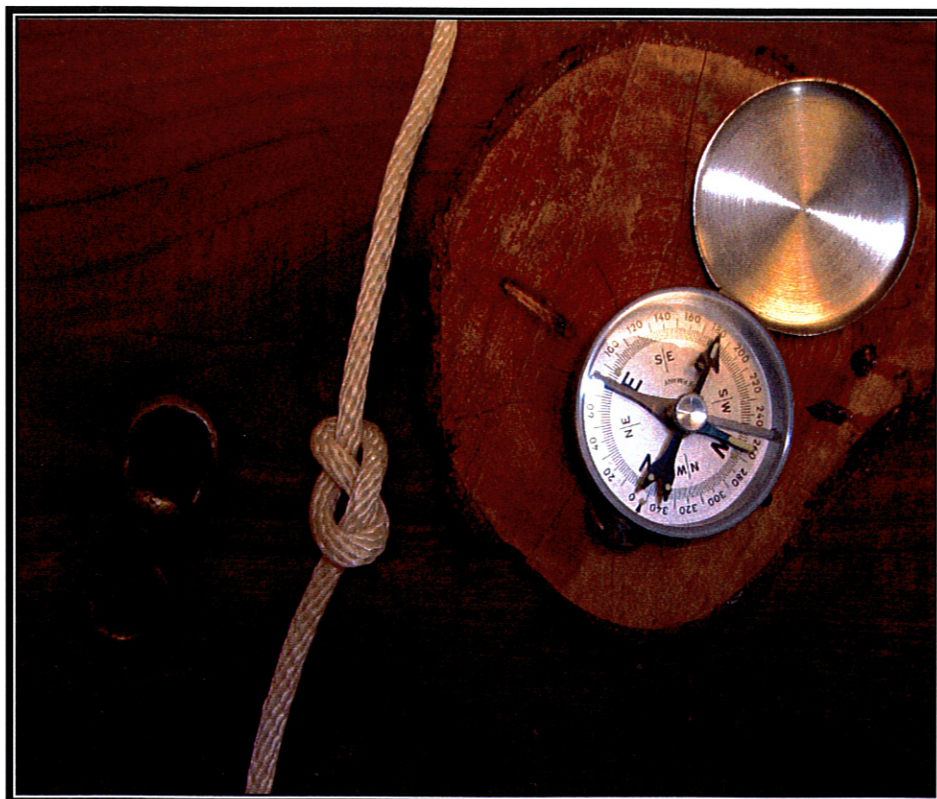
3. Take the working end through the top loop.



2. Take your working end behind your standing rope. (NOTE: the rope should look like an 8)



4. Pull.



5. TaDa! You've made the Figure 8 knot!



# The Monkey's Fist

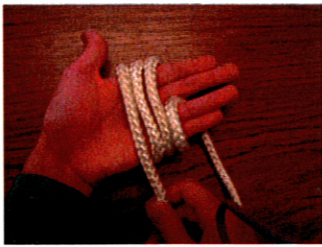
By: Brass

## History:

The Monkey's Fist was first invented and used first by sailors and sea farers centuries ago. Around 1800, it was found that the Monkey's Fist could be used as a weapon. The Monkey's Fist first appeared in a book called *Log Book* in 1889. It also appeared in *Sailors' Knots* in 1935.

## Uses:

The Monkey's Fist was first used as a heaving line by seamen. Later, it was used as a slung shot, or a bolus. Today Monkey's Fists are used as ornaments or an anchor for rock- climbing.



1. First, wrap your line around your hand 3 times ;( before doing any of this, make sure your working-end is longer than your standing-end) wrap it around a fourth time. (Make sure you wrap the coil loose so you that you can slip your hand out of it.)



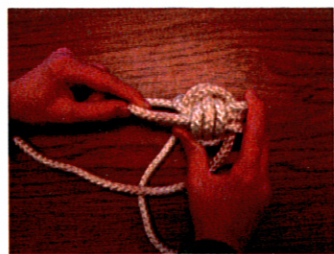
2. Now, slip your hand out of the coil, and wrap the line horizontally around the first coil 3 times.



3. You will soon see that the two coils have formed two semicircles. Stick the working end of your line through the section on the top.



4. Go through the bottom section, (this would be a good time to add your round core) make sure to keep your core inside your knot as you go in and out the sections. Do this until there are 3 lines of rope on each side of the knot).



5. Finally, before using your knot, tighten it by pulling on the loops you have coiled. (Start at the place you began, and tighten the loops in order until you reach the end).



Your Monkey's Fist should look something like this when it's done.

# Three-Way Sheet Bend

By: Nicky



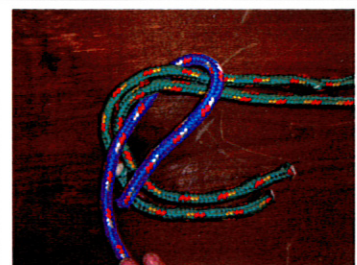
1. Get three ropes



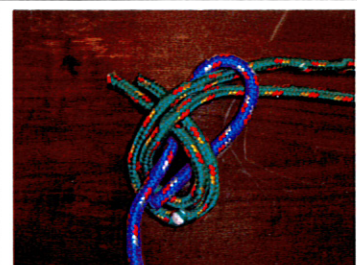
2. Then make a small bight with one rope



3. Then put the two leftover lines in the bight



4. Then go back under the bight



5. Then go under the same two ropes then pull

## History:

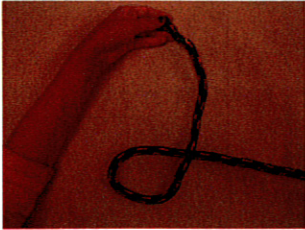
The sheet bend acquired its name when it was used in the running rigging (sheets) that were attached to sails. David Steel called it so in *Elements and Practice of Rigging and Seamanship* (1794). It was spotted by Swedish yachting writer Frank Rosenow while in Greek waters and berthed (docked) at the town quay in Gaios on Antipaxos. In his book *Seagoing Knots* (1990) he credits it to the English colonel Bertram Bloomer Royal Engineers (retired).

## Uses:

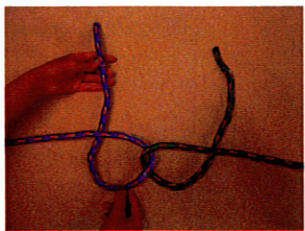
It is used to join one line to a bight in another, also to connect two lines that are different diameters or different materials in which case the stiffer or thicker line should be used for the bight through and around which the thinner of the two is then tied.

# Shake Hands

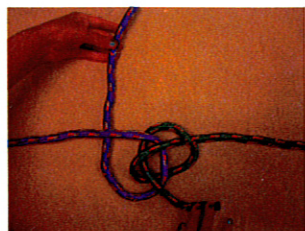
By: Tilcara



1. First take two ropes. Take one rope and go over your standing end, making a loop.



2. Take your second working end and go under the first loop and go out and under the second rope's standing end.



3. Take your first working end; go under the second rope's loop, into the center over and out.

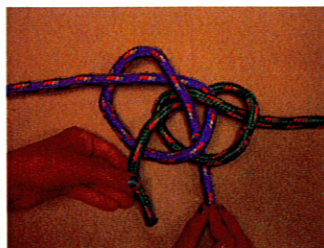


Uses:

Shake Hands is often used in art work because of its so called flower design.

History:

Harry Asher invented Shake Hands, which was influenced by Clifford Ashley's 1944 description of a similar knot.



4. Now take your second working end and go over into the center, under the two ropes and out.



5. Take your two shortest ends of the knot and pull. Also, pull the longest ends. And you'll know when you've made Shake Hands when it looks like the final picture.