Knot Basics

Whether you're boating, camping, climbing, fishing, hauling, sailing, or doing work around the house or yard, knowing a few strong, secure, and easy-to-untie knots can make the job much easier.

- Knot: A fastening made by tying together lengths of material, such as rope, in a prescribed way.
- Bends: Used to tie a rope to another rope.
- Hitches: Used to tie a rope to an object other than another rope

Knot Terminology

To start, it helps to know some basic knot terminology.

Line: The rope or cord in which a knot is being tied

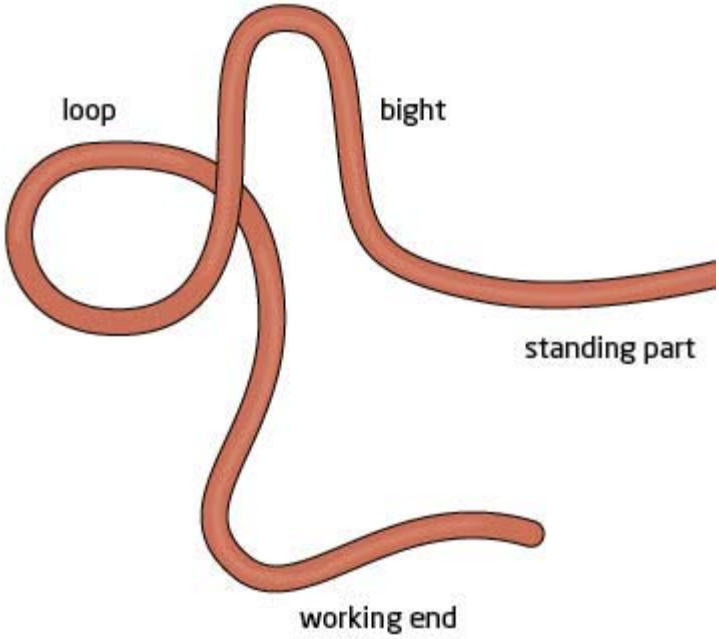
Working end: The end of the line used to tie the knot

Standing end: The end of the line *not* used to tie the knot (this end is often left out of images that show how to tie a knot)

Standing part: The section of line between the knot and the standing end

Bight: A stretch of line formed into a "U" or semicircle that does not cross itself (some knots can be tied using the bight of a rope rather than the ends; these knots are said to be **tied in the bight**)

Loop: A closed section of line, formed when the working end of the rope passes over itself



Rope Materials

Ropes can be made from natural fibers, such as **hemp**, or from synthetic fibers, such as **nylon**, **polyester**, and **polypropylene**. The material from which a rope is made affects the rope's characteristics and best uses.

Natural fibers: Natural fibers, such as hemp, are usually found in laid rope. They're cheap, easy to handle, and, due to their slight roughness, are good at holding knots. Natural fibers are UV-resistant but tend to rot or mildew if they get wet. They can also be damaged by oils and solvents. Overall, they're not as strong as ropes made from synthetic materials.

Nylon: Strong, light, and elastic, nylon can be used to make everything from thick ropes to very thin fishing lines. Nylon ropes can be dynamic or static, depending on how the nylon is woven. Nylon sinks in water and loses some strength when wet. It's also vulnerable to acids and UV light.

Polyester: Not as strong or elastic as nylon, polyester ropes are generally static. Polyester sinks in water, doesn't lose its strength when wet, and is more resistant to UV rays than nylon.

Polypropylene: Ropes made from polypropylene float on water, making them perfect for waterskiing and water rescue. They're also water-resistant and won't freeze in cold weather. However, polypropylene ropes are stiff and tend to fail when exposed to high heat or excessive UV rays.

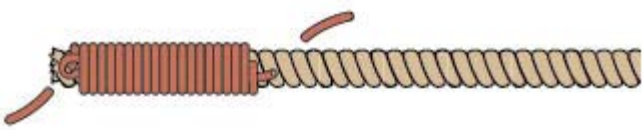
Seal the Ends of Cut Rope

If you cut a rope, always seal the ends to prevent fraying. You can seal the ends of a rope in a number of ways:

1. **Binding:** Apply masking or duct tape to the rope ends.
2. **Waxing:** Drip melted wax thoroughly on the rope ends to seal them.
3. **Melting:** With nylon ropes, you can seal the ends by melting the nylon fibers with direct heat from a match.
4. Whipping: Use twine to bind and seal the rope ends. To apply whipping to the end of a rope:
    1. Lay the end of the twine along the rope end so that the bight of the twine is near the rope end.

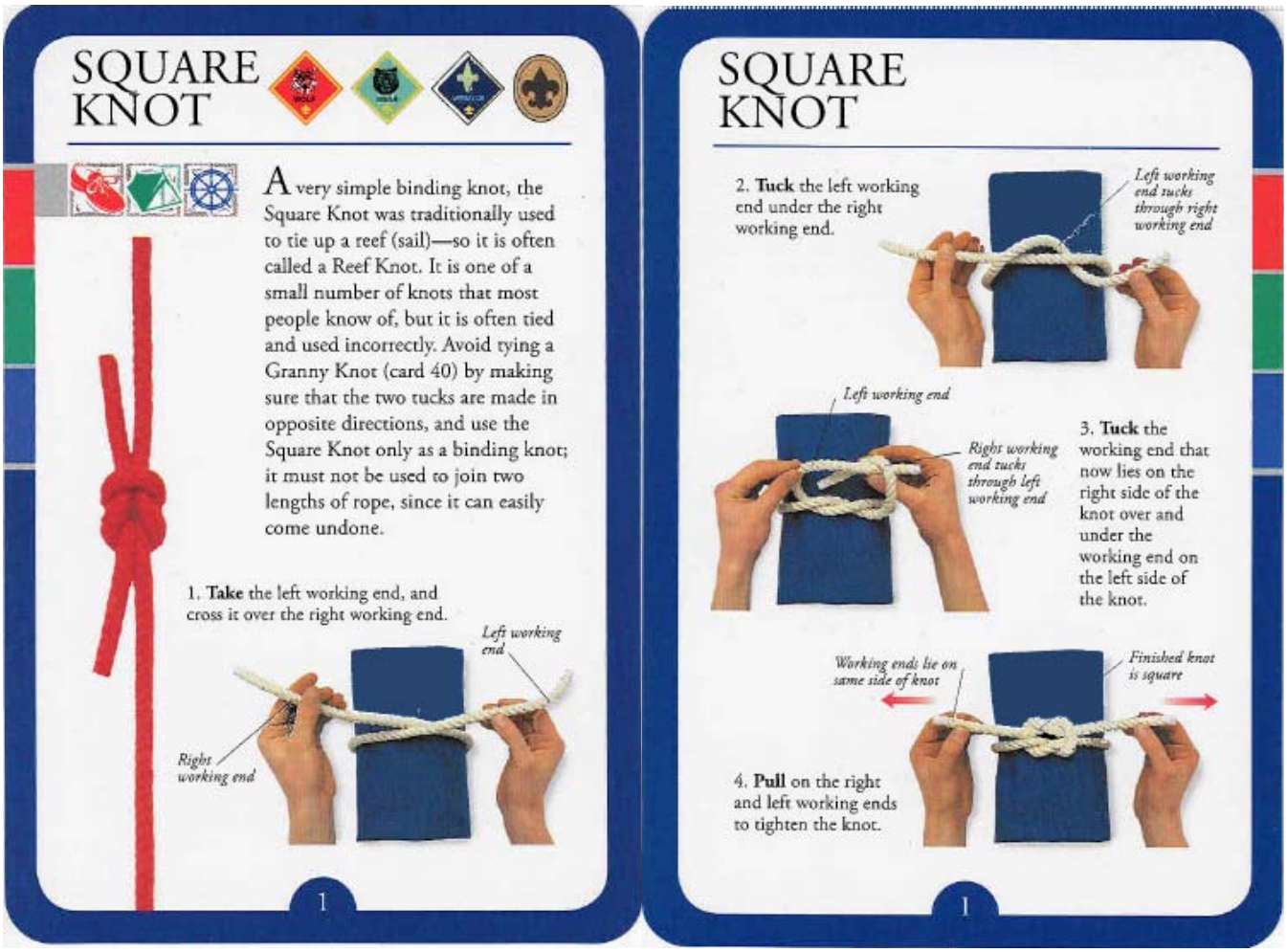
    2. Wrap the twine tightly around the rope and slip the end of the twine through the bight.

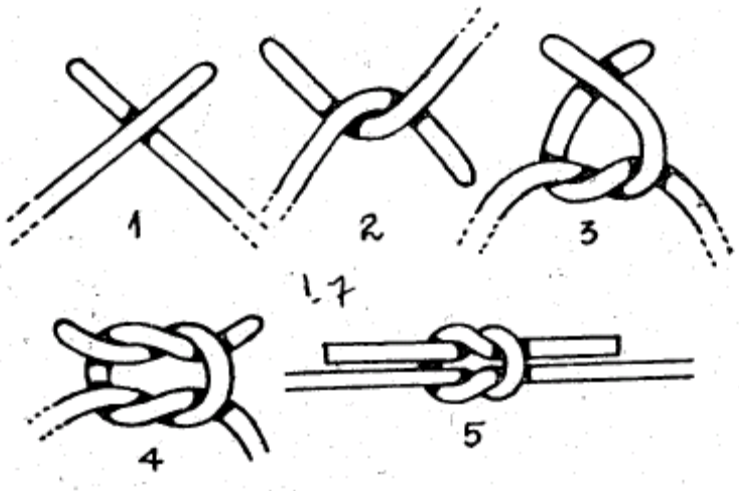
    3. Tighten and snip off both ends of the twine.



NÚT DẸT

Square Knot





NÚT GHẾ ĐƠN

Bowline Knot

BOWLINE

The Bowline is a widely used, all-purpose loop that can be tied quickly using one of two methods. The method below is used if the standing part is free to lead toward the body as the knot is tied.

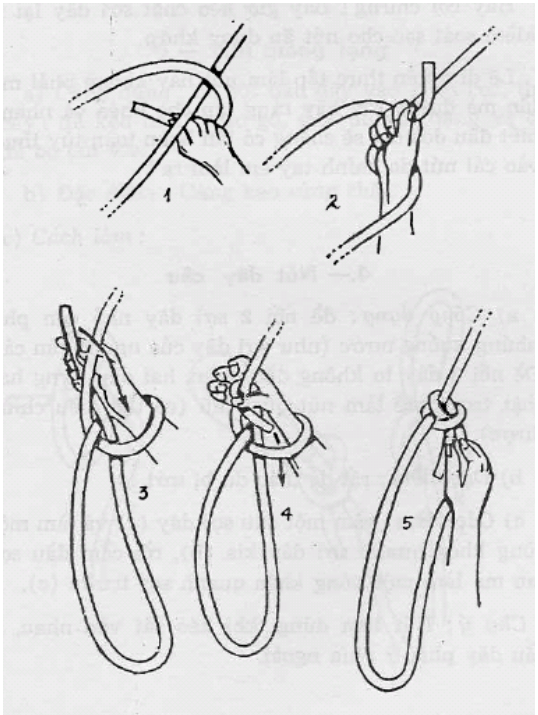
1. **Take** a long working end of a rope over its standing part to form a crossing turn. Hold the crossing turn in place with one hand.

BOWLINE

2. **Pass** the working end through the crossing turn from back to front. Leave a large loop in the working end to form the final loop of the knot.

3. **Take** the working end behind the standing part.

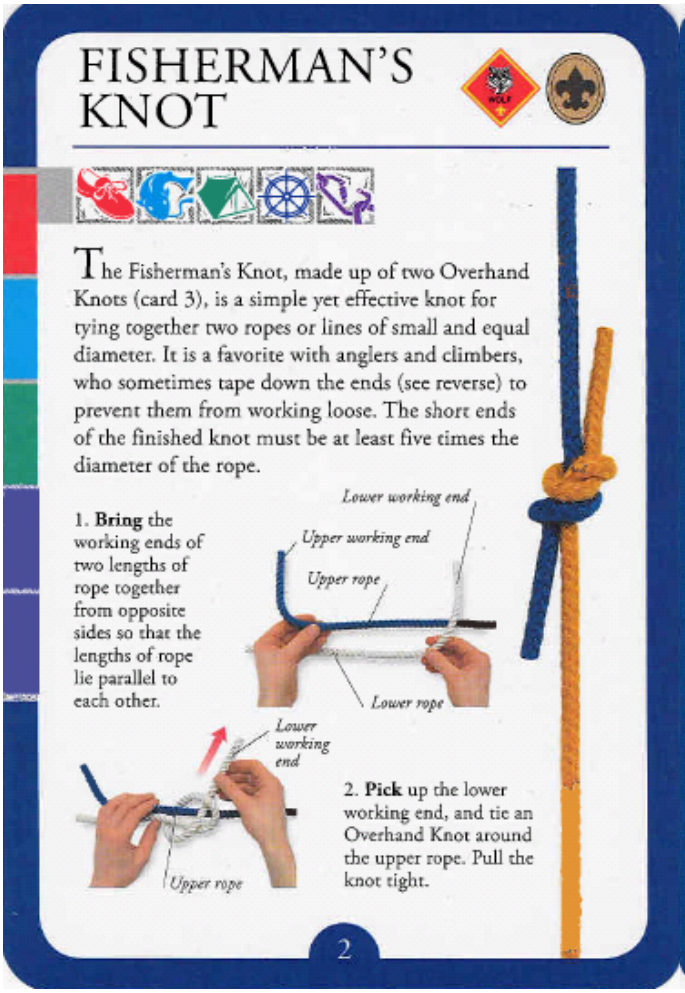
4. **Pass** the working end up through the crossing turn from front to back. Pull on the standing part and on the doubled working end to tighten the knot.



METHOD 2

NÚT DÂY CÂU

Fisherman's Knot



FISHERMAN'S KNOT

The Fisherman's Knot, made up of two Overhand Knots (card 3), is a simple yet effective knot for tying together two ropes or lines of small and equal diameter. It is a favorite with anglers and climbers, who sometimes tape down the ends (see reverse) to prevent them from working loose. The short ends of the finished knot must be at least five times the diameter of the rope.

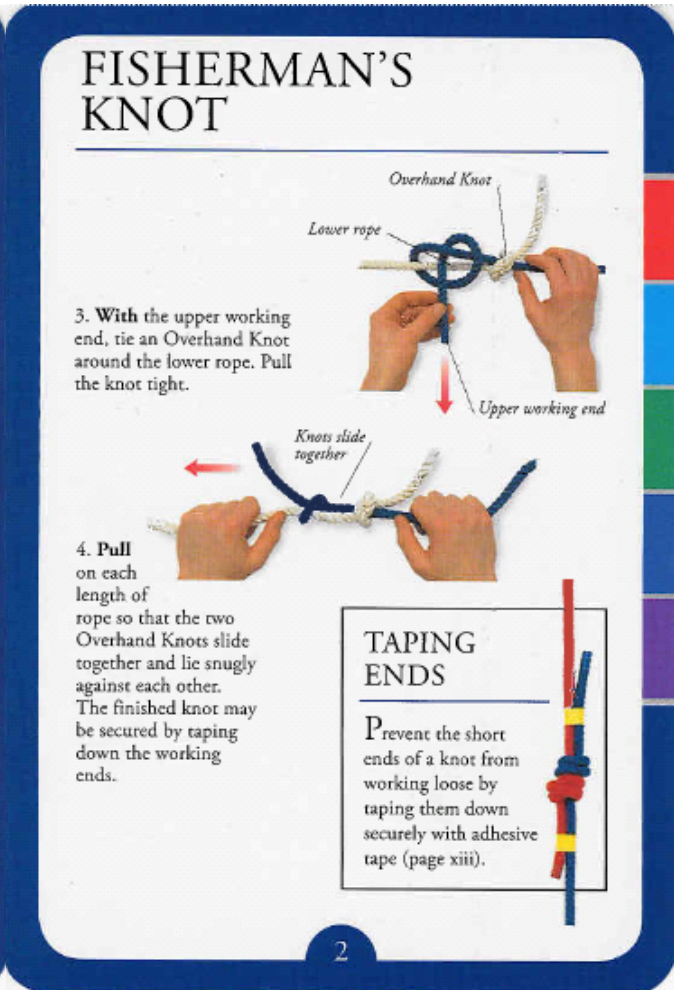
1. **Bring** the working ends of two lengths of rope together from opposite sides so that the lengths of rope lie parallel to each other.

Lower working end
Upper working end
Upper rope
Lower rope

Lower working end
Upper rope

2. **Pick** up the lower working end, and tie an Overhand Knot around the upper rope. Pull the knot tight.

2



FISHERMAN'S KNOT

Overhand Knot
Lower rope
Upper working end

3. **With** the upper working end, tie an Overhand Knot around the lower rope. Pull the knot tight.

Knots slide together

4. **Pull** on each length of rope so that the two Overhand Knots slide together and lie snugly against each other. The finished knot may be secured by taping down the working ends.

TAPING ENDS

Prevent the short ends of a knot from working loose by taping them down securely with adhesive tape (page xiii).

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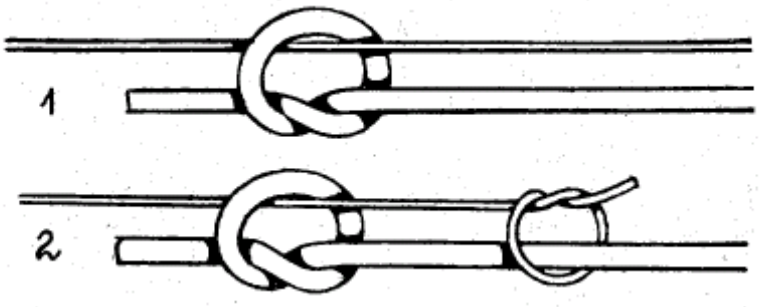
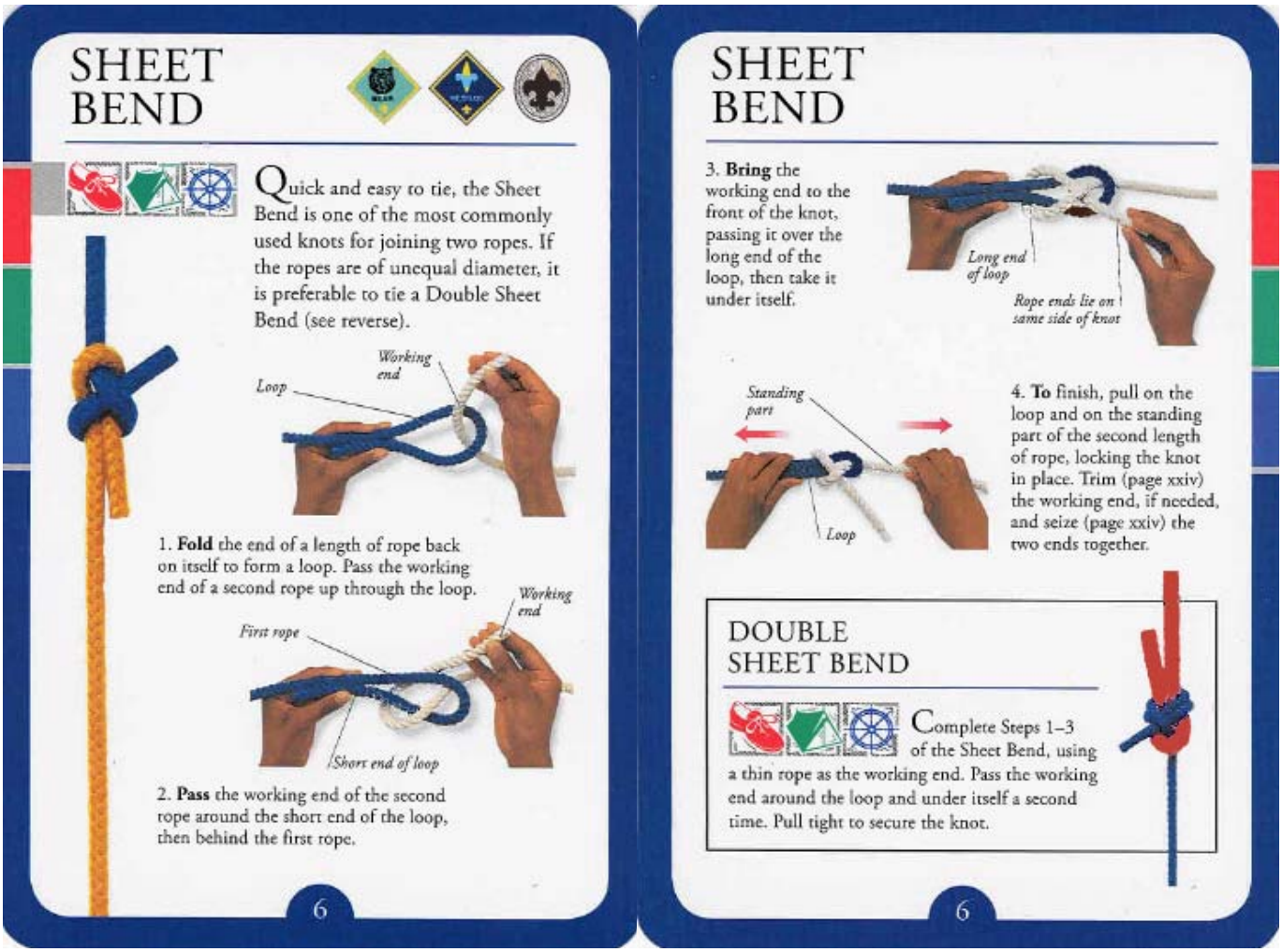


NÚT THỢ DỆT

Sheet Bend



SHEET BEND

Quick and easy to tie, the Sheet Bend is one of the most commonly used knots for joining two ropes. If the ropes are of unequal diameter, it is preferable to tie a Double Sheet Bend (see reverse).

Working end

Loop

1. **Fold** the end of a length of rope back on itself to form a loop. Pass the working end of a second rope up through the loop.

Working end

First rope

Short end of loop

2. **Pass** the working end of the second rope around the short end of the loop, then behind the first rope.

6

SHEET BEND

3. **Bring** the working end to the front of the knot, passing it over the long end of the loop, then take it under itself.

Long end of loop

Rope ends lie on same side of knot

Standing part

Loop

4. **To** finish, pull on the loop and on the standing part of the second length of rope, locking the knot in place. Trim (page xxiv) the working end, if needed, and seize (page xxiv) the two ends together.

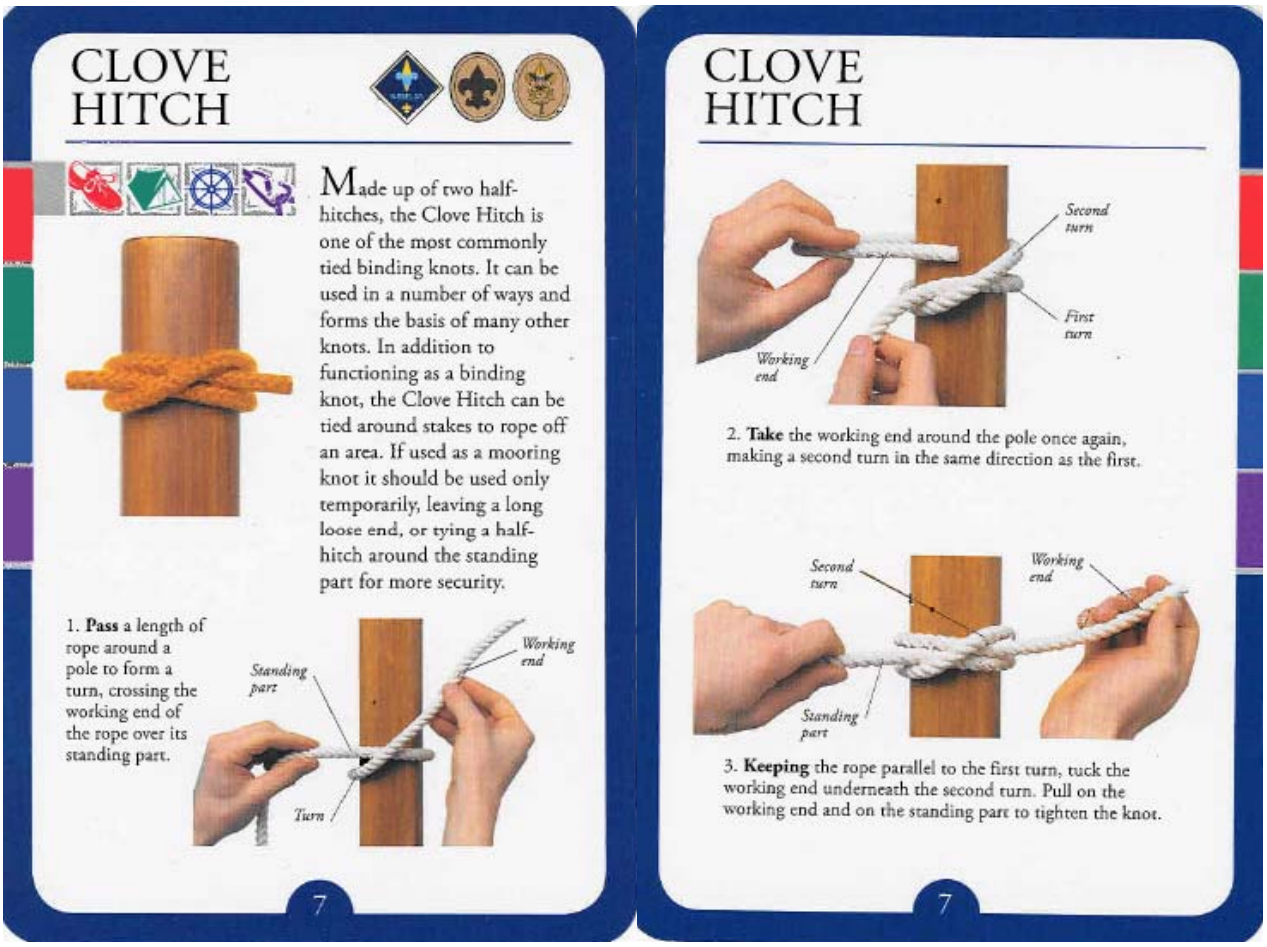
DOUBLE SHEET BEND

Complete Steps 1–3 of the Sheet Bend, using a thin rope as the working end. Pass the working end around the loop and under itself a second time. Pull tight to secure the knot.

6

NÚT THUYỀN CHÀI

Clove Hitch



CLOVE HITCH

Made up of two half-hitches, the Clove Hitch is one of the most commonly tied binding knots. It can be used in a number of ways and forms the basis of many other knots. In addition to functioning as a binding knot, the Clove Hitch can be tied around stakes to rope off an area. If used as a mooring knot it should be used only temporarily, leaving a long loose end, or tying a half-hitch around the standing part for more security.

1. **Pass** a length of rope around a pole to form a turn, crossing the working end of the rope over its standing part.

Standing part
Working end
Turn

7

CLOVE HITCH

Second turn
First turn
Working end

2. **Take** the working end around the pole once again, making a second turn in the same direction as the first.

Second turn
Working end
Standing part

3. **Keeping** the rope parallel to the first turn, tuck the working end underneath the second turn. Pull on the working end and on the standing part to tighten the knot.

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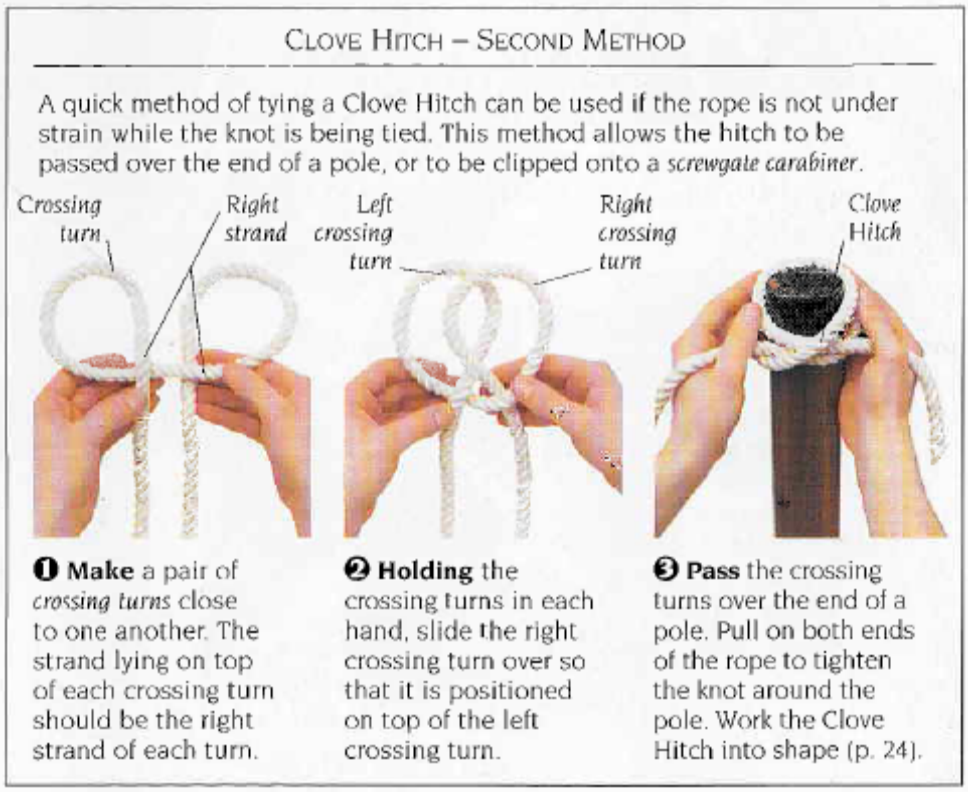


CLOVE HITCH – SECOND METHOD

A quick method of tying a Clove Hitch can be used if the rope is not under strain while the knot is being tied. This method allows the hitch to be passed over the end of a pole, or to be clipped onto a *screwgate carabiner*.

Crossing turn
Right strand
Left crossing turn
Right crossing turn
Clove Hitch

❶ **Make** a pair of *crossing turns* close to one another. The strand lying on top of each crossing turn should be the right strand of each turn.

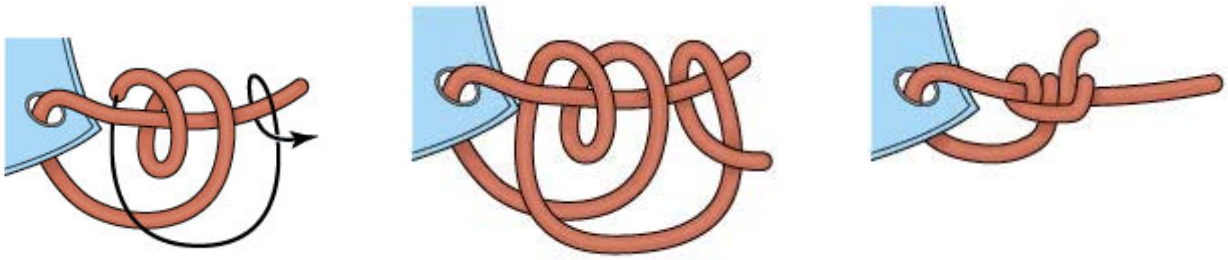
❷ **Holding** the crossing turns in each hand, slide the right crossing turn over so that it is positioned on top of the left crossing turn.

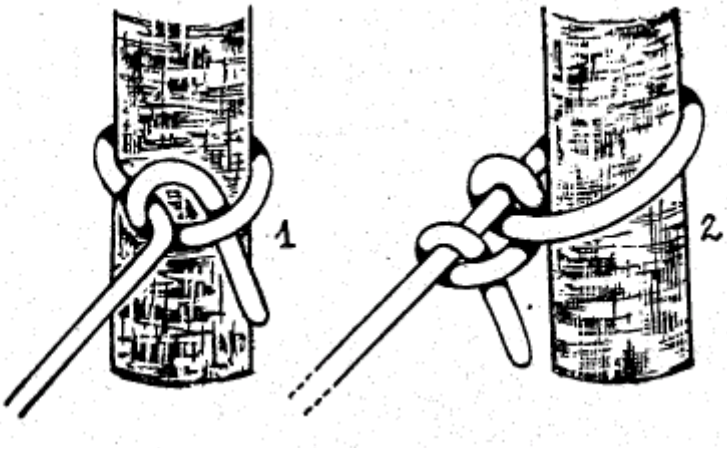
❸ **Pass** the crossing turns over the end of a pole. Pull on both ends of the rope to tighten the knot around the pole. Work the Clove Hitch into shape (p. 24).

NÚT 1 VÒNG 2 KHÓA

Taut-Line Hitch

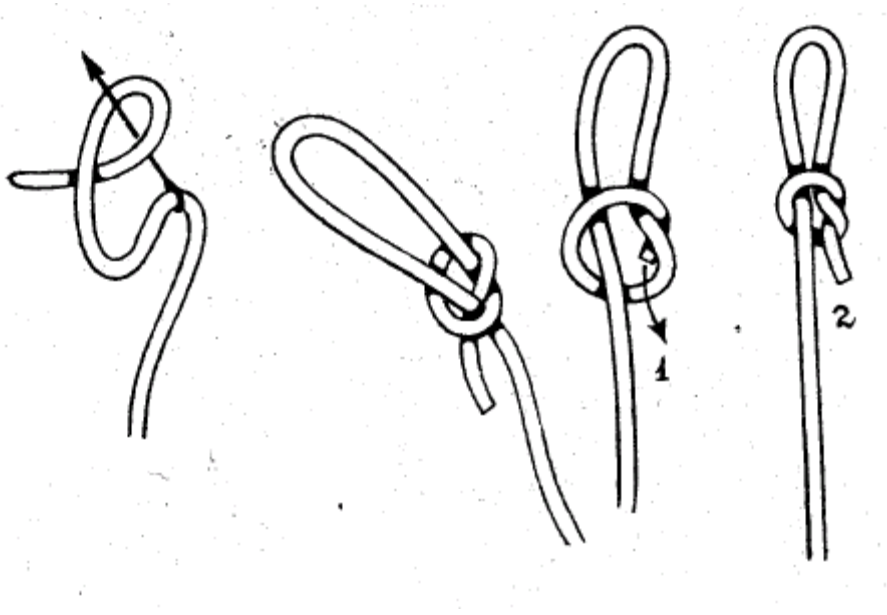
A hitch with a loop on its end, particularly useful when the tension on the line may need to be increased or decreased—as when securing tent lines or securing a load in a truck bed.





NÚT THÒNG LỌNG

Running Knot



NÚT SỐ TÁM

Figure-Eight Knot

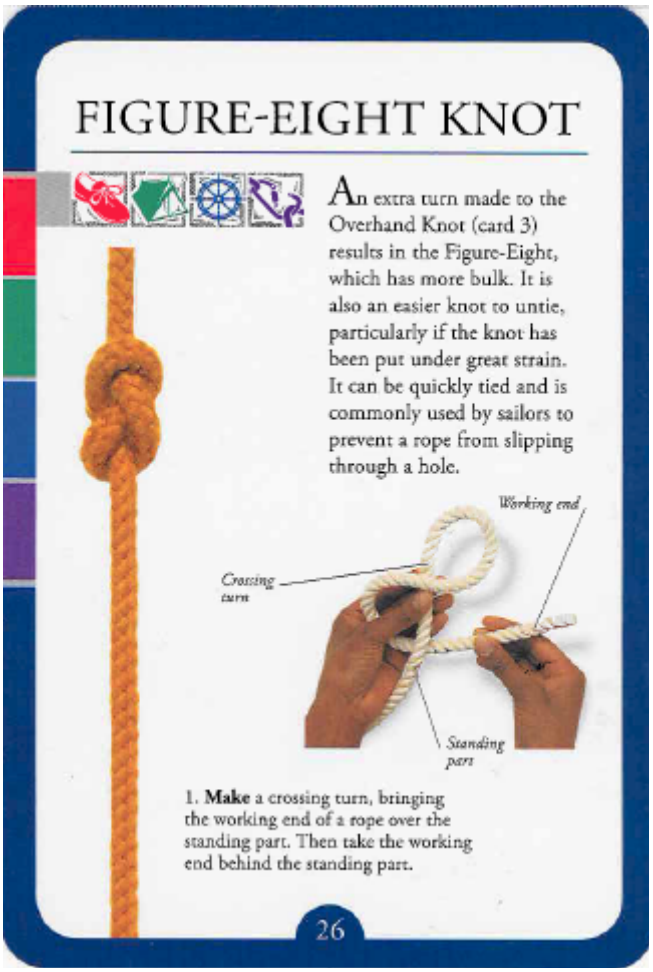


FIGURE-EIGHT KNOT

An extra turn made to the Overhand Knot (card 3) results in the Figure-Eight, which has more bulk. It is also an easier knot to untie, particularly if the knot has been put under great strain. It can be quickly tied and is commonly used by sailors to prevent a rope from slipping through a hole.

Working end

Crossing turn

Standing part

1. **Make** a crossing turn, bringing the working end of a rope over the standing part. Then take the working end behind the standing part.

26

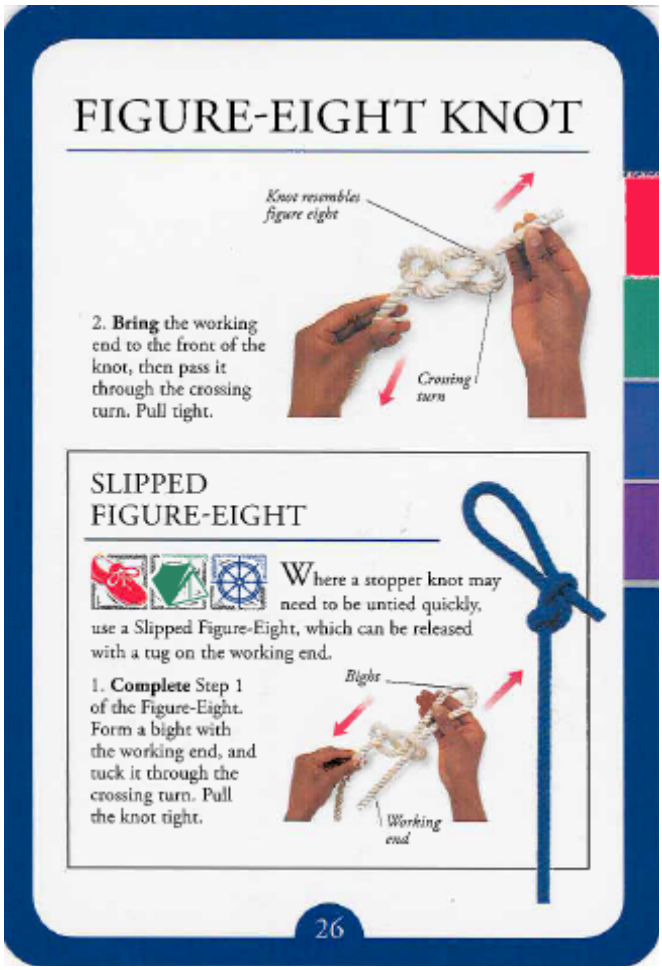


FIGURE-EIGHT KNOT

Knot resembles figure eight

2. **Bring** the working end to the front of the knot, then pass it through the crossing turn. Pull tight.

Crossing turn

SLIPPED FIGURE-EIGHT

Where a stopper knot may need to be untied quickly, use a Slipped Figure-Eight, which can be released with a tug on the working end.

1. **Complete** Step 1 of the Figure-Eight. Form a bight with the working end, and tuck it through the crossing turn. Pull the knot tight.

Bight

Working end

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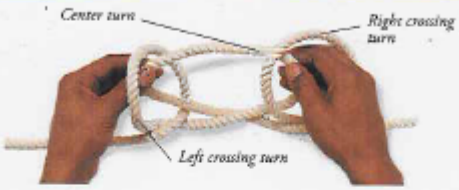
Sheepshank Knot

SHEEPSHANK

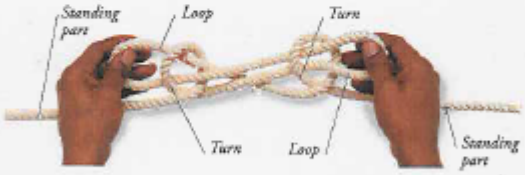
The Sheepshank is designed to shorten a rope before use. It can also be used to relieve strain on a worn part of a rope by positioning the damaged strands in the center of the knot.

1. Make three crossing turns all in the same direction.

SHEEPSHANK



2. Pull the center crossing turn through the back of the right crossing turn and through the front of the left crossing turn.



3. Pull on the newly formed loops, then on the standing parts so that the outer crossing turns tighten around the loops. The knot will hold only if strain is applied to the standing parts.