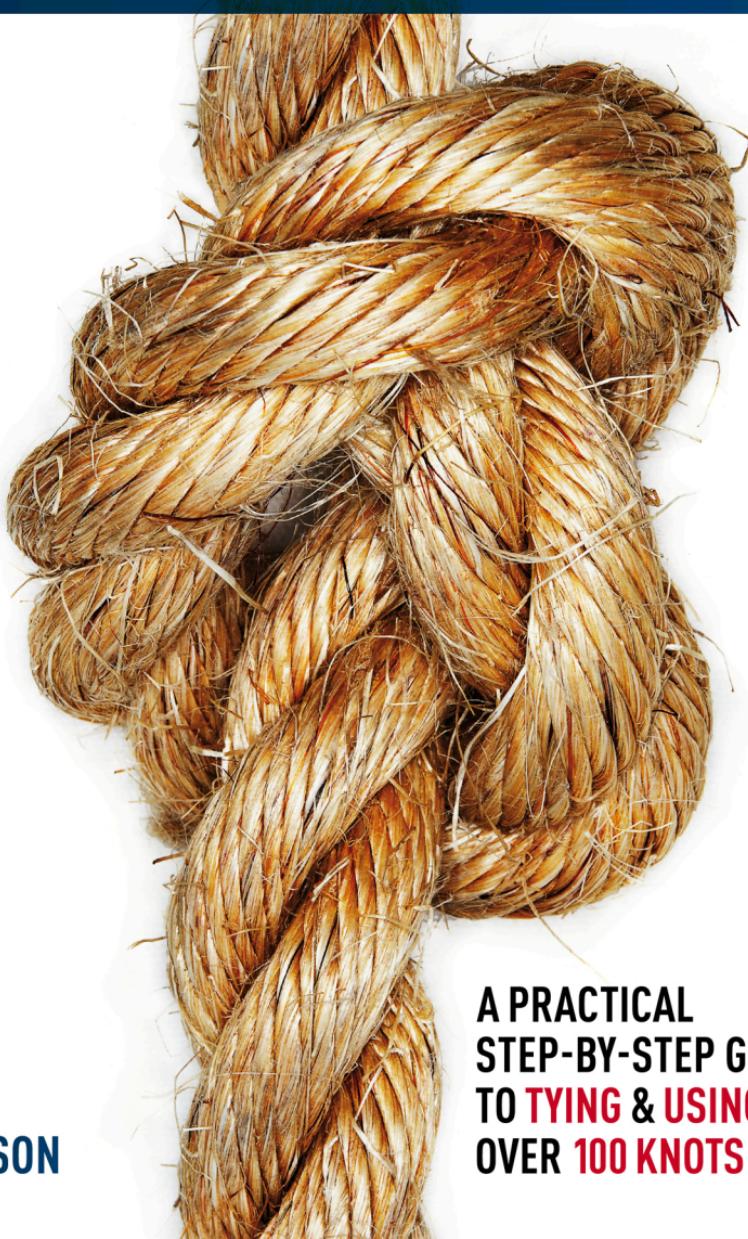




KNOTS

THE COMPLETE VISUAL GUIDE



DES
PAWSON

A PRACTICAL
STEP-BY-STEP GUIDE
TO TYING & USING
OVER 100 KNOTS

KNOTS

THE COMPLETE
VISUAL GUIDE





KNOTS

THE COMPLETE VISUAL GUIDE



DES PAWSON





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DK INDIA

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DTP Designer Shanker Prasad

DTP Manager Balwant Singh

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Romi Chakraborty

Managing Editor Saloni Talwar

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Introduction

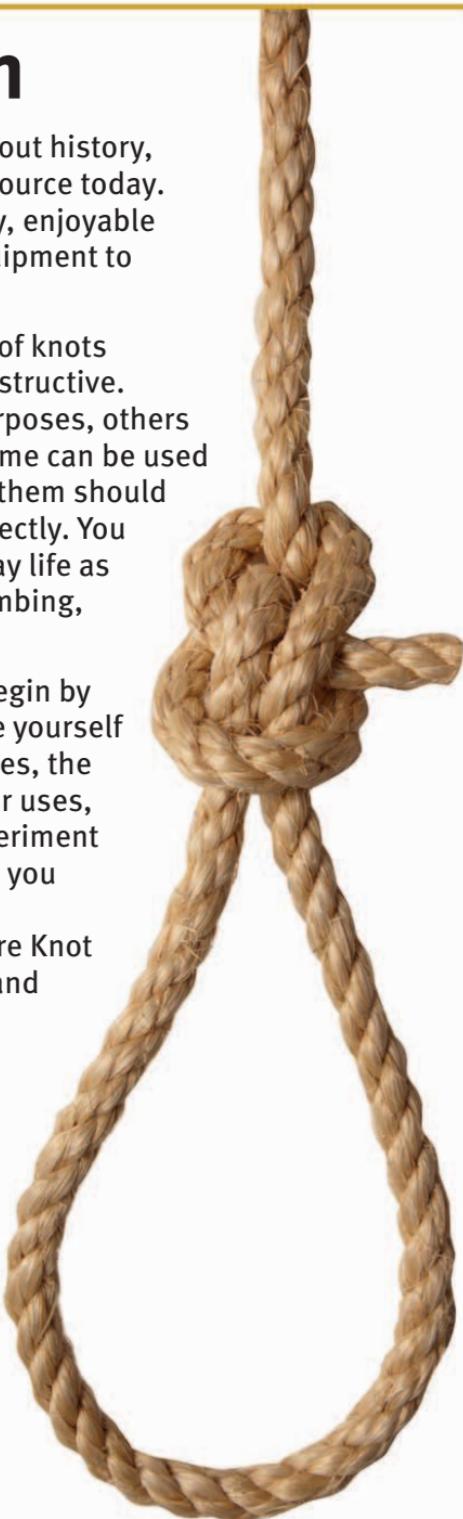
Knots have been used throughout history, and they remain a valuable resource today. Learning to tie knots is a handy, enjoyable skill, requiring only simple equipment to get started.

This book contains a selection of knots intended to be practical and instructive. Many of them have specific purposes, others are purely decorative, while some can be used for many different tasks; all of them should be reliable and safe if tied correctly. You will find them useful in everyday life as well as in activities such as climbing, sailing, and camping.

As with any skill, it is best to begin by learning the basics. Familiarize yourself with the fundamental techniques, the different types of rope and their uses, and a few technical terms. Experiment with some simple knots before you attempt anything complicated; classic knots such as the Square Knot (see pp.85–86) and the Overhand Knot (see pp.28–29) are both excellent places to begin.

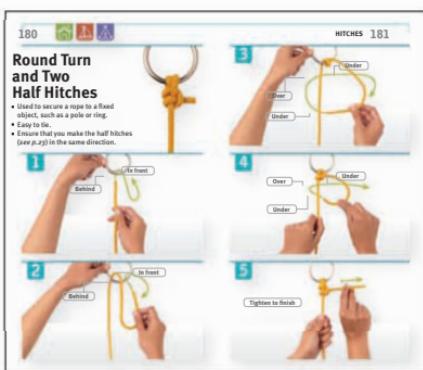
When learning to tie new knots, don't rush—pause regularly to make adjustments as needed and, above all, have fun!

Des Lays



About this Book

Read the brief description at the start of each chapter to figure out which type of knot you need, then use the icons and text at the beginning of each knot to refine your search. Once you have found the knot you are looking for, follow the step-by-step instructions to learn how it is tied. This book also contains information on rope and tools, and the best knots for activities such as sailing and climbing.



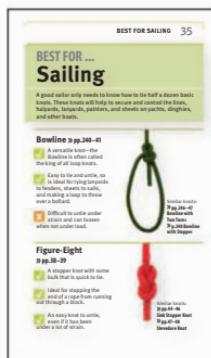
Step-by-step knot sequence

Opening with an overview of the function and characteristics of the knot, these pages use step-by-step photography, accompanied by clear instructions, to demonstrate how the knot is tied.



Getting started

This section outlines the equipment and basic techniques needed to tie the knots featured in this book.



Best for...

These feature pages profile the six best knots for specific activities such as camping or fishing.

Icons

The activities for which each knot can be used are indicated by these icons:



General



Fishing



Climbing



Sailing



Camping



Decorative

Getting Started

Using the correct type of rope for a particular task is key to tying knots effectively. This chapter details how the properties of rope varies according to its construction and composition, with useful advice on storage and maintenance and a range of basic terms and techniques.



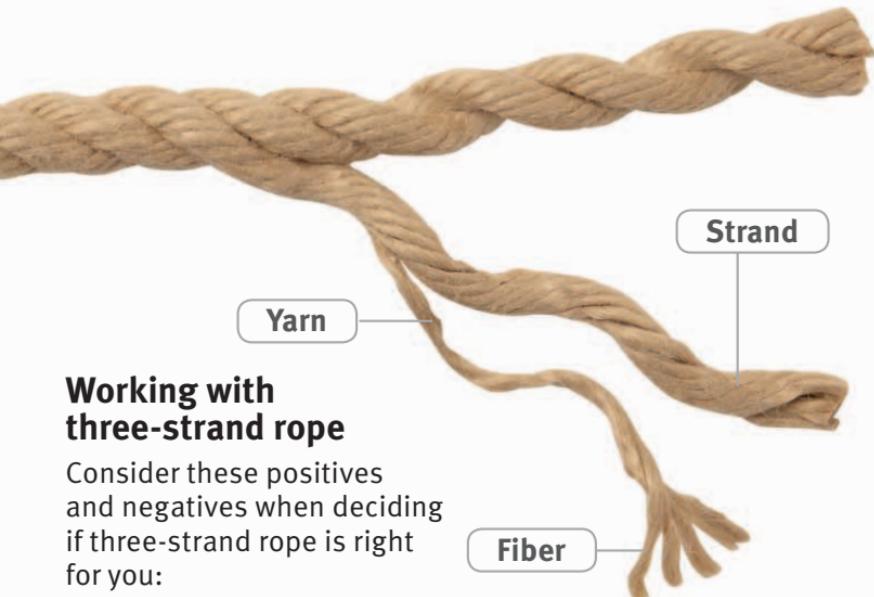


Rope Construction

The rope-making process involves fiber being spun into yarn. The yarn is then twisted into large strands or braided, sometimes around a core. The qualities of a rope are partly determined by this process.

Three-strand rope

Rope with three strands is made by twisting fibers into yarns, then twisting the yarns together into strands. Three of the strands are then twisted into rope. At each stage the direction of the twist is opposite to that of the stage before: this creates the friction that holds all the strands together.



Working with three-strand rope

Consider these positives and negatives when deciding if three-strand rope is right for you:

- ✓ Firm and flexible.
- ✓ Easy to splice (see pp.334–63).
- ✓ Perfect for rigging traditional sailing vessels.
- ✓ A good choice for decorative knotting.

✗ Strands will untwist unless the ends are whipped (see p.14) to keep them from fraying.

✗ Kinks easily while being coiled.

✗ May have too much stretch for some tasks.

Braided rope

The most common type of this rope has a braided cover with a core of woven or twisted yarn made from synthetic fibers. The fibers in the core and the cover are not always the same. Many braided ropes are developed for specialized purposes.



Working with braided rope

Consider these positives and negatives when deciding if braided rope is right for you:

- ✓ Has a smooth feel and good flexibility.
- ✓ Suitable for a variety of purposes.

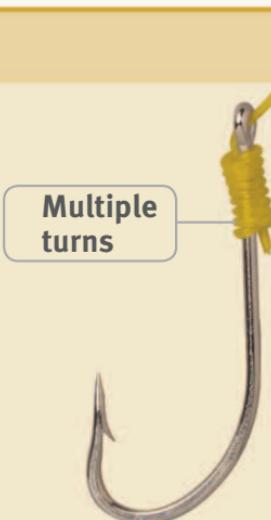
✓ Has less stretch and less tendency to kink than three-strand rope.

✓ Reliable in situations where safety is paramount, such as mountaineering and climbing.

✗ Difficult to splice. Some braided rope cannot be spliced at all.

Fishing Line

- Fishing line is usually thin and slippery—you may need to use special knots, often with many turns (see p.17), when working with it.
- To help bed the turns into place, moisten the line prior to working it tight. This will make the knot difficult to untie.



Rope Materials

Until the second half of the 20th century all rope was made from natural plant fibers. Since then, however, synthetic fibers have taken over, and now most rope is manufactured from synthetic materials.

Natural rope

The most common natural fibers in use today are cotton, sisal, and manila. They are esthetically pleasing but tend to decay quickly and wear out faster than synthetic fibers.

Cotton

Fibers of cotton grow around the seeds of the plant. They can be used to make soft, smooth ropes.



- Stretchy and soft to touch.
- Used mainly for decorative purposes.
- Commonly used for animal leashes.

Sisal

Fibers of sisal are stiff and come from the agave plant.



- Inexpensive and fairly coarse.
- Holds knots well.
- Can be treated with a waterproofing agent, making it suitable for exposure to moisture.

Manila

Fibers of manila come from the abaca plant.



- One of the strongest natural ropes.
- Less susceptible to decay than sisal and cotton.

Synthetic rope

Synthetic fibers are stronger than natural fibers and are resistant to decay. The most common synthetics used for making rope are polypropylene, polyester, and nylon.

Polypropylene

Polypropylene is relatively inexpensive and varied in form.

- Has a tendency to break down in sunlight—needs to be treated against ultraviolet rays.
- More liable to chafe than other synthetic fibers.



- Floats in water.
- Slightly slippery—needs to be tied with a secure knot.

Polyester

Polyester is one of the best ropes for outdoor use.

- Wears well—resistant to chafing and sunlight.
- As strong as nylon but has less stretch.



- Can be purchased prestretched, meaning there will be minimal stretch during use.

Nylon

Nylon fibers were the first synthetic material to be used for making rope.

- Has a degree of stretch—particularly good for absorbing shock loads.
- Good for making ropes used for mooring boats and climbing.



- Tends to stiffen over time.
- Resists the ultraviolet rays in sunlight better than polypropylene, but not as well as polyester.

Rope Maintenance

Good rope maintenance will preserve the strength of a rope and increase its life span. If the rope is being used for activities that carry an element of risk, such as climbing or abseiling, rope maintenance is an essential safety procedure.

Binding ends

Unless they are bound in a process called whipping, the ends of three-strand and braided rope will unravel and fray. The ends of a rope can be finished with either a temporary whipping or a permanent twine whipping.

Permanent whipping

Bear in mind the following points when making a permanent whipping:

- Whipping should be at least one and a half times the diameter of the rope.

Whipping twine



- A Common Whipping (*see pp.374–75*) is quick to make and suitable for three-strand and braided rope.
- The Sailmaker's Whipping (*see pp.379–82*) is suitable for three-strand rope.
- For braided rope, a Palm and Needle Whipping (*see pp.383–86*) is used to bind the core and cover together.

Temporary whipping

If there is not enough time to make a permanent whipping, a temporary whipping can be used. The following methods are all suitable for making a temporary whipping:

Self-adhesive tape



- Self-adhesive tape wrapped around the rope.
- A Constrictor Knot (*see pp.109–10*) tied with thin twine.
- A small amount of quick-drying glue applied to the end of the rope.
- Melting the end of synthetic rope. Be careful to avoid burning your fingers.

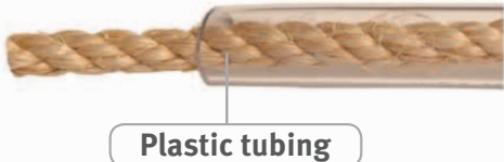
Rope care

Ropes should be kept free from wear and tear, such as chafing caused by constant rubbing of the fibers against hard or rough surfaces.

Looking after rope

The following tips will help you keep your rope in good condition:

- To prevent chafing, fix some plastic tubing (see right) over parts of the rope that are in constant contact with a rough surface.



- If the rope does become worn, avoid putting it under any strain.
- Clean dirty rope with a scrubbing brush (see left), using water and liquid soap. Afterward, coil the rope (see pp.16–17) and hang it up to dry.
- Rope made from natural fibers should never be stored when it is wet because it will quickly decay.

Rope deterioration

- Worn or broken yarns or fibers sticking out from a rope are signs of deterioration.
- Untwist the lay of the rope to see if grit or sand are causing hidden damage.
- Rope that shows signs of deterioration should not be used for any tasks or activities that may involve risk to a person or property.



Storing Rope

When you are not working with your rope, coil it up neatly to prevent it from becoming tangled and then hang it in a dry place. Make sure natural-fiber rope is completely dry before you store it away.

Coiling rope

Coil rope carefully into loops with even turns that follow the twists of the rope's construction. Use some thin line to hold the loops together so the coiling cannot be disturbed.

Braided rope

Coil braided rope into figure-eight loops to balance the left- and right-hand twists of its strands.



Figure-eight loops

Three-strand rope

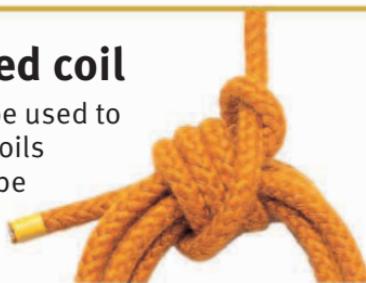
Coil three-strand rope into loops in a clockwise direction.



Clockwise loops

Making a self-stopped coil

The working end of a rope can be used to make a stopper that holds the coils together. The stopper can then be used to hang up the rope.

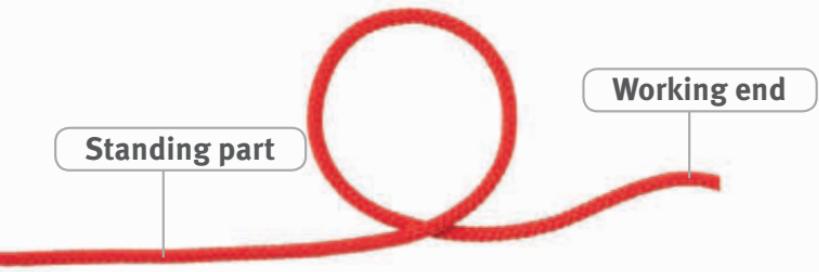
**1****Under****2****Under****Over****4****Tighten to finish**

Terms and Tools

To tie the knots in this book, all you need to know are a few important terms, and how to use certain specialist tools that will help you with some of the more complex tasks.

Ends of the rope

The end of the rope that you actively use to make a knot is called the working end. The other end is inactive and is known as the standing part.



Shaping the rope

You can bend a rope into shapes such as a bight, loop, and crossing turn, to help create different knots.

Bight

The rope is doubled.

Bight

Loop

Loop

The rope is formed into a circle without crossing itself.

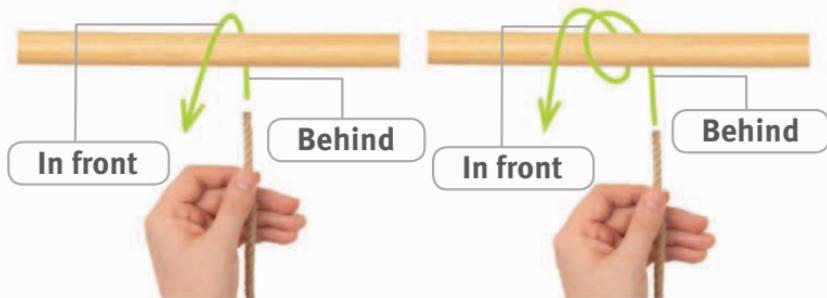
Crossing turn

The rope crosses itself to form a circle.

Crossing turn

Turns around an object

When you pass the working end of a rope around another rope, or around an object, the maneuver is described as making a turn.



Turn

A turn is a single pass of the rope around an object. It is also known as a single turn.

Round turn

A round turn is two turns, or passing the rope twice, around the object.

Useful tools

A few simple but specialized tools will help make working with rope considerably easier. These tools are available from hardware and marine supply stores or on the Internet.

Sailmaker's palm and needle

A reinforced glove and heavy needle. The glove makes it easier to push the needle through thick rope.



Swedish fid

The hollow blade makes it easier to tuck rope when splicing.



Adhesive tape

For quick, temporary whippings.



Marlinspike

An all-metal tool used for separating the strands of a knot.



Sharp knife

Essential for cutting or trimming rope.



Netting needle

For working with thin line when making nets.



Techniques

Some basic knot-tying techniques will provide you with the fundamental skills to make both simple and complicated knots in a quick and easy fashion.

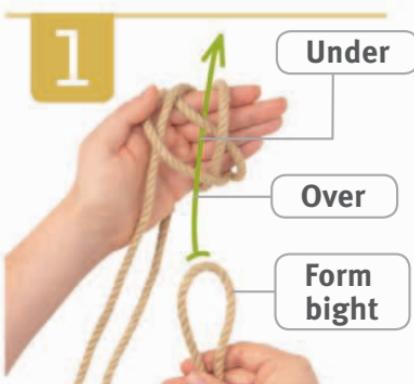
Estimating rope length

To estimate how much rope is needed for a knot, make a dummy with loose turns, leaving out the actual tucks. It is better to overestimate how much rope is required rather than run out of cord.



Working with a long length of rope

More complex knots will require a long length of rope. Rather than attempting to manipulate an unwieldy working end, simply form a bight (see p.18).



Form the working end into a bight by folding it back on itself before tucking.



After tucking the bight, pull the rest of the working end through.

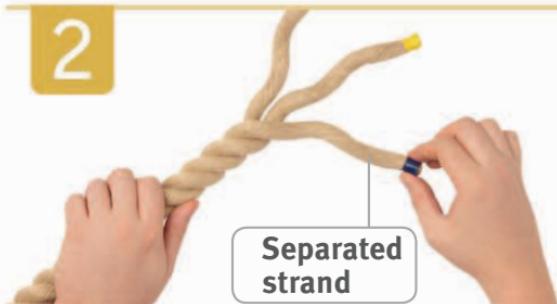
Unlaying and laying rope

Some knots and most splices (see pp.334–63) are made with the strands of the rope, rather than the whole rope. You can unlay these by opening them up or lay them to remake the rope.

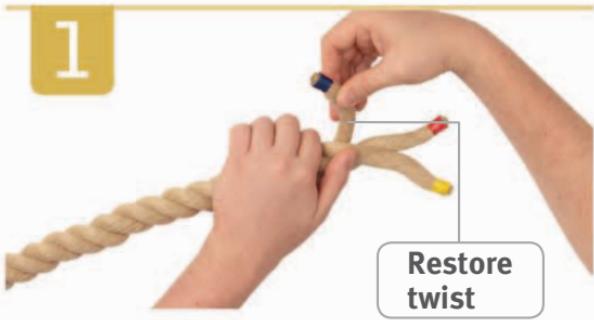
1

Unlaying a rope

Tape the end of each strand as you unlay it, making sure you keep the twist in the strand intact.

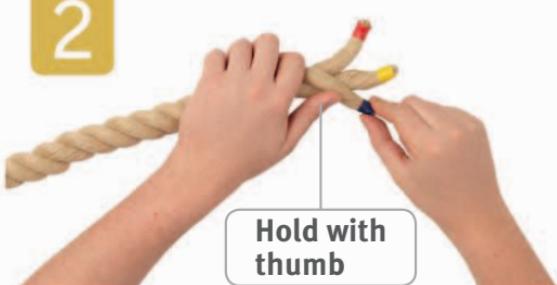
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Separate the strands by gently untwisting each one from the body of the rope.

1

Laying a rope

When relaying an unlaid piece of rope, try to restore the original twist in each strand to hold them together.

2

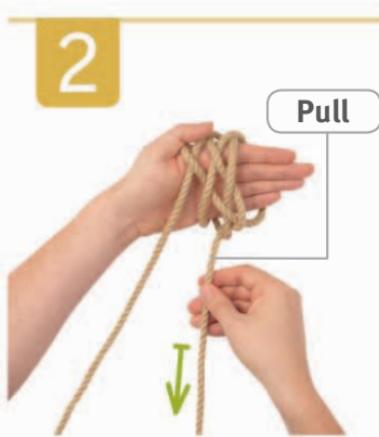
Force the strand into place with your thumb before moving on to the next strand.

Working out the slack

Once you have formed a knot you can systematically work out any slack to make it tighter. Do this a little at a time rather than trying to tighten the whole knot at once.



Find a part of the knot that contains slack and pull the slack through.



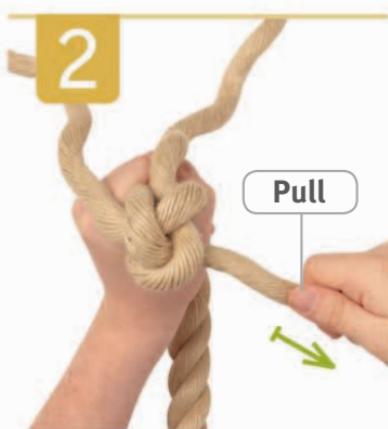
Work the slack through the knot to the end of the rope.

Tightening a knot

To tighten a knot, pull each end gently and carefully. Try to be systematic when tightening multi-strand knots—an even knot can only be created if all the strands are equally tight.



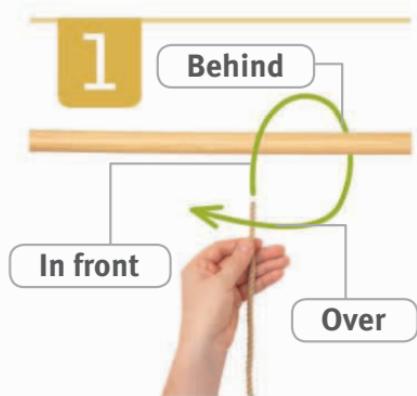
Firmly hold one end of a strand between finger and thumb.



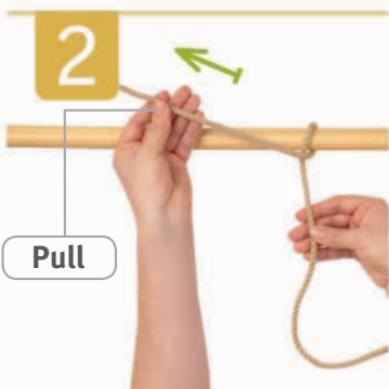
Feel the knot tighten as you pull the end gently through. Repeat with the other strands.

Forming a half hitch

A half hitch is a simple maneuver that is one of the building blocks of knot tying. Usually, half hitches are made around an object, such as a pole, or another rope.



Make a half hitch by taking the rope once around the object you are securing it to.



Lock the half hitch in place by passing one end of the rope across the other end.

Forming a crossing turn

A crossing turn, like a half hitch, is the basis of many knots. It can be formed by rolling the rope between the finger and thumb of one hand so that it twists over or under itself to form a loop.



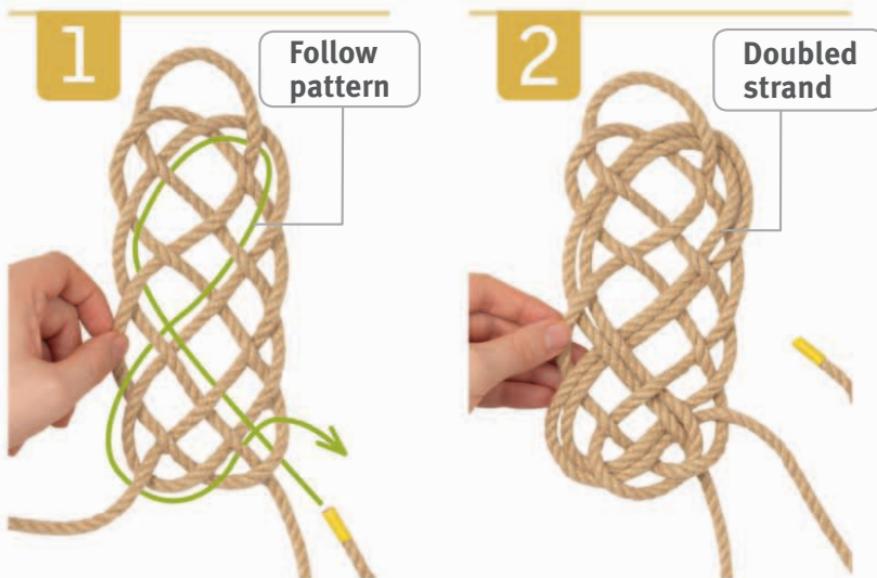
Roll the part of the rope that is to lie under the turn between the thumb and fingers.



The rope will twist under itself to form the crossing turn.

Doubling up

Knots can often be doubled—or even tripled—by replicating the original pattern with additional strands. These should follow the path of the first strand without crossing it.



Create the first pattern of the knot, making sure there is enough space for the second pass. Follow around with the second strand.

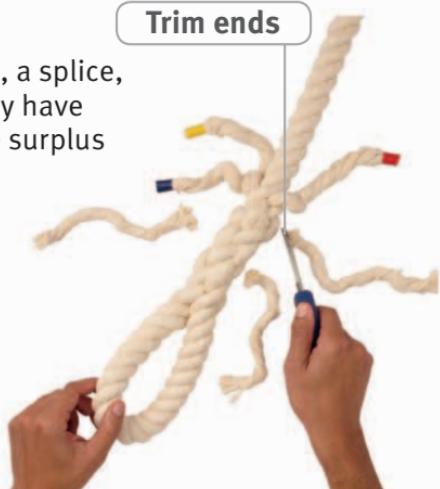
Ensure that the doubling strand does not cross the original strand. Some knots can be tripled or even quadrupled.

Trimming the ends

When you have finished a knot, a splice, or a whipping, you will probably have some loose ends. Cut off these surplus ends with a sharp knife.

Not too close

Do not trim an end too close to the body of the knot or the splice because it may pull out when put under strain.



Working into shape

A knot will probably need to be coaxed into a neat and even shape. This process is known as dressing a knot. A knot that is neat is likely to be stronger and more secure.



Working with your fingers and thumbs, push and pull the strands into shape. Turns may need to be twisted tight.



Ensure the strands of the rope sit neatly alongside each other, emphasizing the knot's structure and increasing effectiveness.

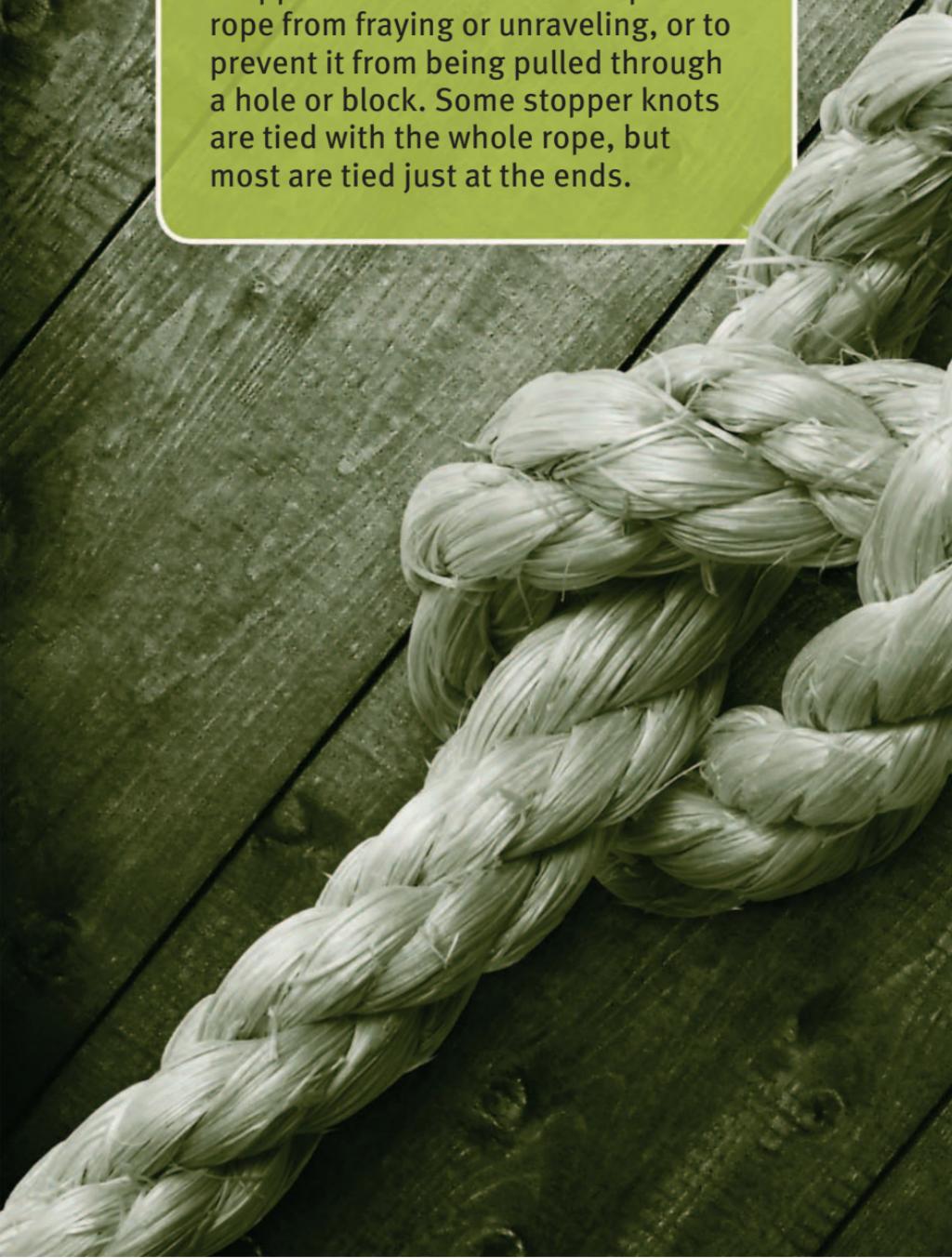
Seizing

Seizing involves using small line to bind together two parts of a larger rope or two or more larger ropes positioned side by side. Historically, the fixed rigging on sailing ships were seized rather than knotted or spliced together.



Stopper Knots

Stopper knots are used to stop a rope from fraying or unraveling, or to prevent it from being pulled through a hole or block. Some stopper knots are tied with the whole rope, but most are tied just at the ends.





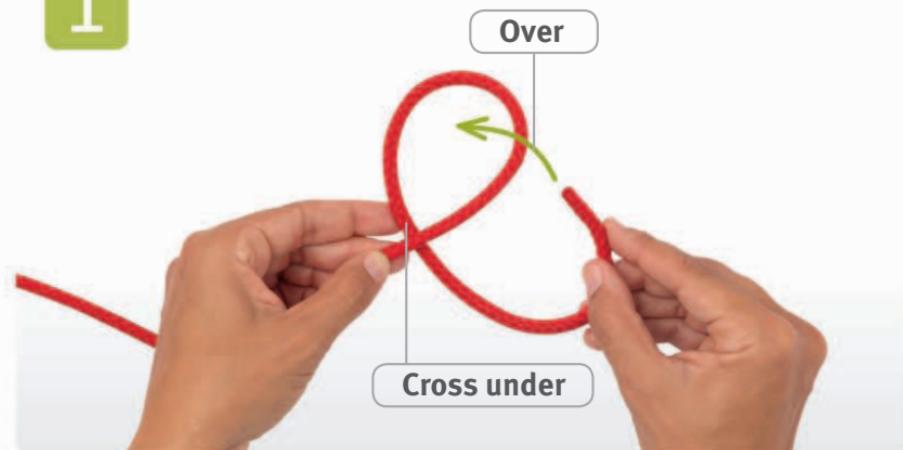


Overhand Knot

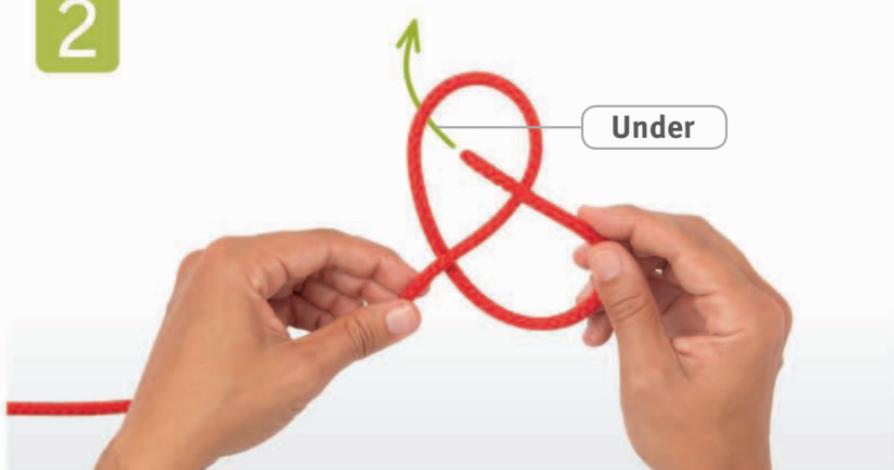
- The simplest of all knots.
- The basis of knots in the bend and loop families.
- Difficult to untie when tightened.
- Also known as the Thumb Knot.



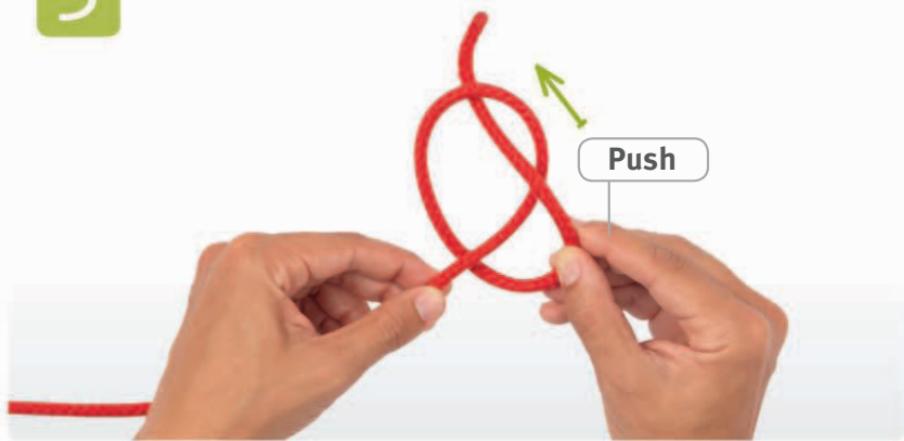
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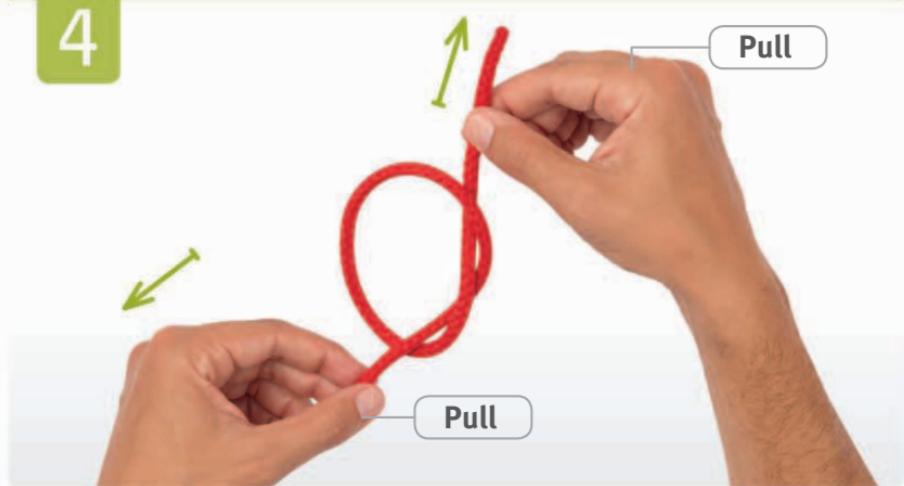
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3



4



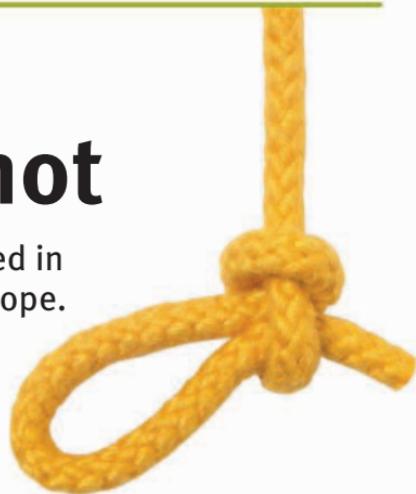
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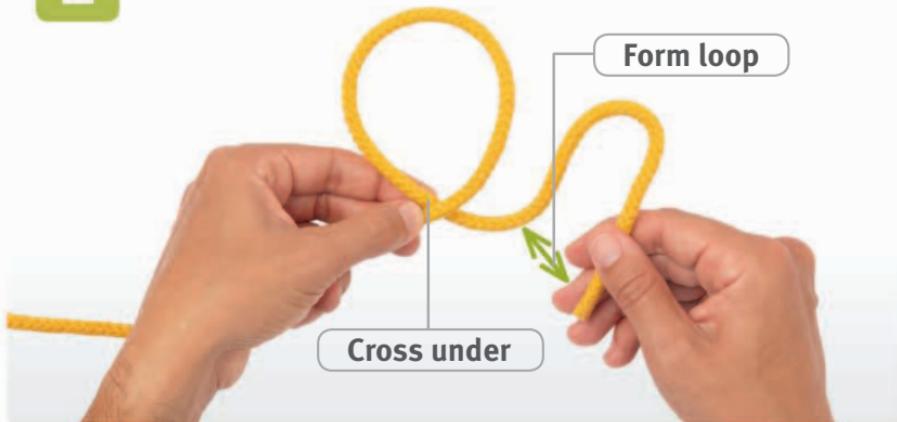


Slipped Overhand Knot

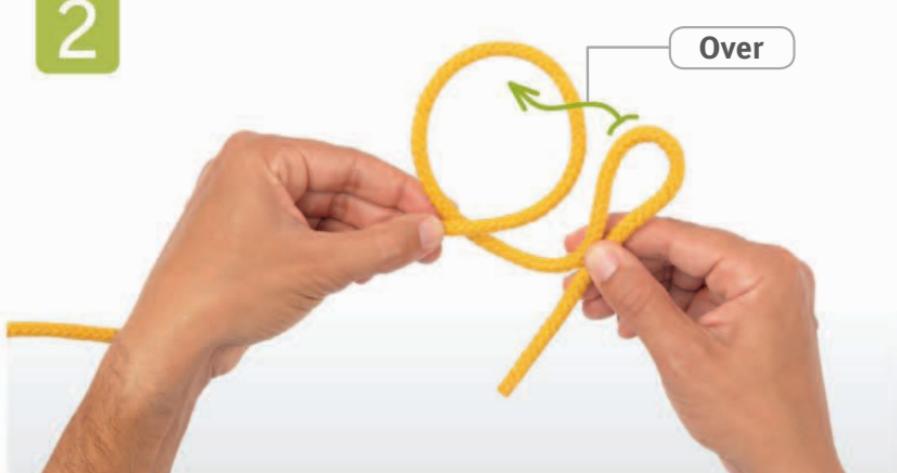
- A simple slipknot that can be tied in the middle or at the end of the rope.
- Easier to untie than the Overhand Knot (see pp.28–29).
- Untie by pulling on the short end of the loop.



1



2



3



Under

4



Pull

5

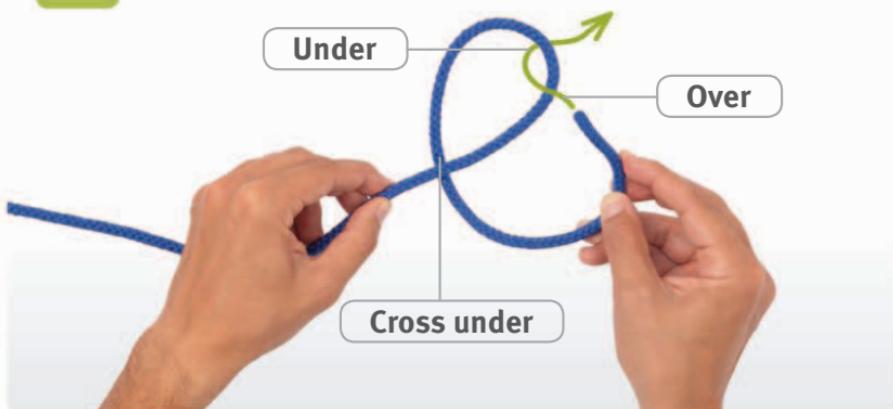


Tighten to finish

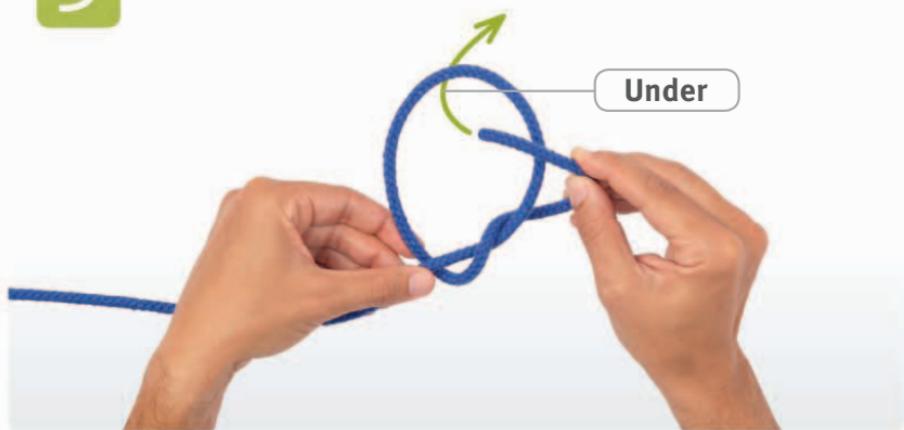


Double Overhand Knot

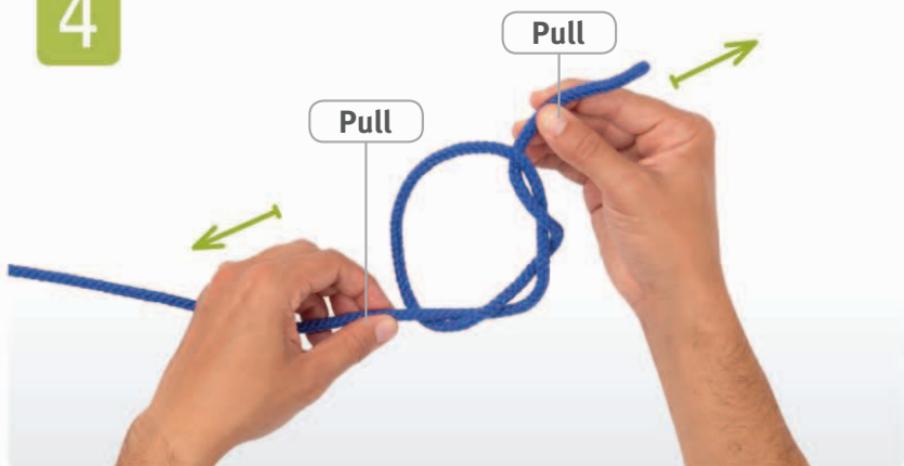
- A secure stopper knot that is difficult to untie.
- Bulkier than the Overhand Knot (see pp.28–29).
- Can be made larger by adding extra turns.

**1****2**

3



4



5





BEST FOR ... Sailing

A good sailor only needs to know how to tie half a dozen basic knots. These knots will help to secure and control the lines, halyards, lanyards, painters, and sheets on yachts, dinghies, and other boats.

Bowline » pp.240–41

-  A versatile knot—the Bowline is often called the king of all loop knots.
-  Easy to tie and untie, so is ideal for tying lanyards to fenders, sheets to sails, and making a loop to throw over a bollard.
-  Difficult to untie under strain and can loosen when not under load.



Similar knots:
» pp.246–47
Bowline with
Two Turns
» p.248 Bowline
with Stopper

Figure-Eight

» pp.38–39

-  A stopper knot with some bulk that is quick to tie.
-  Ideal for stopping the end of a rope from running out through a block.
-  An easy knot to untie, even if it has been under a lot of strain.



Similar knots:
» pp.44–46
Sink Stopper Knot
» pp.47–48
Stevedore Knot

Sheet Bend » pp.140–41

 A quick and easy method of joining two ropes together.

 A Double Sheet Bend can be used to tie ropes of different diameters together securely.

 Not suitable for joining ropes of different sizes.



Similar knots:
 » pp.142–43
Tucked Sheet Bend
 » pp.144–45
Double Sheet Bend

Round Turn and Two Half Hitches » pp.180–81

 Perfect for tying a rope to a mooring post or ring, because the round turn takes much of the strain off the rope.

 Can be untied easily, even when it is under strain.

 The pull of the rope can be at right angles to the ring or post to which it is attached.



Similar knots:
 » pp.184–85
Fisherman's Bend



Rolling Hitch

» pp.176–77

✓ Can be used to tie a second line to a sheet in order to relieve strain.

✓ Useful for tying a fender lanyard to a rail.

✗ Can fail if the pull of the lines are not properly aligned.



Similar knots:
» pp.178–79
Mirrored
Rolling Hitch

Square Knot » pp.85–86

✓ Ideal for tying up a bundle of material.

✓ Can also be used to fasten the unused part of a sail around the mast.

✓ Can be slipped for quick release.

✗ Not suitable for joining two ropes together—it may collapse and come undone.



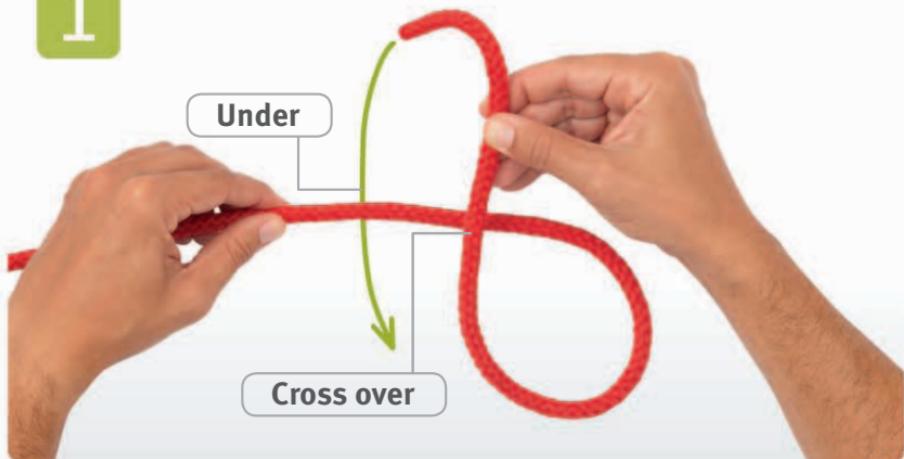
Similar knots:
» pp.87–88
Slipped Square Knot
» pp.96–98
Surgeon's Knot





Figure-Eight

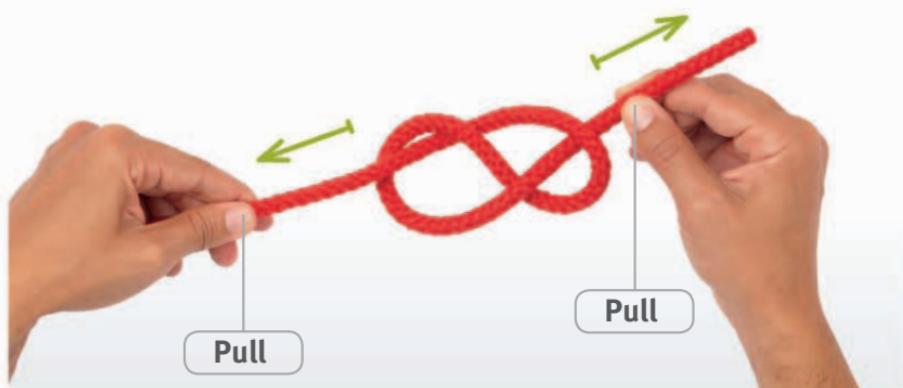
- Used to prevent a rope from slipping through a hole.
- This knot structure is the basis for several other knots such as the Packer's Knot (see pp.102–04).
- Can be tied quickly and untied easily.
- Works well as the base of a loop knot.

**1****2**

3



4

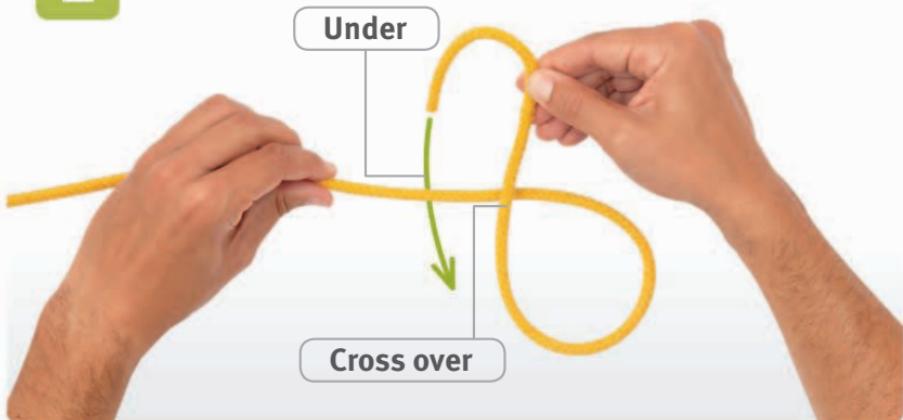
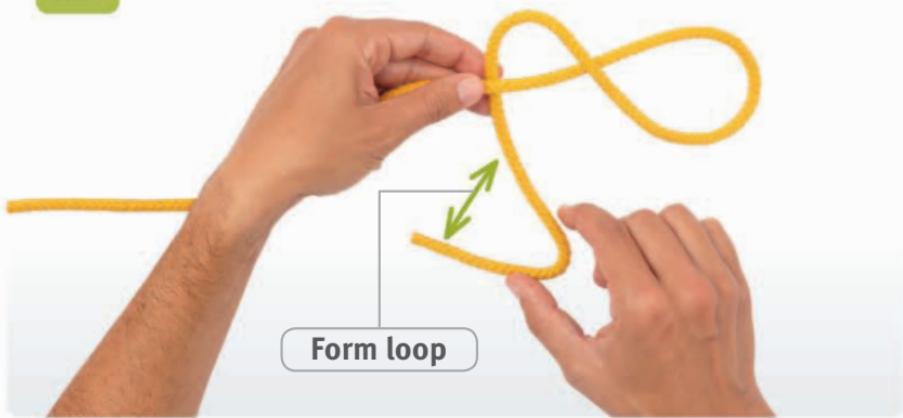


5



Slipped Figure-Eight

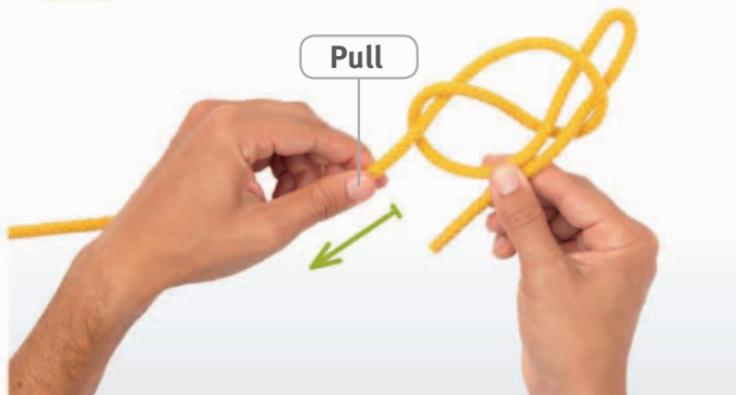
- A stopper knot that is quick to tie.
- Easier to untie than the Figure-Eight (see pp.38–39).
- Ensure that you work the knot tight so it does not come undone inadvertently.

**1****2**

3



4



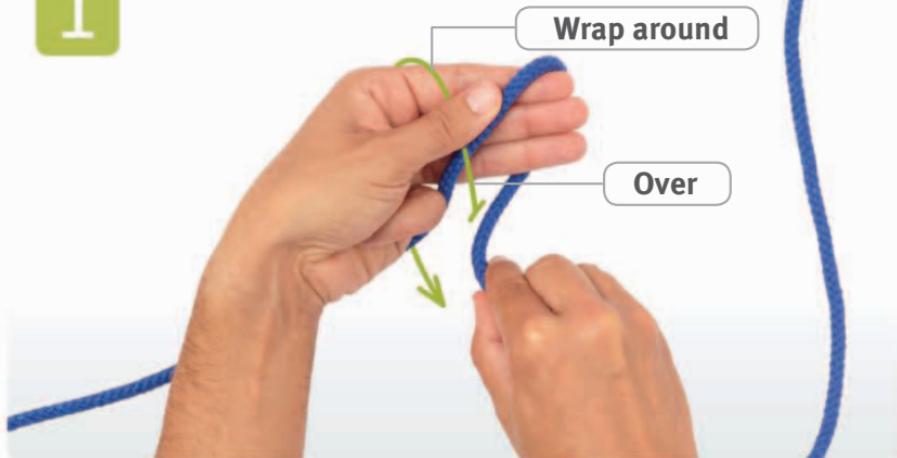
5





Stopper Knot

- Gives weight to the end of a rope that needs to be thrown.
- A variation of the Overhand Knot (see pp.28–29) and one of the most decorative stopper knots.

**1****2**

3

Close up loops

Withdraw finger



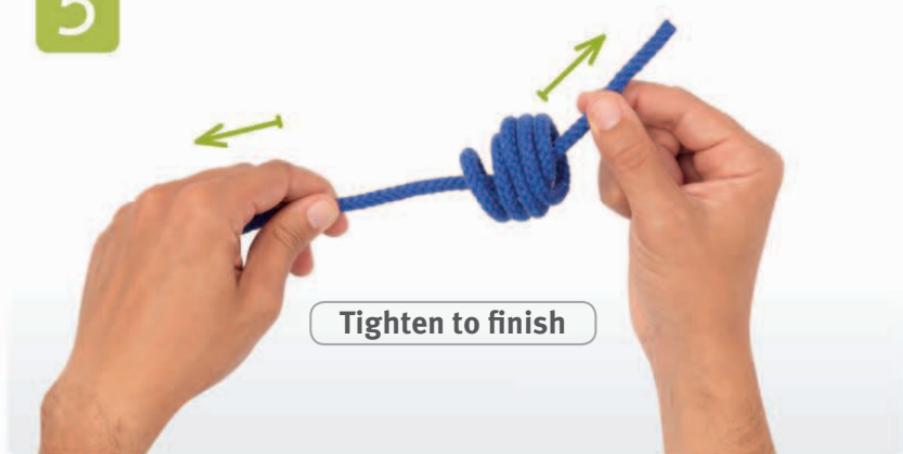
4

Under



5

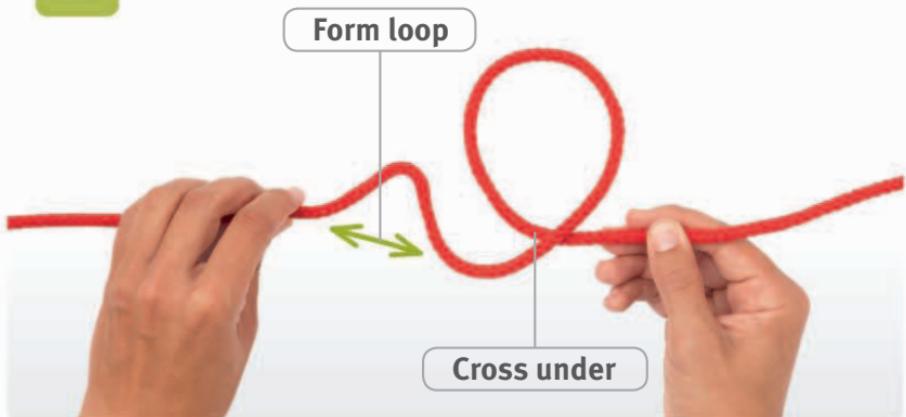
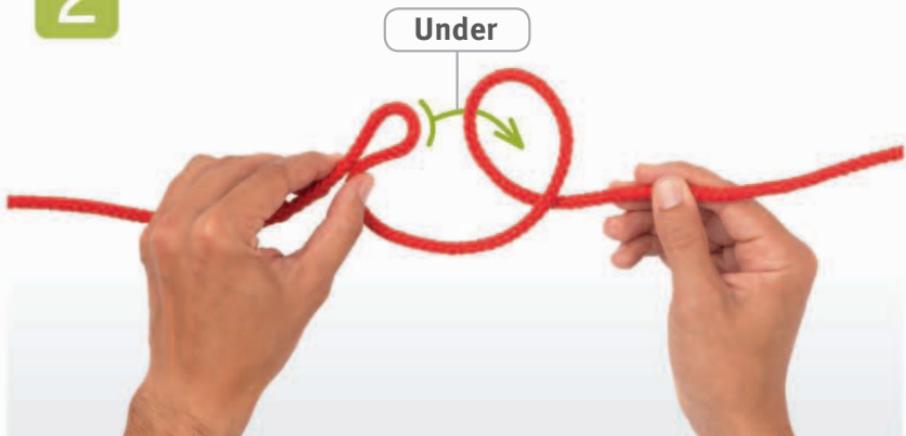
Tighten to finish





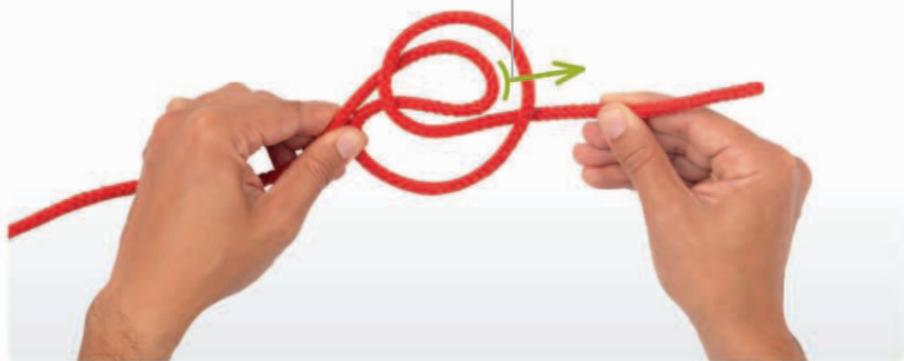
Sink Stopper Knot

- Used to prevent a thin rope from slipping through a large hole.
- Needs to be carefully tightened and worked into shape.
- Difficult to untie when tightened.

**1****2**

3

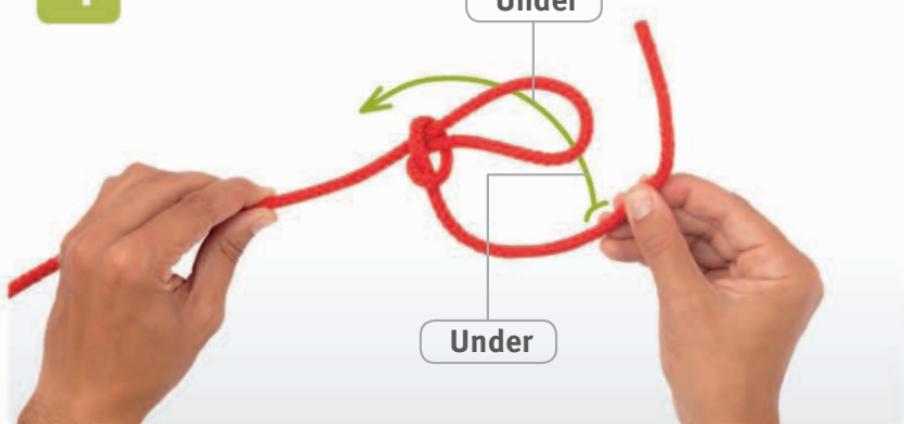
Over



4

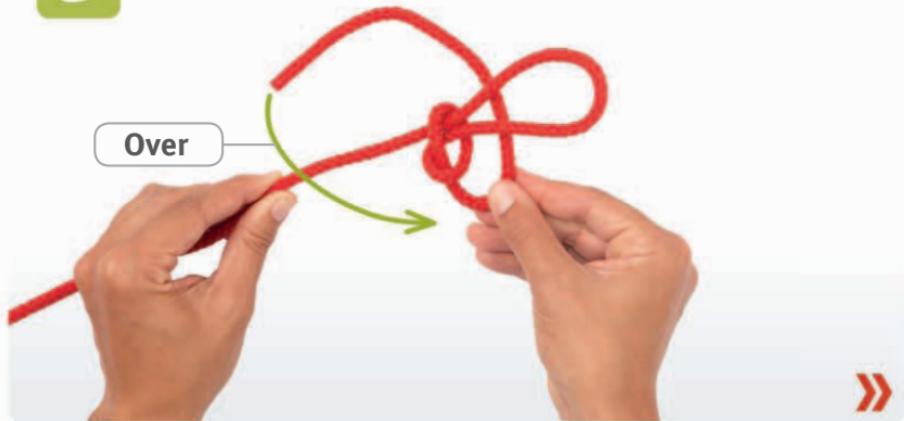
Under

Under



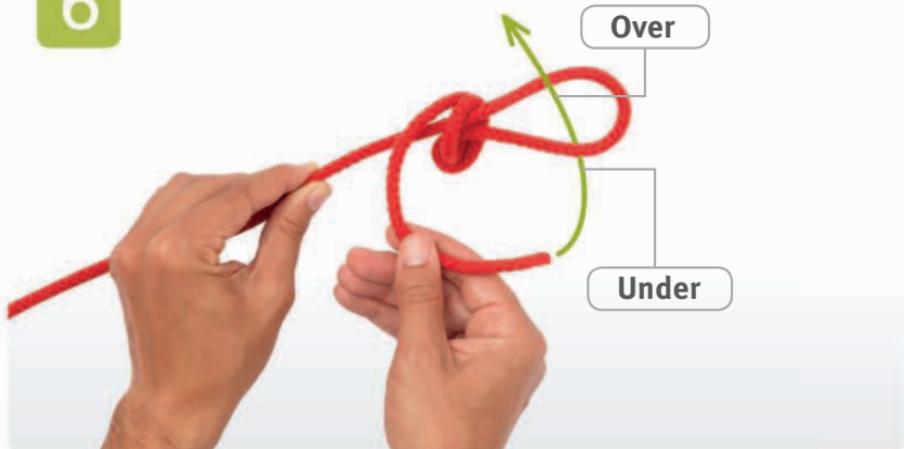
5

Over



46 STOPPER KNOTS

6



7



8



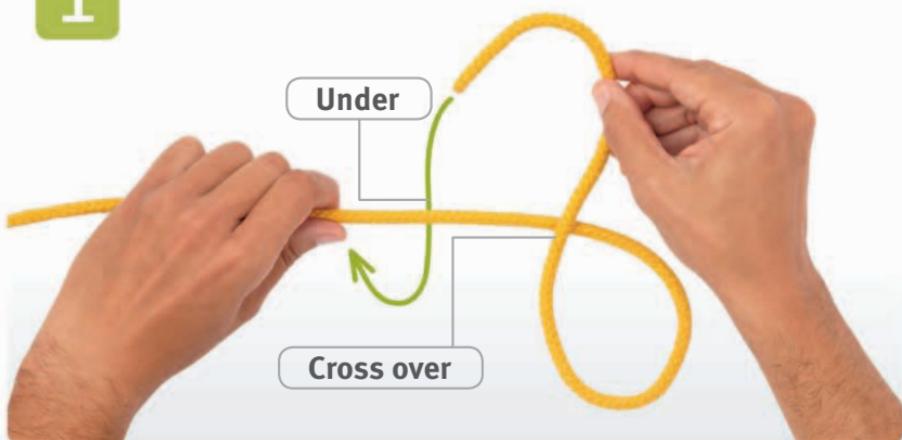


Stevedore Knot

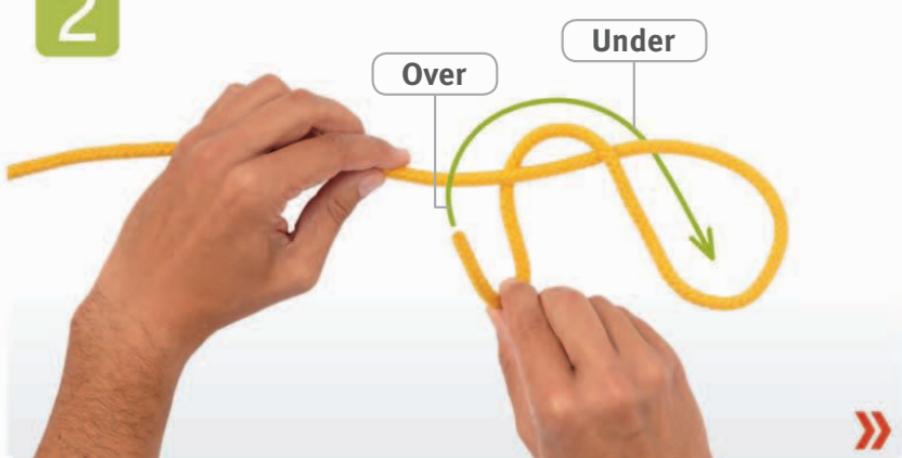
- Good for preventing a line from slipping.
- Starts like the Figure-Eight (see pp.38–39), but its extra turn forms a bulkier knot that is less prone to jamming and easier to untie.
- Preferred by stevedores or dockworkers.



1



2



48 STOPPER KNOTS

3



4



5





Monkey's Fist

- Adds extra weight to the end of a line that needs to be thrown.
- When working the knot into shape, ensure that all turns are even.
- When being used for decorative purposes, such as a key ring, place a wooden ball in the center to add weight.



1



2

Wrap around twice more



50 STOPPER KNOTS

3

Grip the bottom of the loops



4

Wrap around

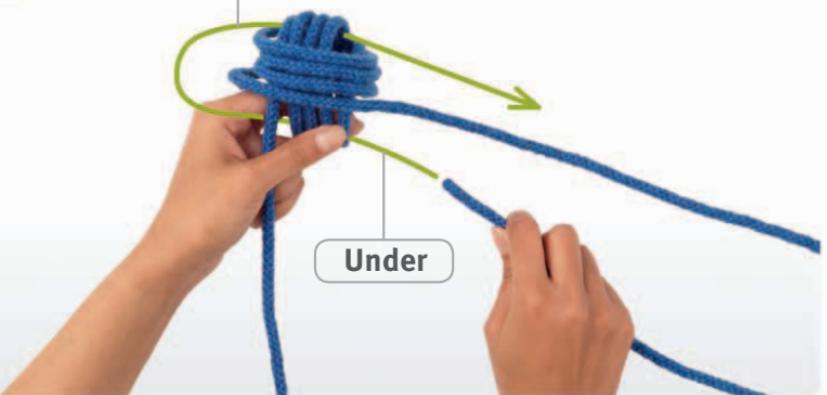


5

Wrap around three times



6

Under

7

Under**Under**

8

**Place wooden ball
in centre of knot**

52 STOPPER KNOTS

9

Rotate knot as you pull rope through

Under

Under



10

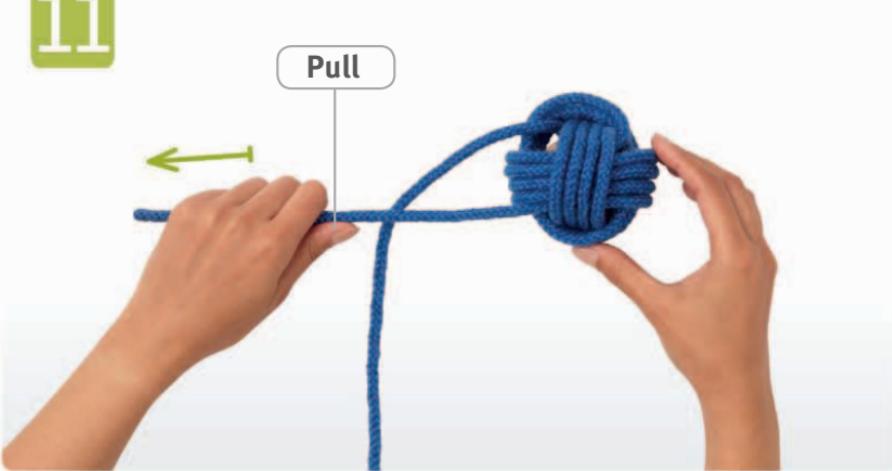
Over

Under



11

Pull

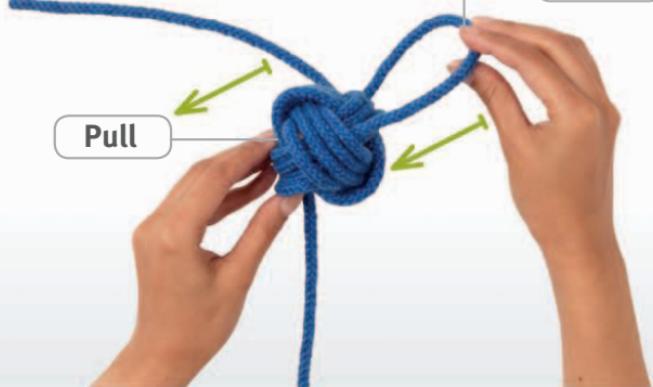


12

Work out slack

Push

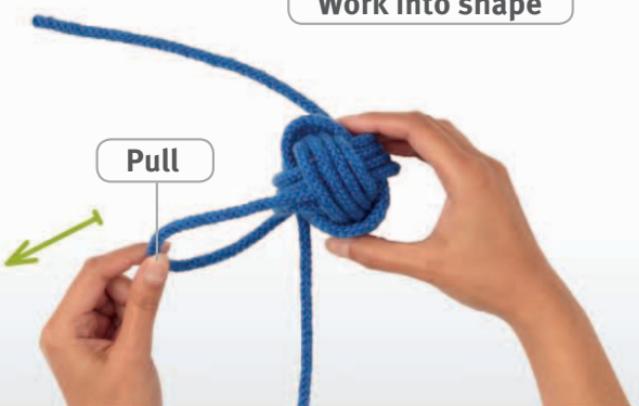
Pull



13

Work into shape

Pull



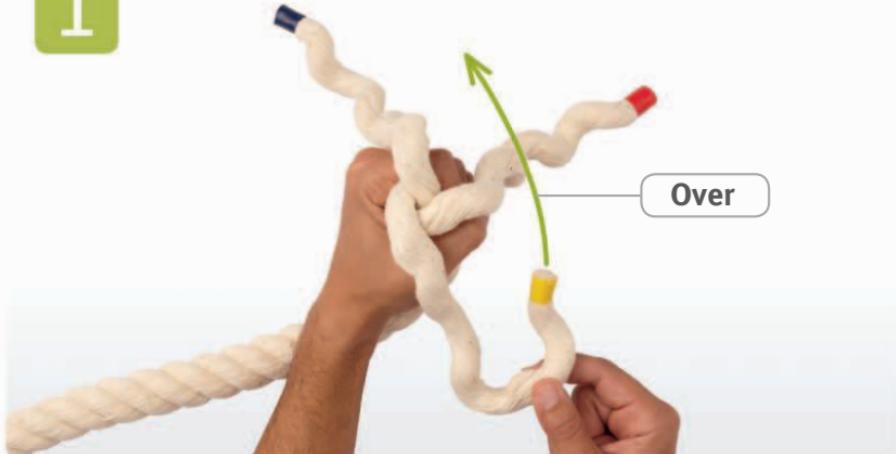
14

Trim and tuck
to finish

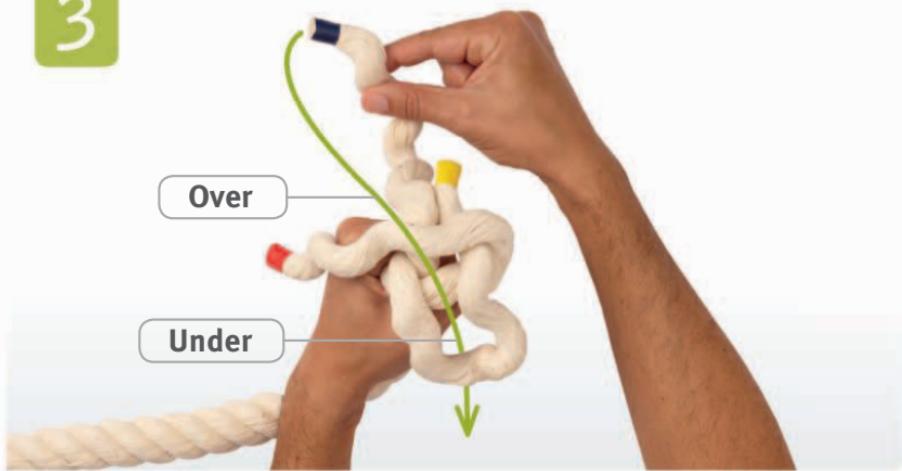


Crown Knot

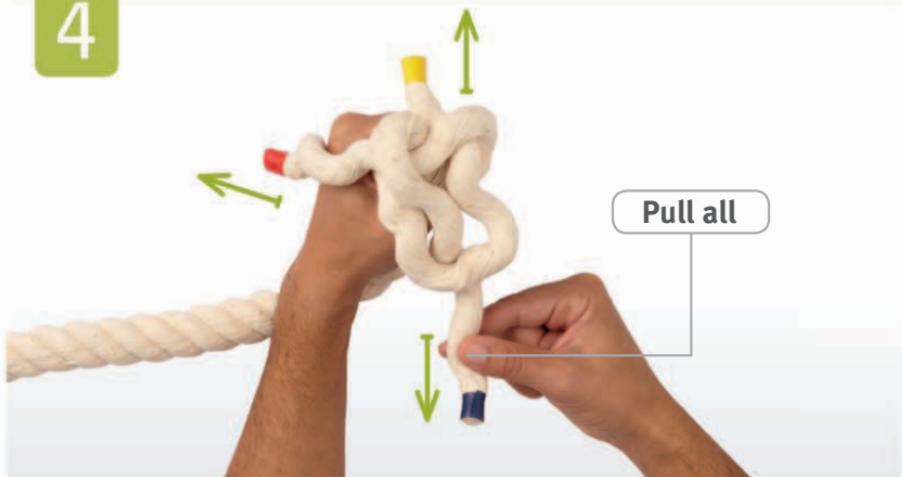
- Used to prevent the ends of a three-strand rope from unraveling.
- Forms the basis of other decorative stoppers such as the Manrope Knot (see pp.61–71).
- Ensure that strand ends point downward.

**1****2**

3



4



5





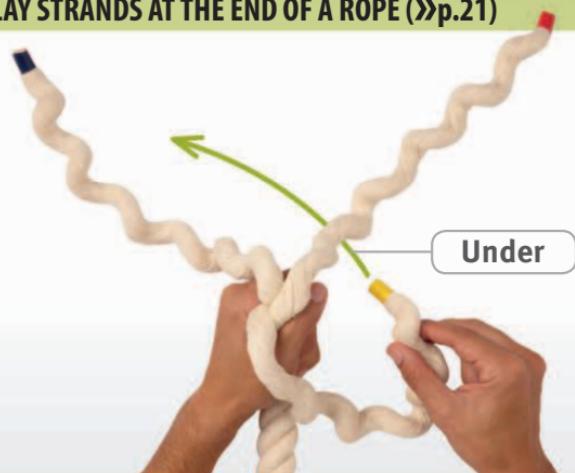
Wall Knot

- Used in combination with the Crown Knot (see pp.54–55) to make other decorative stopper knots such as the Manrope Knot (see pp.61–71).
- Whip (see pp.374–75) the ends before using as a stopper knot.
- Ensure the ends point upward from the knot.
- Forms the basis of the Matthew Walker Knot (see pp.58–60).



1

UNLAY STRANDS AT THE END OF A ROPE (»p.21)

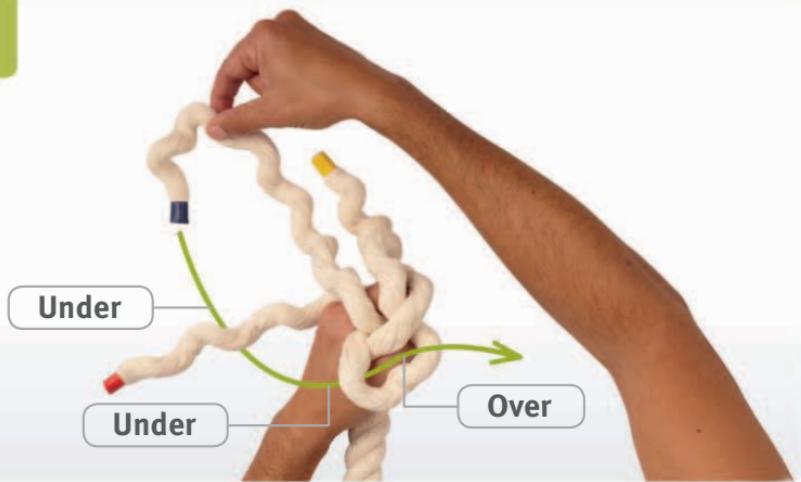


2

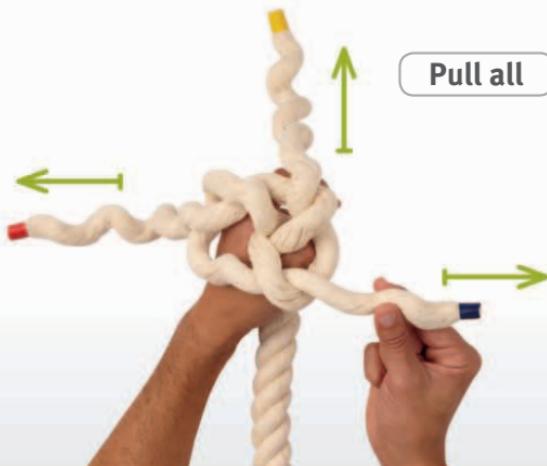
Under



3



4



5





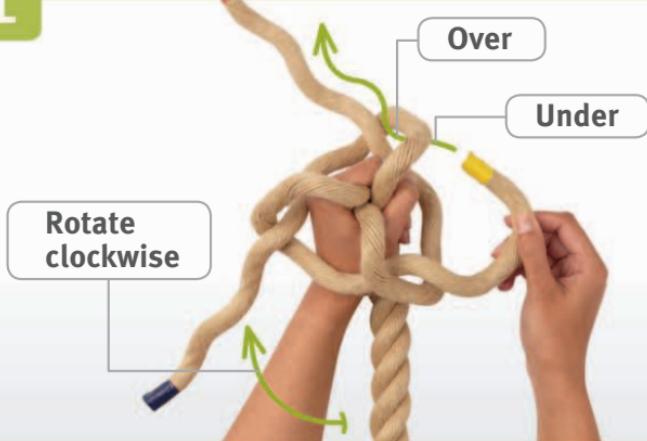
Matthew Walker Knot

- A stopper knot for three-strand rope.
- Can also be made with four strands.
- Traditionally tied at the end of a rope used as a handle for a wooden bucket.

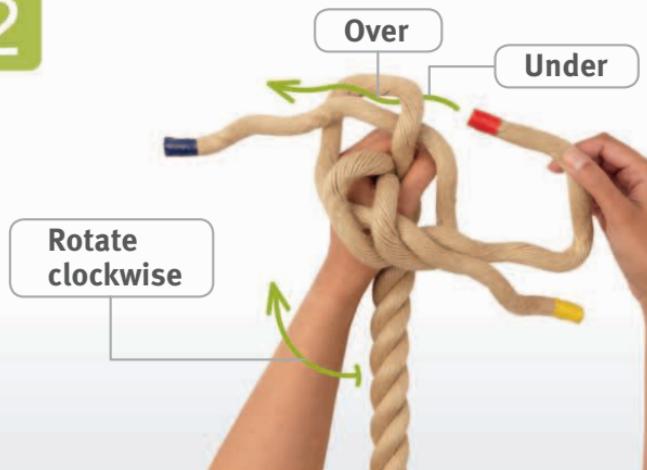


1

TIE A LOOSE WALL KNOT (»pp.56–57)



2



3

Rotate
clockwise

Over

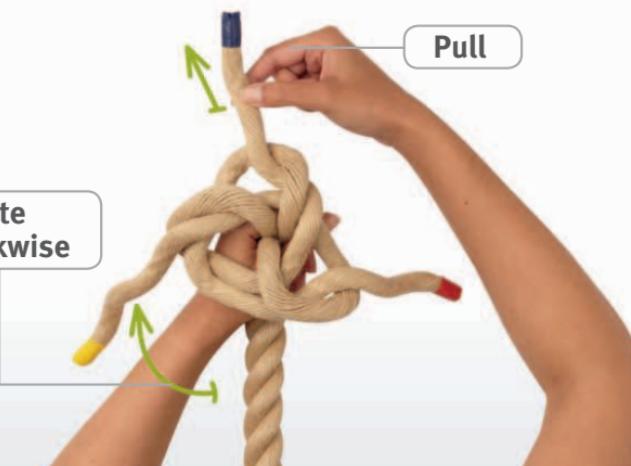
Under



4

Rotate
clockwise

Pull



5

Make a second
cycle of tucks



60 STOPPER KNOTS

6

Pull all



7

Pull all



8

Tighten to finish





Manrope Knot

- A decorative stopper knot made by tying a Crown Knot (see pp.54–55) on top of a Wall Knot (see pp.56–57).
- Traditionally tied on the ends of handrail ropes used when boarding ships.
- Can be doubled but care must be taken that each strand is positioned on the same side as the previous one.

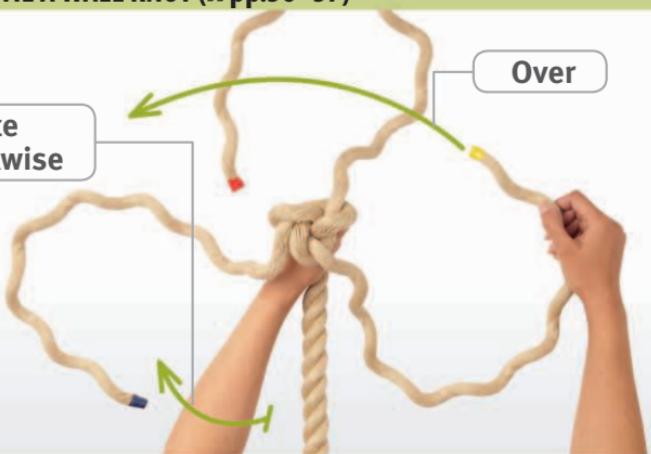


1

TIE A WALL KNOT (»pp.56–57)

Rotate
clockwise

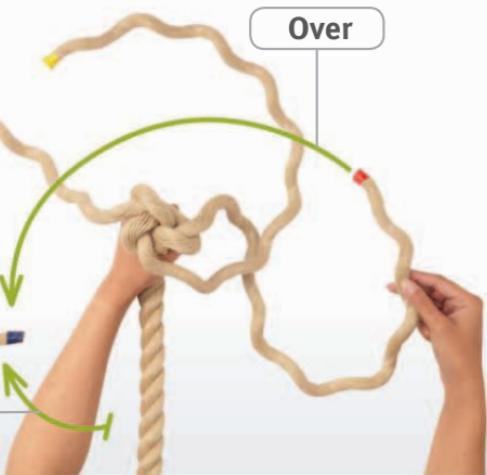
Over



2

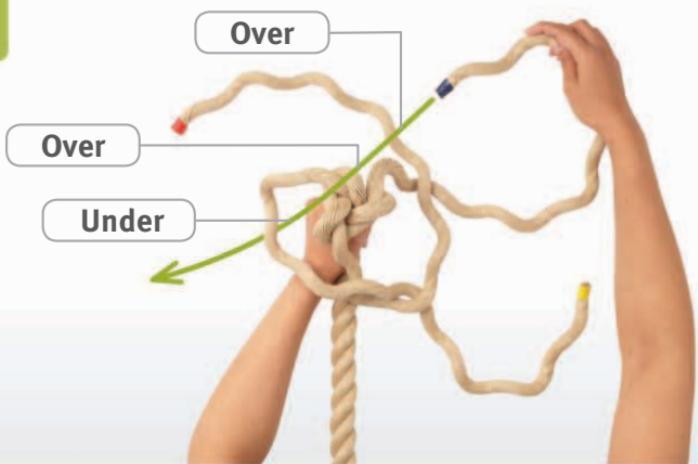
Rotate
clockwise

Over



62 STOPPER KNOTS

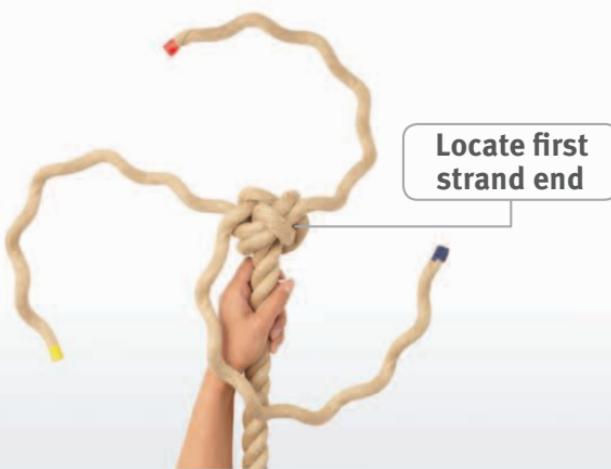
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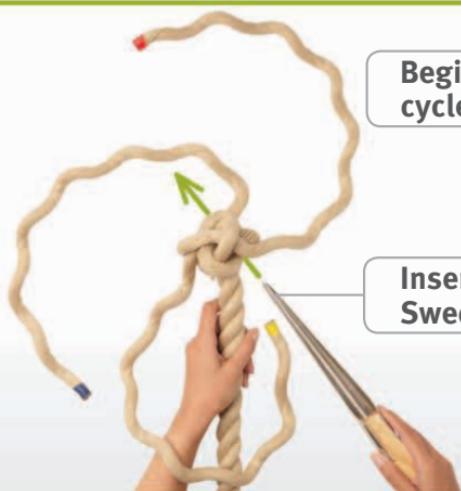
4



5

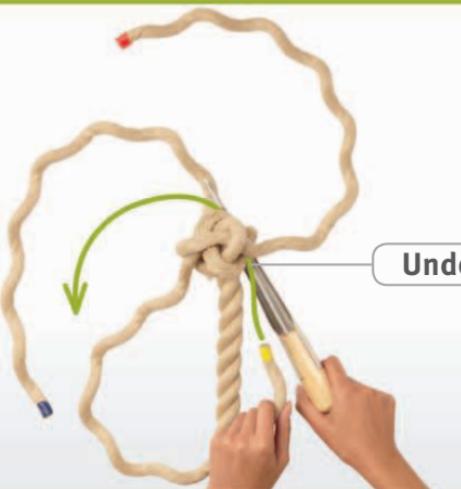


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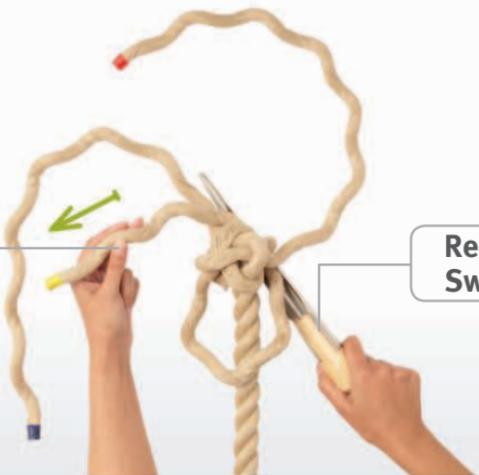


Insert
Swedish fid

7

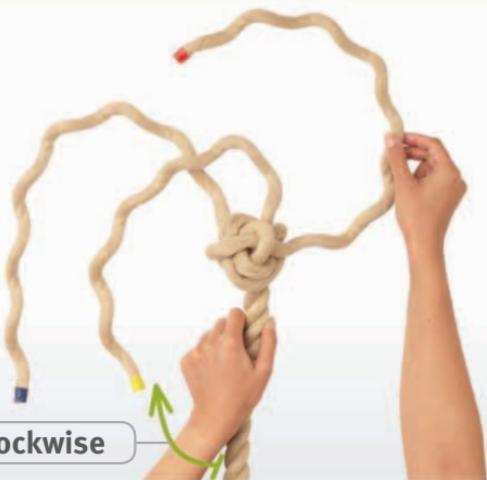


8

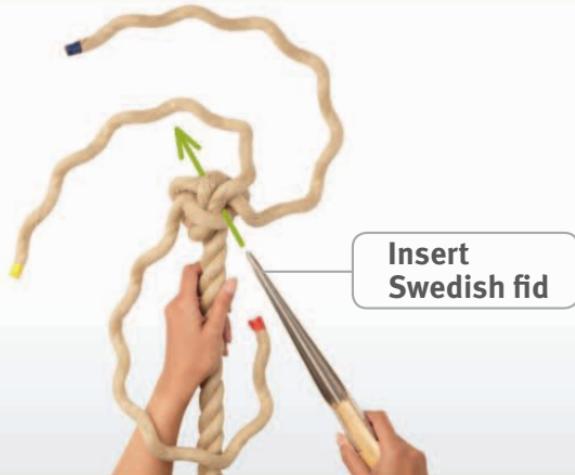


64 STOPPER KNOTS

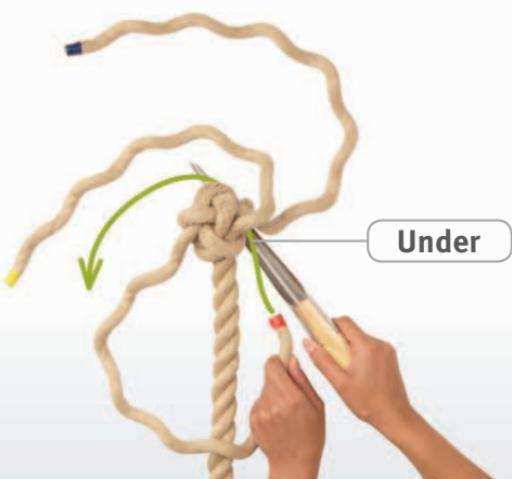
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10



11



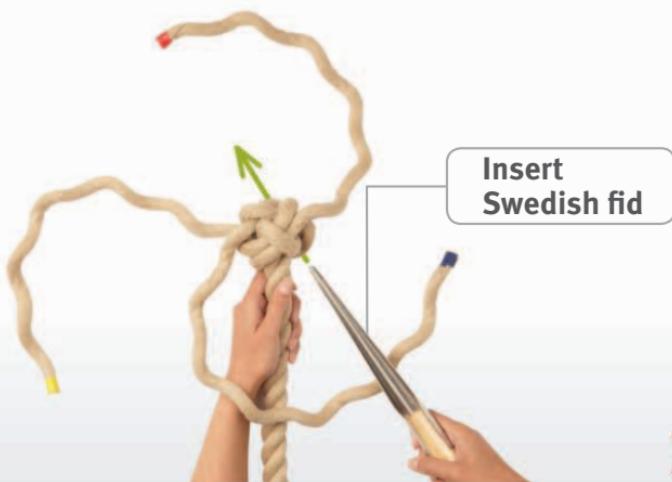
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13

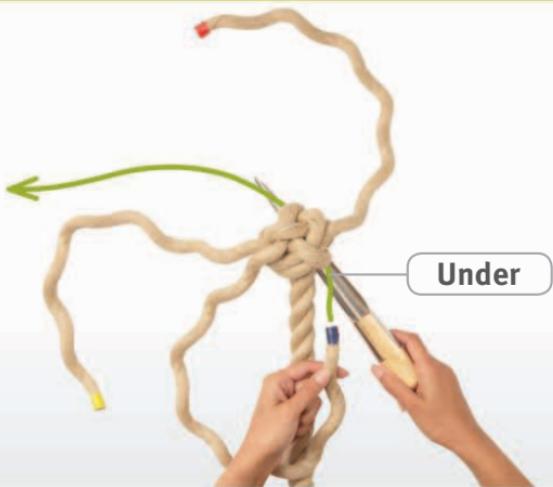


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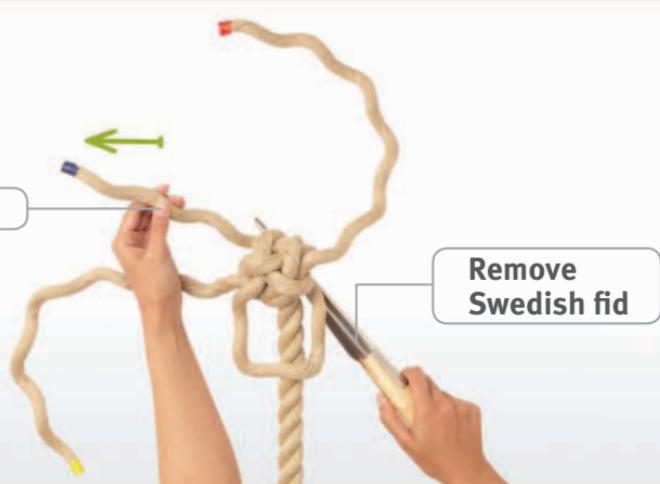


66 STOPPER KNOTS

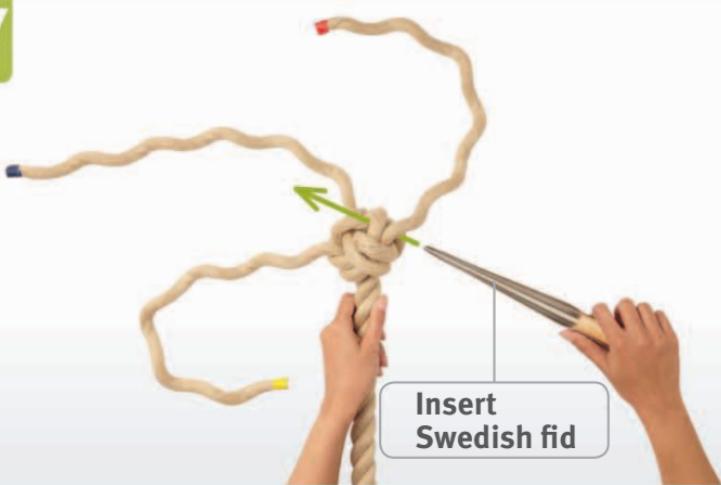
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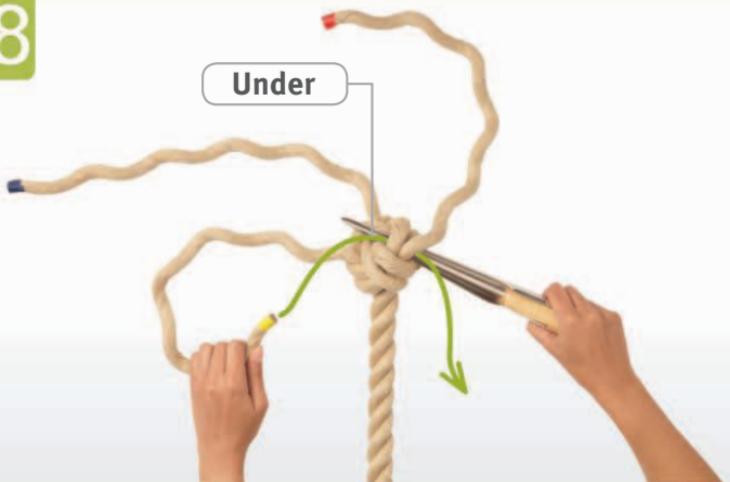
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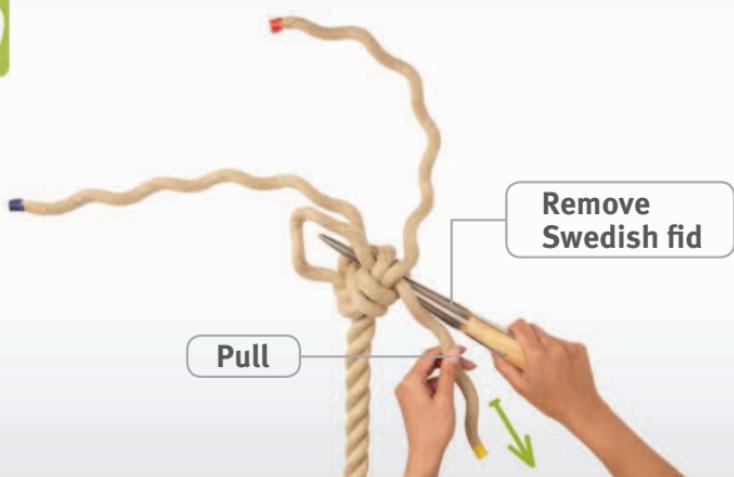
17



18



19

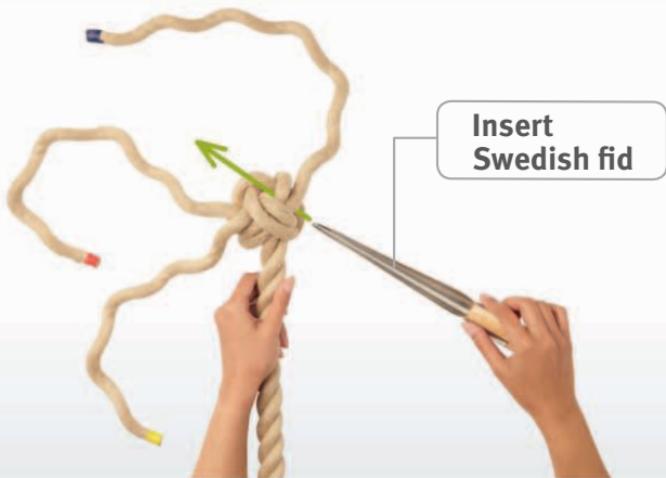


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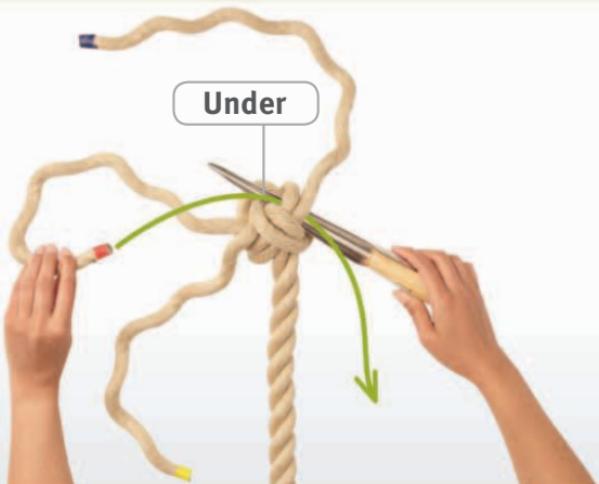


68 STOPPER KNOTS

21



22



23

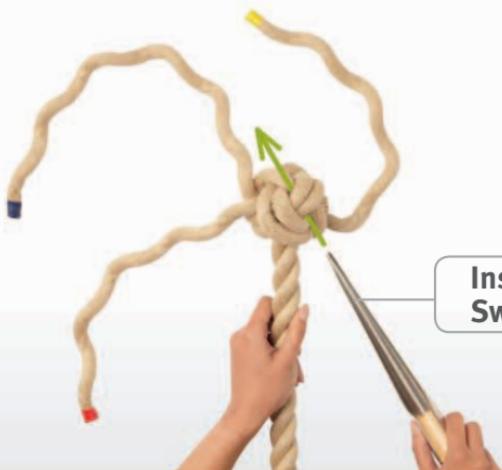


24



Rotate
clockwise

25



Insert
Swedish fid

26



Under



70 STOPPER KNOTS

27



28



29



30



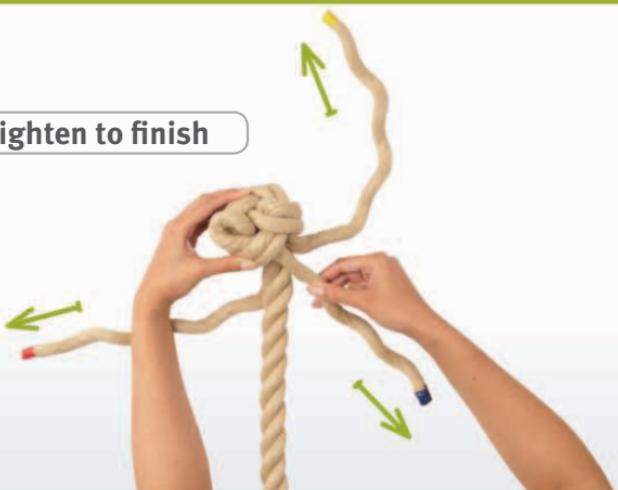
31

Complete final cycle of tucks



32

Tighten to finish





Diamond Knot

- A firm stopper knot tied in the strands of the rope.
- Made by tying a Wall Knot (see pp.56–57) below a Crown Knot (see pp.54–55).
- Sometimes used as an alternative to the Matthew Walker Knot (see pp.58–60).
- To make it easier to thread the strands, use a fid or Swedish fid (see p.19).

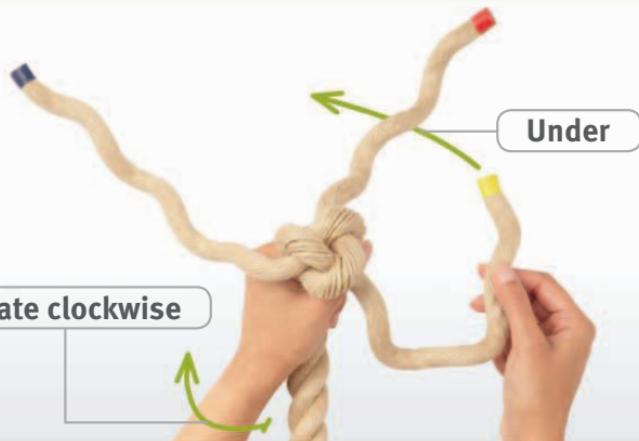


1

TIE A CROWN KNOT (»pp.54–55)

Rotate clockwise

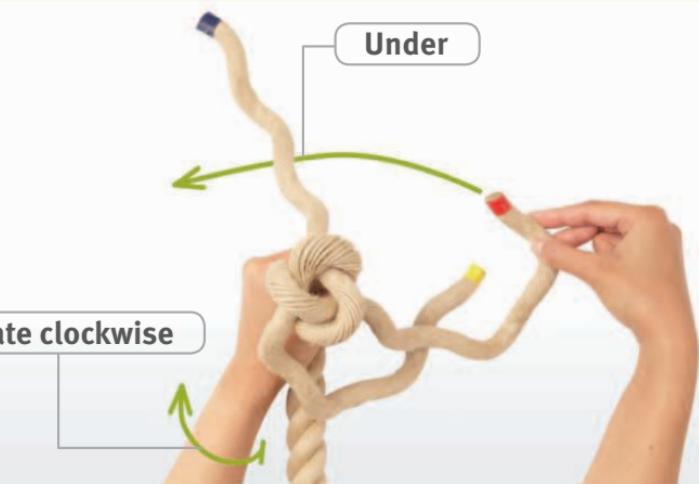
Under



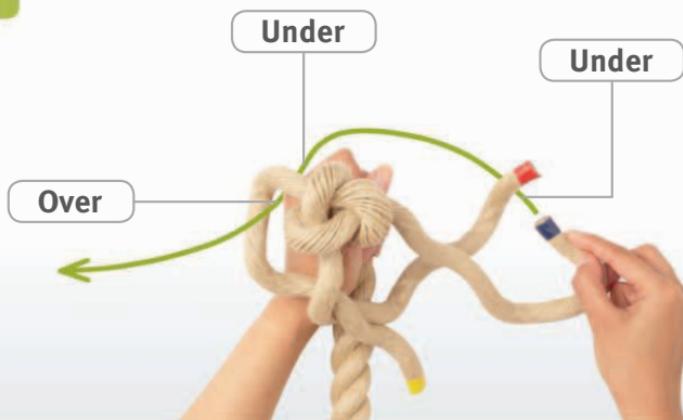
2

Under

Rotate clockwise



3



4



5

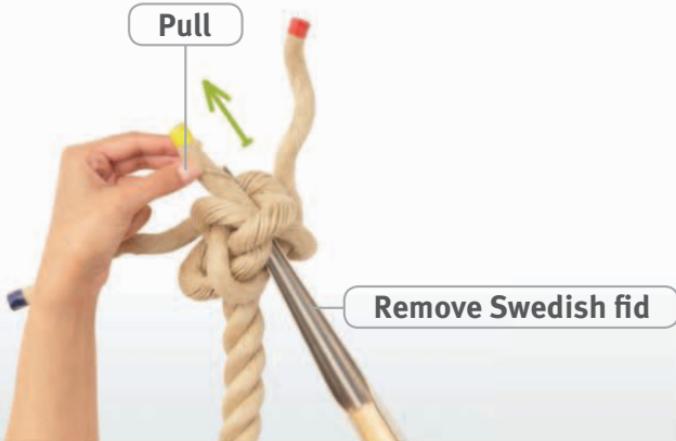


74 STOPPER KNOTS

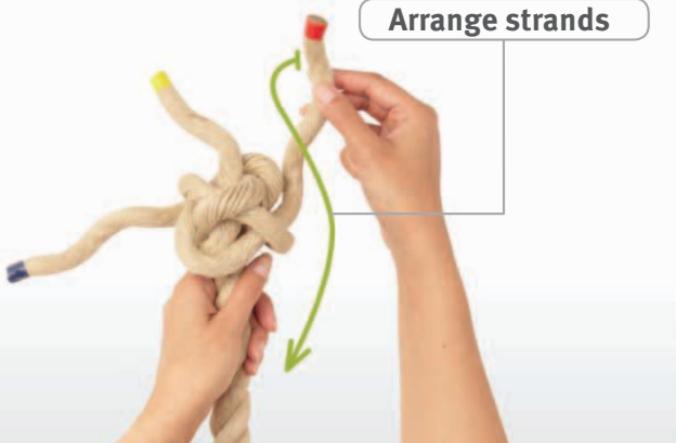
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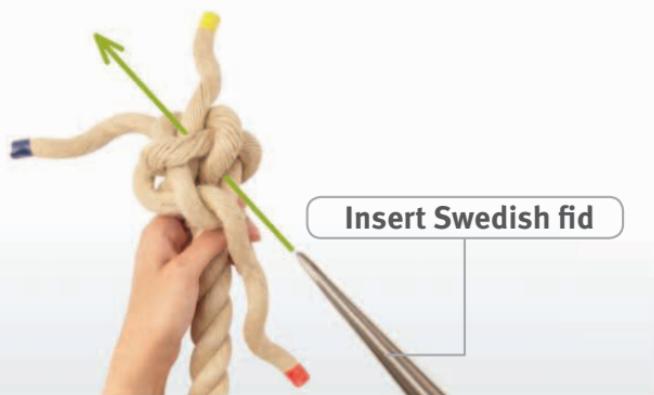
7



8



9



10



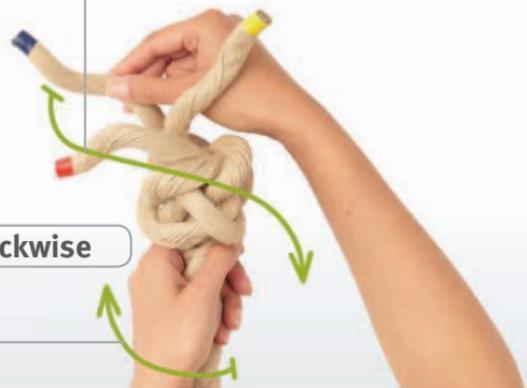
11



76 STOPPER KNOTS

12

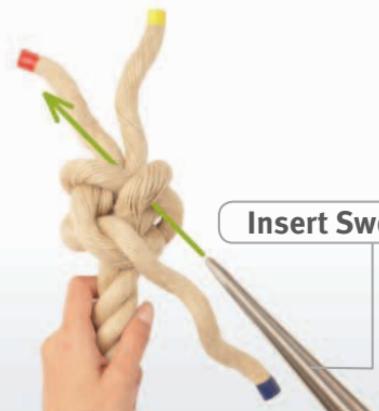
Arrange strands



Rotate clockwise

13

Insert Swedish fid



14

Under



15



16

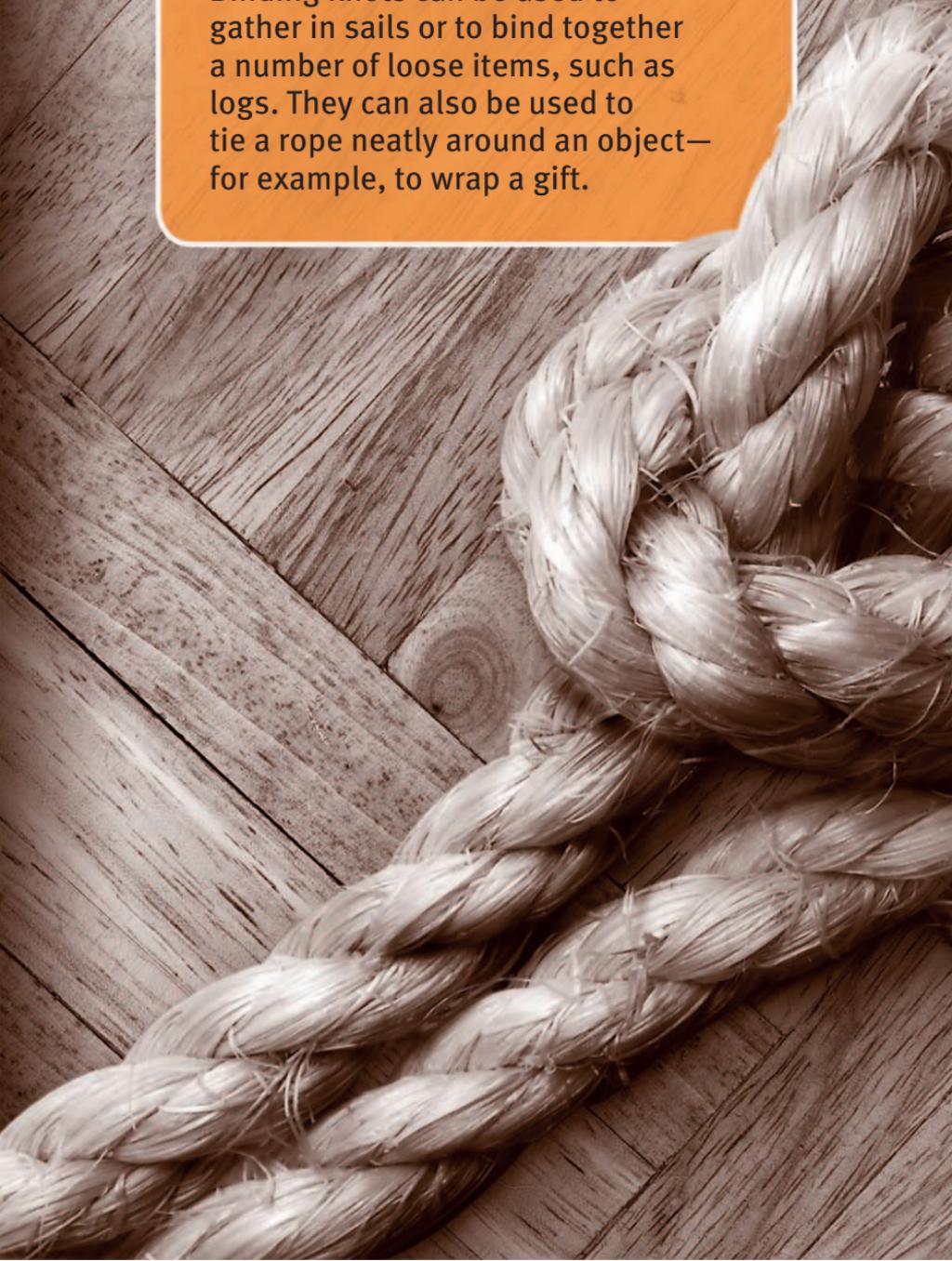


17



Binding Knots

Binding knots can be used to gather in sails or to bind together a number of loose items, such as logs. They can also be used to tie a rope neatly around an object—for example, to wrap a gift.

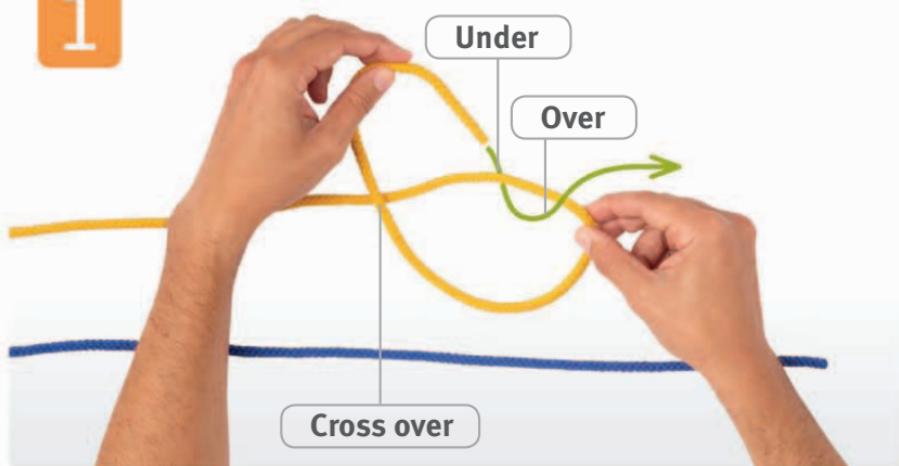
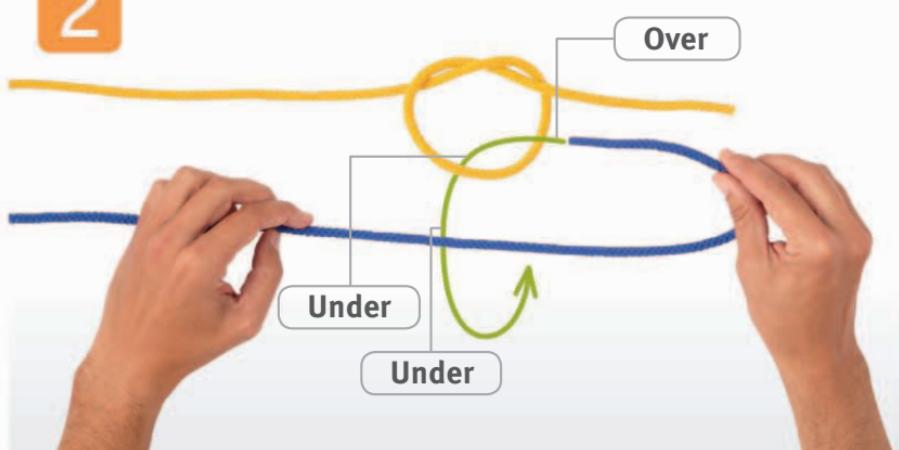




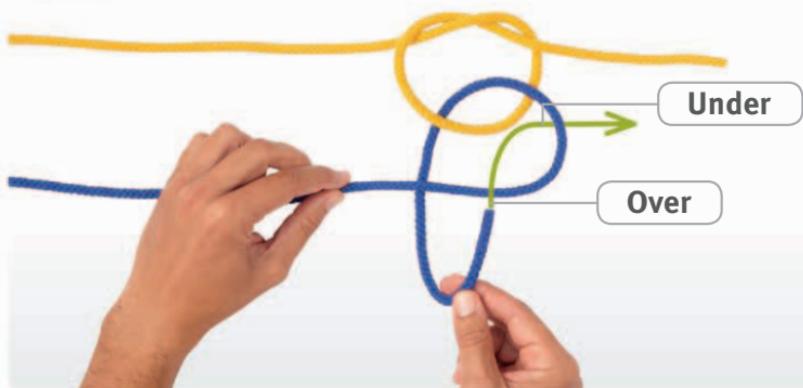


True Lover's Knot

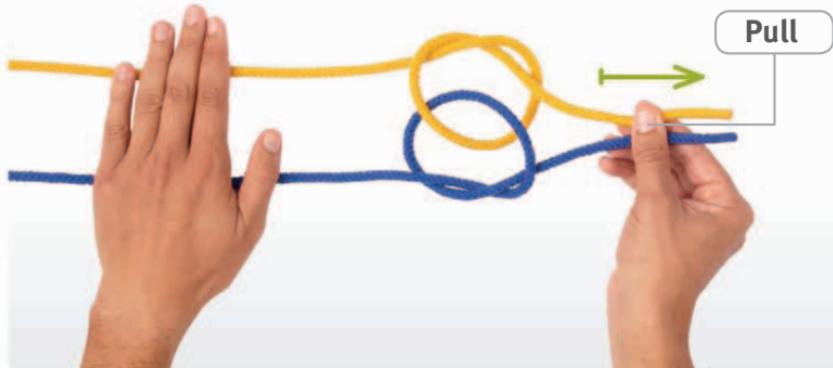
- A knot that symbolizes two people joined in love, sometimes found on a ring.
- Links two pieces of rope using interlocking Overhand Knots (*see pp.28–29*).
- The Overhand Knots should mirror each other perfectly.

**1****2**

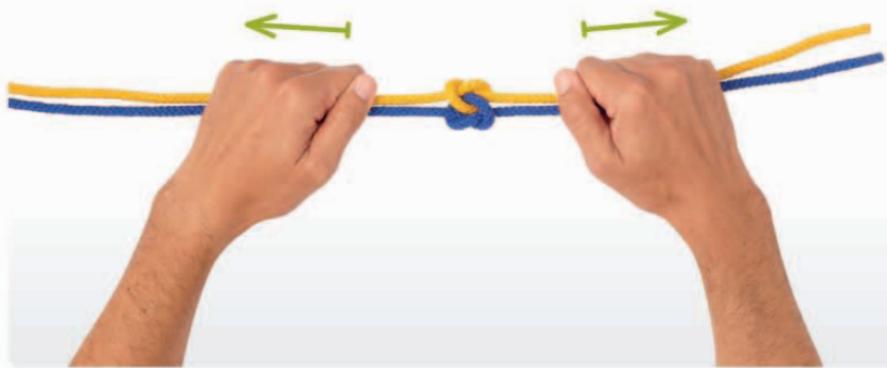
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4



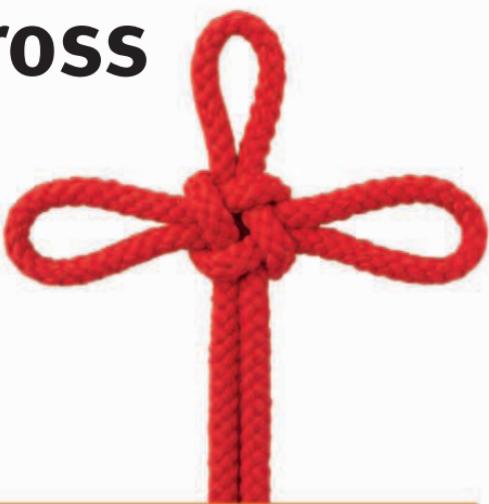
5

Tighten to finish



Sailor's Cross

- A decorative knot that symbolizes good luck.
- Developed from the True Lover's Knot (see pp.80–81).

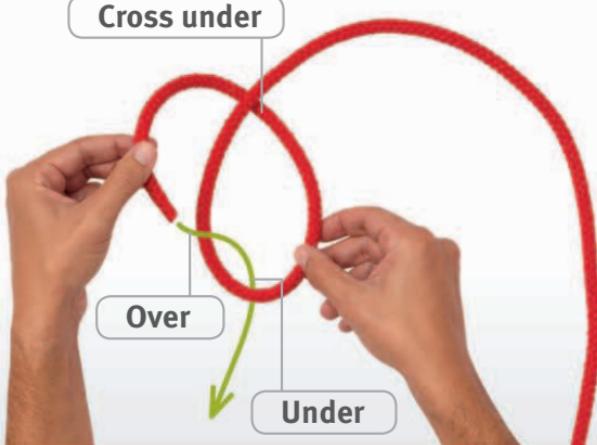


1

Cross under

Over

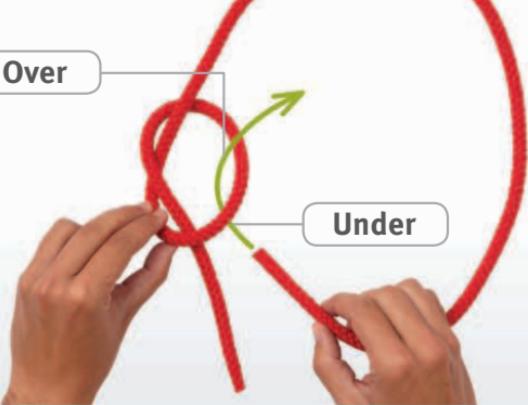
Under



2

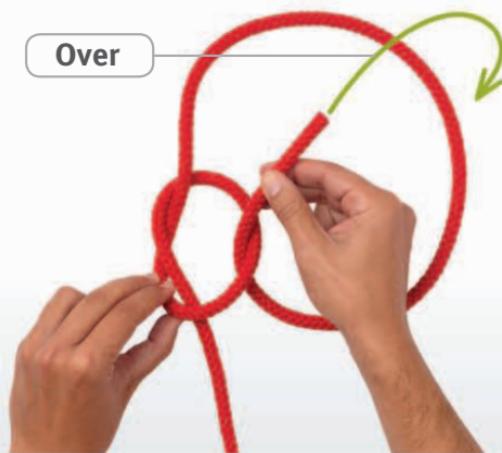
Over

Under



3

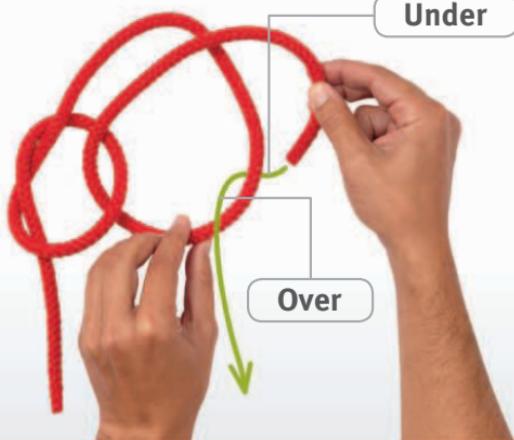
Over



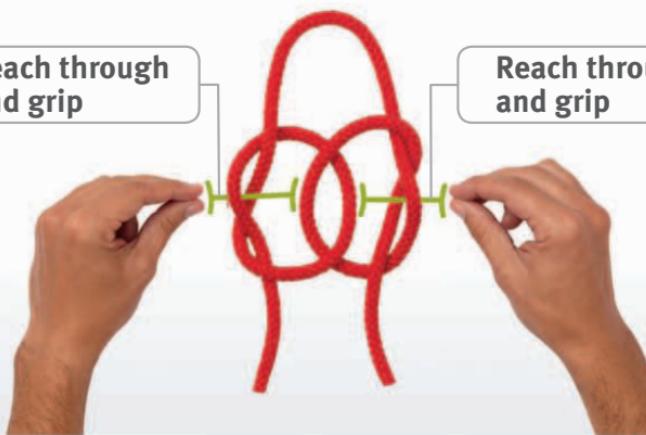
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Under

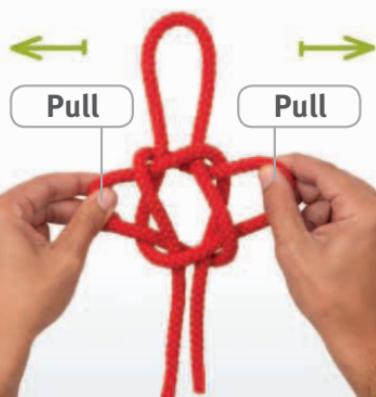
Over



5

Reach through
and gripReach through
and grip

6



7

Pull all



8

Straighten to finish





Square Knot

- A simple binding knot for securing a rope around an object.
- Also known as the Reef Knot.
- Derives that name from being tied around a bundle of sail.



1



2



3

Under

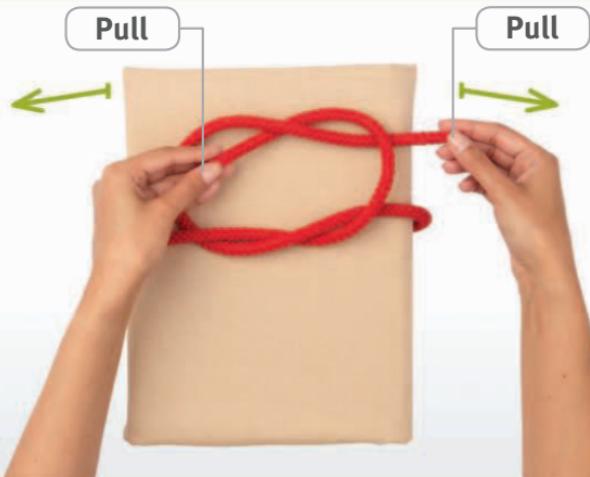
Under



4

Pull

Pull



5

Tighten to finish



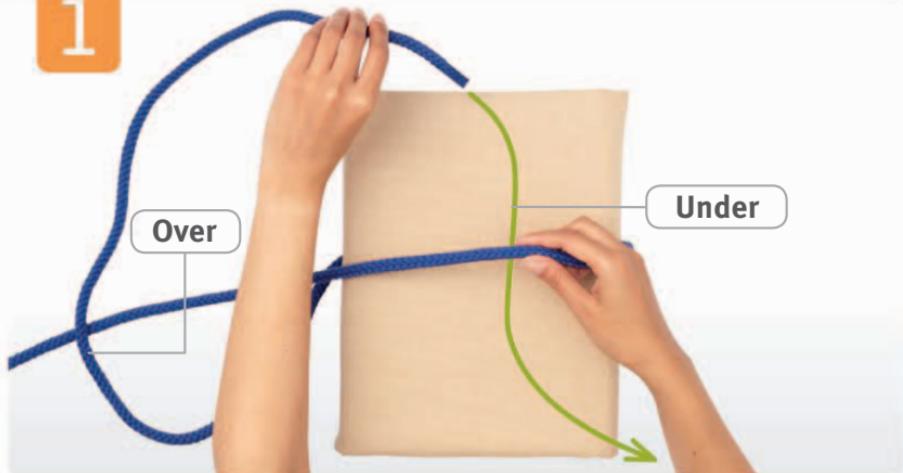


Slipped Reef Knot

- A quick-release version of the Reef Knot (see pp.85–86).
- Start with a long working end to ensure there is enough rope to form a bight.
- Can be undone by tugging on the short end of the bight.



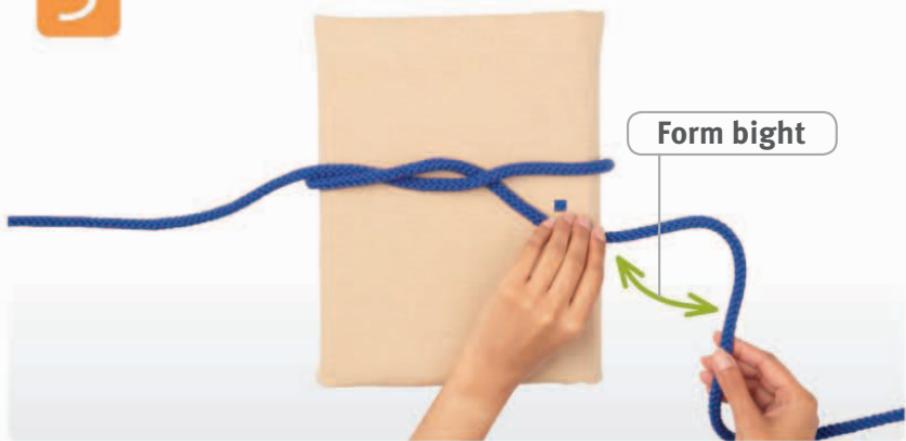
1



2



3



4



5



6

Over



7

Pull

Pull



8

Tighten to finish





Slipped Reef Knot Doubled

- Commonly used for tying shoelaces.
- Can also be tied with ribbon to make a bow around a package.
- Formed with two bights.

**1****2**

3



4



5

Tighten to finish





Granny Knot

- An incorrectly formed version of the Square Knot (see pp.85–86)—does not have the same square form.
- Not as stable as the Square Knot—may slip or jam.



1



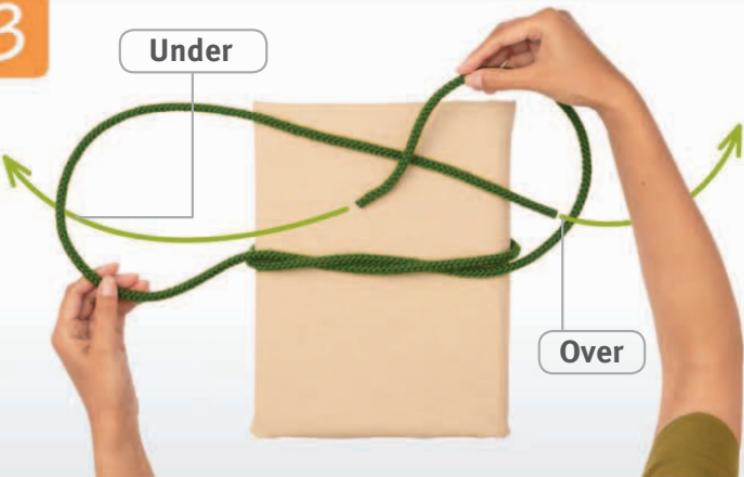
2



3

Under

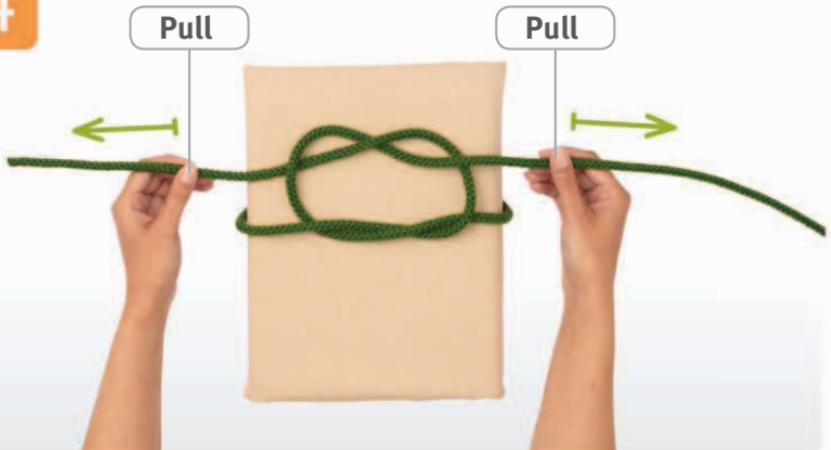
Over



4

Pull

Pull



5

Tighten to finish





Thief Knot

- An unusual binding knot used to secure a rope or line around an object.
- Easily confused with, although much less secure than, the Square Knot (see pp.85–86).
- Historically used by sailors to safeguard their bags—a thief would be likely to simply retie the bag using a Square Knot and thus betray their transgression.

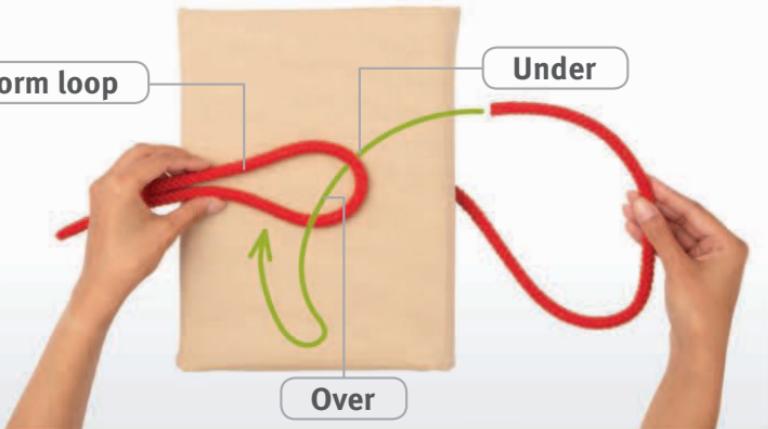


1

Form loop

Under

Over



2

Under



3

Over

Under



4

Pull

Pull



5

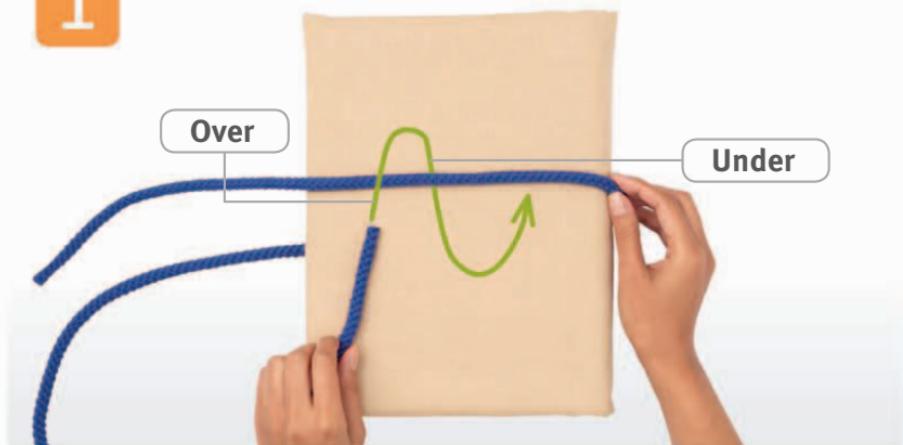
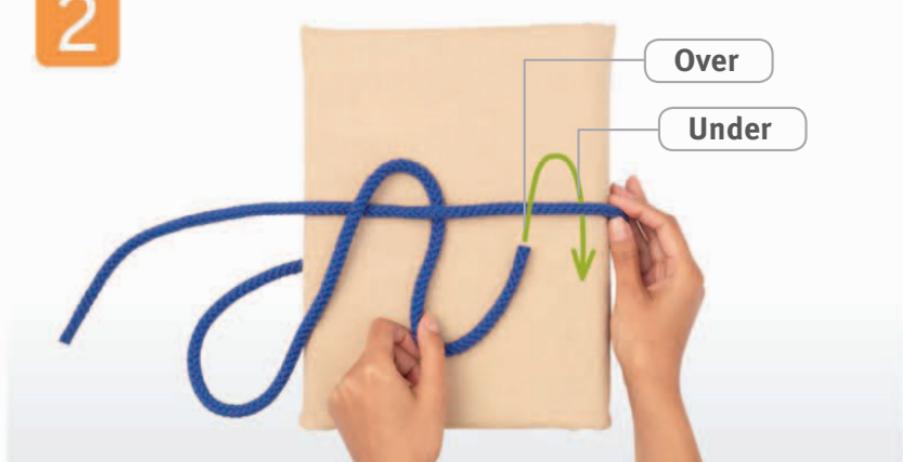
Tighten to finish





Surgeon's Knot

- A binding knot used by surgeons to tie sutures.
- Can also be tied around a bundle.
- If working with a bundle, draw it together by tightening the first two tucks before finishing the knot.
- The extra tuck holds the knot tight while the process is completed.

**1****2**

3



4



5



6

Pull

Pull

**7**

Tighten to finish



Surgeon's Knot with Second Tuck

- A surgeon's knot made with an extra tuck.
- Useful when working with slippery rope.
- Tuck the right working end twice around the left working end at Step 5 (see p.97).



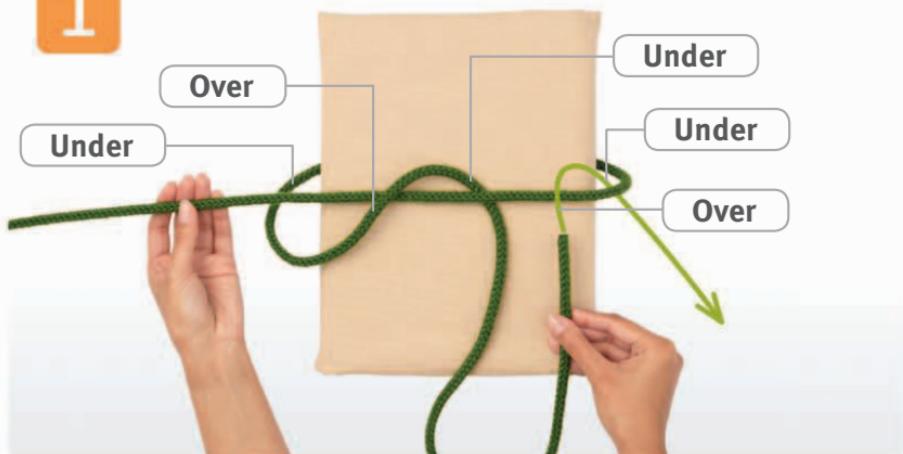


Turquoise Turtle

- The perfect knot for tying shoelaces.
- Rarely comes undone.
- Contains elements of the Square Knot (*see pp.85–86*) and the Surgeon's Knot (*see pp.96–98*).
- To undo, pull the short ends.



1

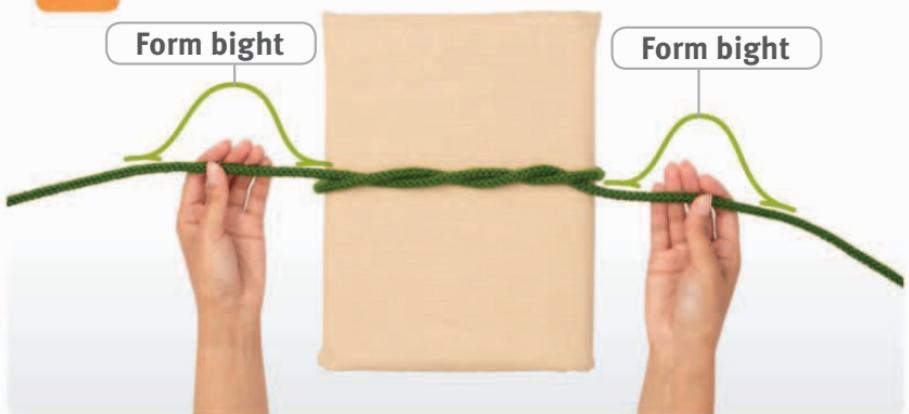


2



100 BINDING KNOTS

3



4



5



6



7



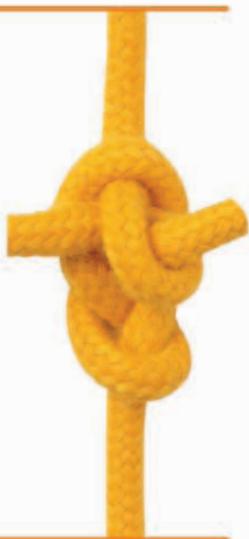
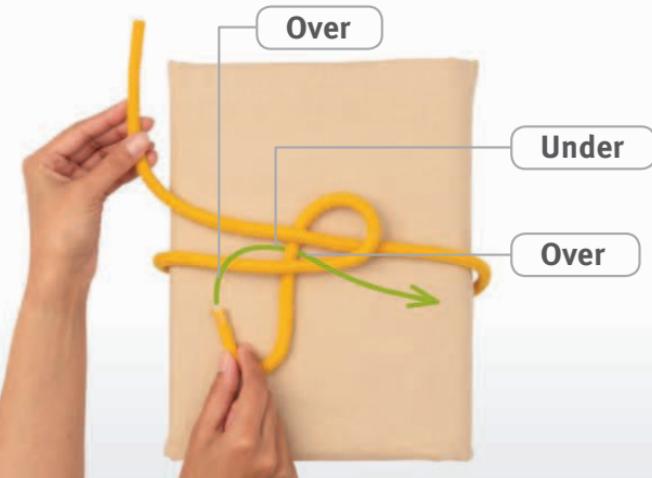
8





Packer's Knot

- Used to tie up a parcel or draw together a loose bundle or package.
- Based on the Figure-Eight (see pp.38–39).
- Secure with a half hitch (see p.23).

**1****2**

3



Transfer end
from one
hand to
the other

4



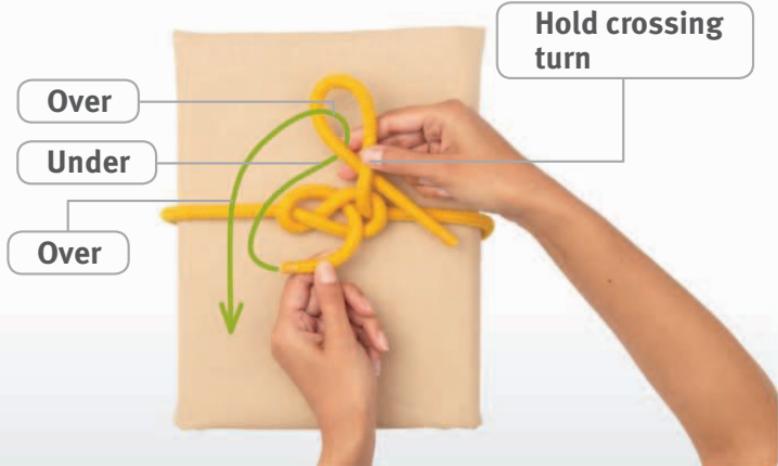
Cross under

5



Over

6



7



8

Tighten
to finish



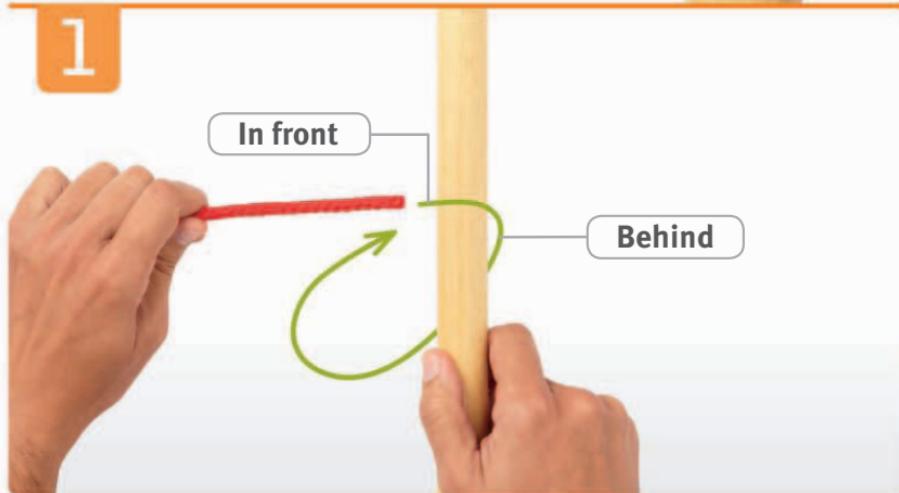


Clove Hitch

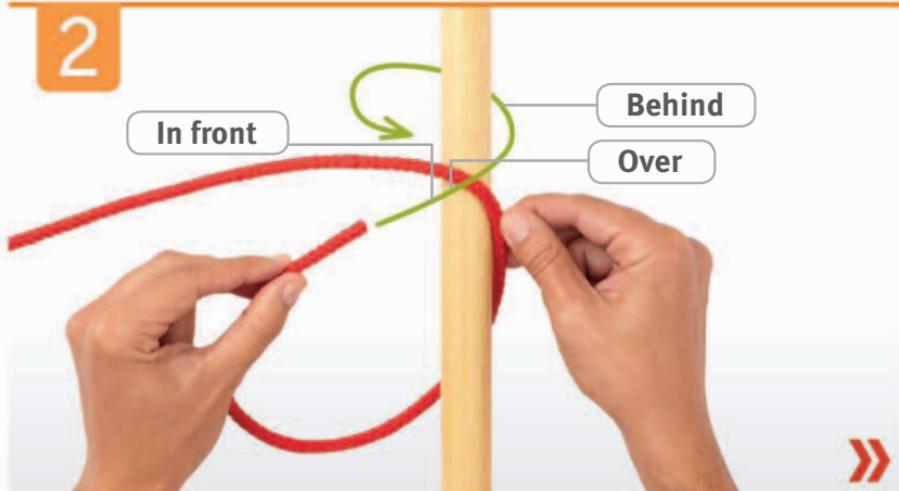
- A common, simple binding knot used when only one end of a rope is available to work with.
- Made from two half hitches (*see p.23*), both passed in the same direction.
- Used in most lashings (*see pp.211–24*).



1

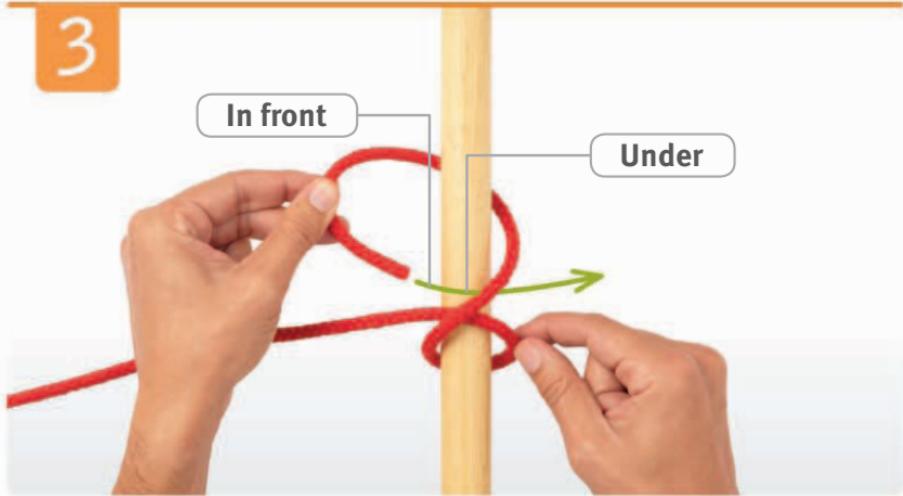


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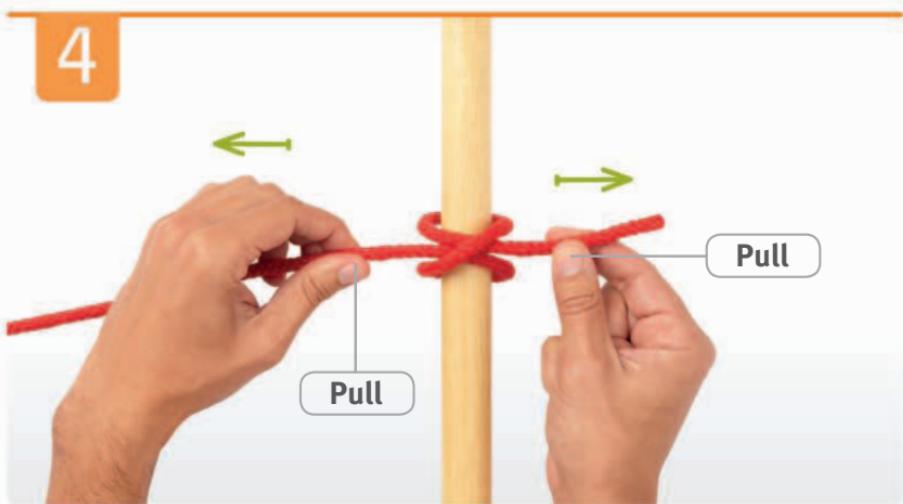


106 BINDING KNOTS

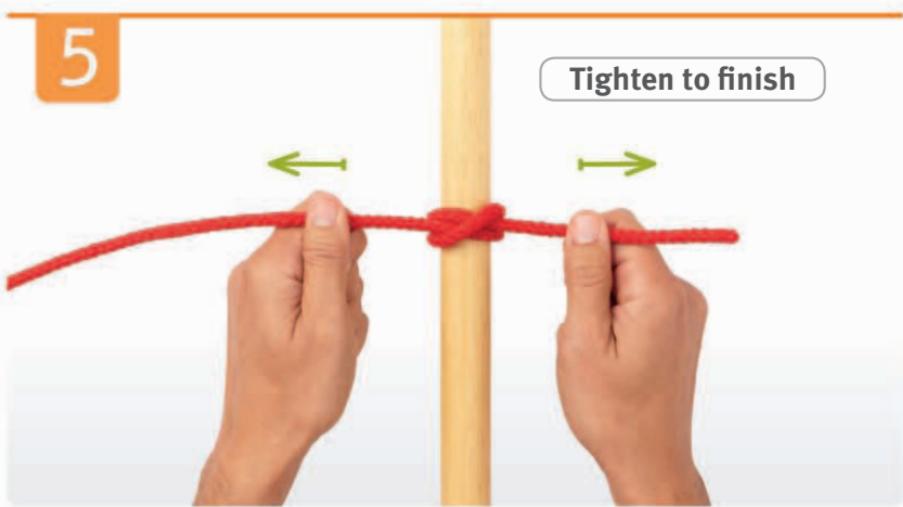
3



4



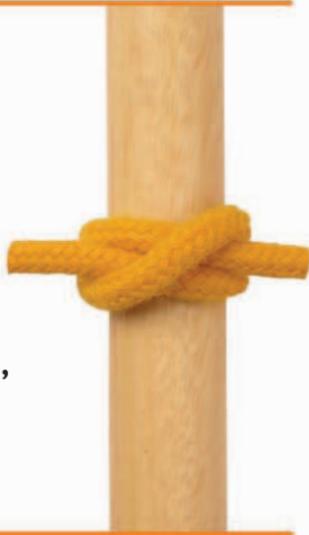
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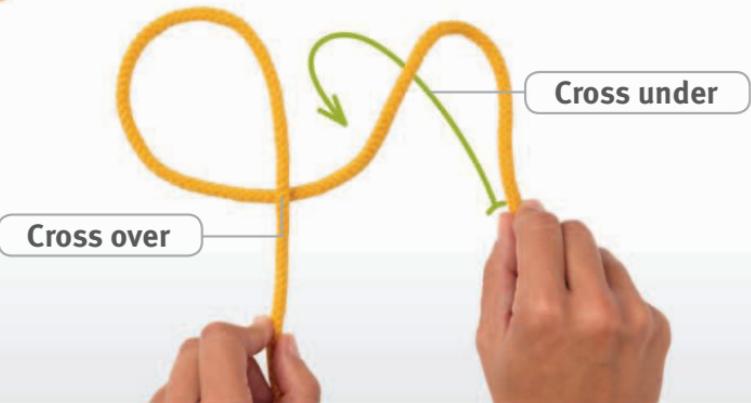


Clove Hitch—Second Method

- A common binding knot that is quick to tie.
- Can be tied in the middle of the rope.
- Made from two half hitches (see p.23), both passed in the same direction.
- Not completely secure—may work loose under strain.



1



2

Place under Place over



3

Arrange to form
hole in centre



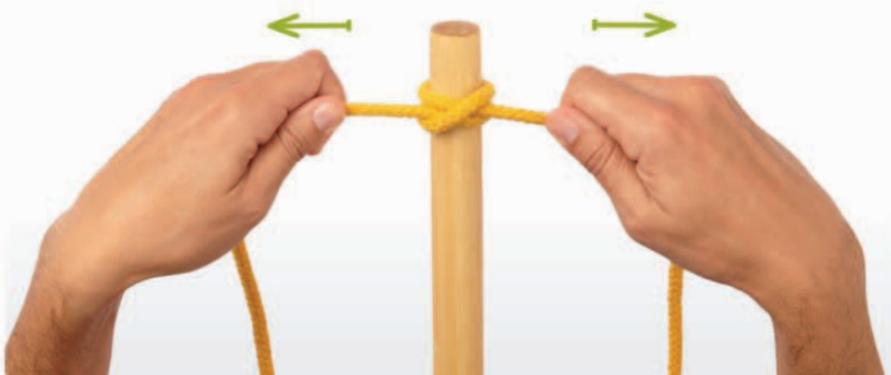
4

Lower onto pole



5

Tighten to finish



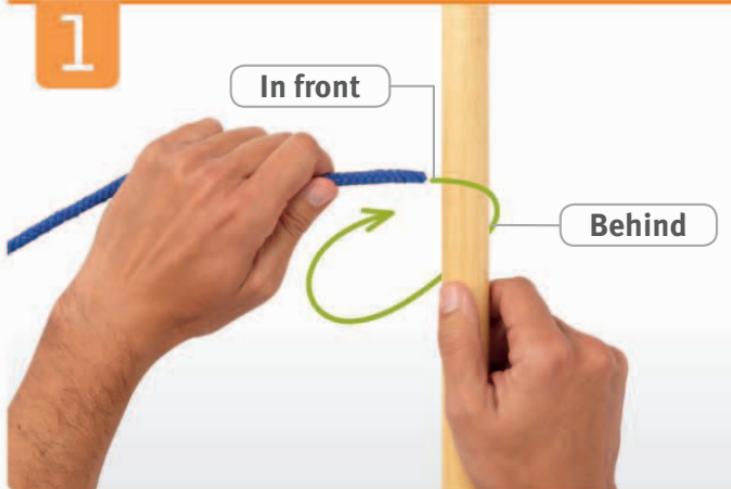


Constrictor Knot

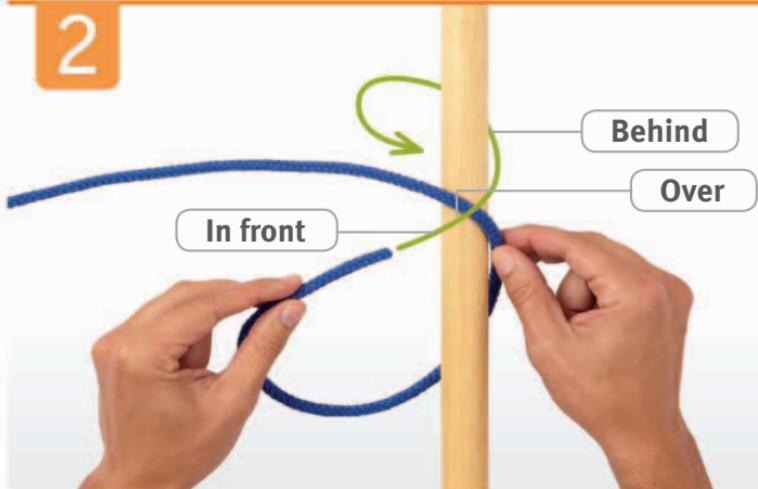
- Makes a good temporary whipping (see p.14) or seizing (see p.25).
- Simple to tie but difficult to untie.
- Works best when tied in thin line.



1

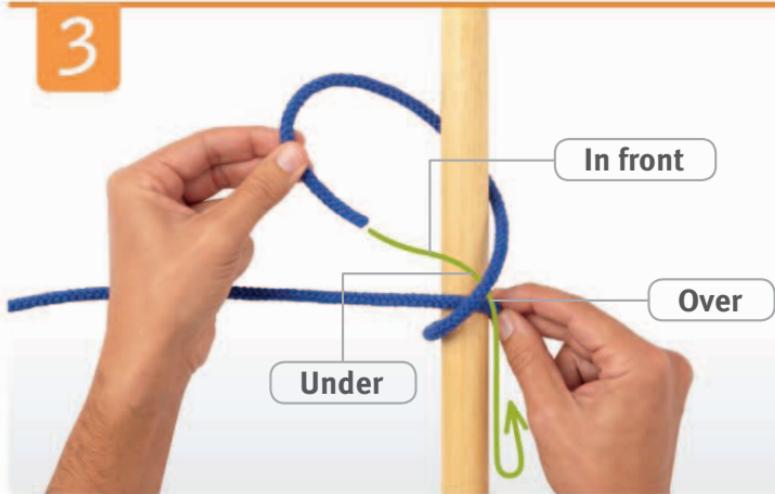


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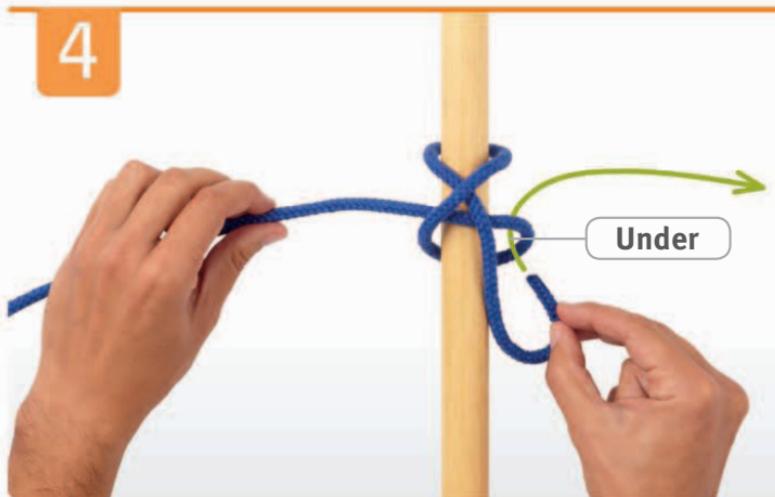


110 BINDING KNOTS

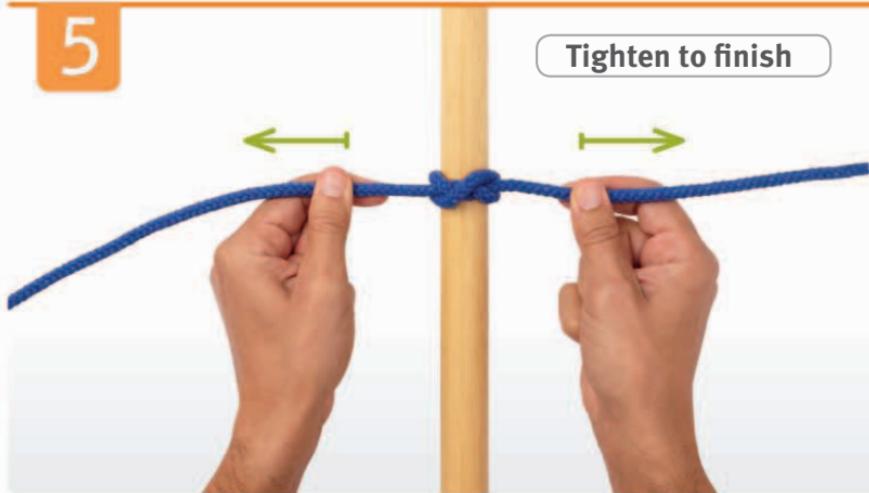
3



4



5



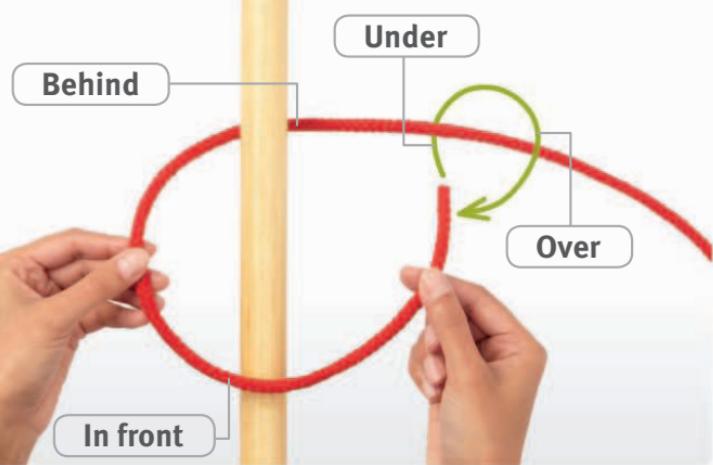


Timber Hitch

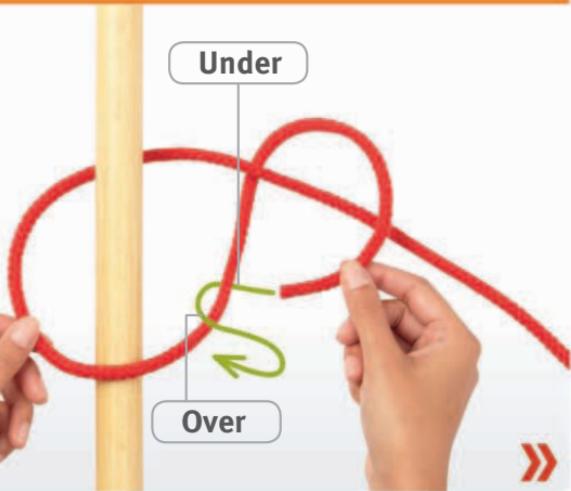
- Tied around a log or a bundle of lumber.
- The harder the final pull, the tighter and more secure the knot becomes.
- The starting point for a Diagonal Lashing (see pp.215–17).



1

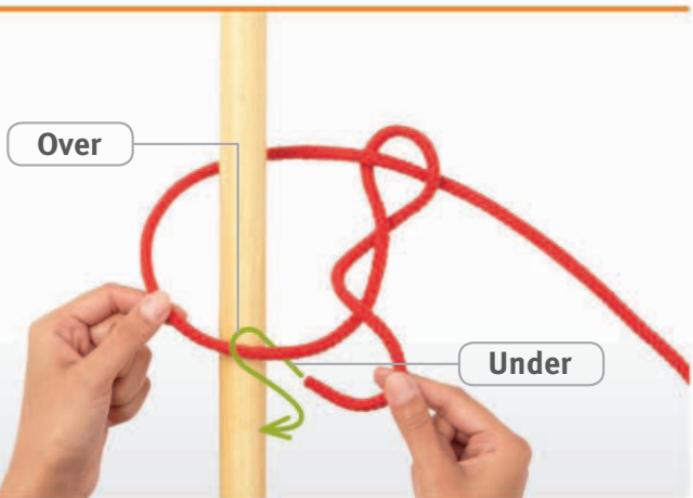


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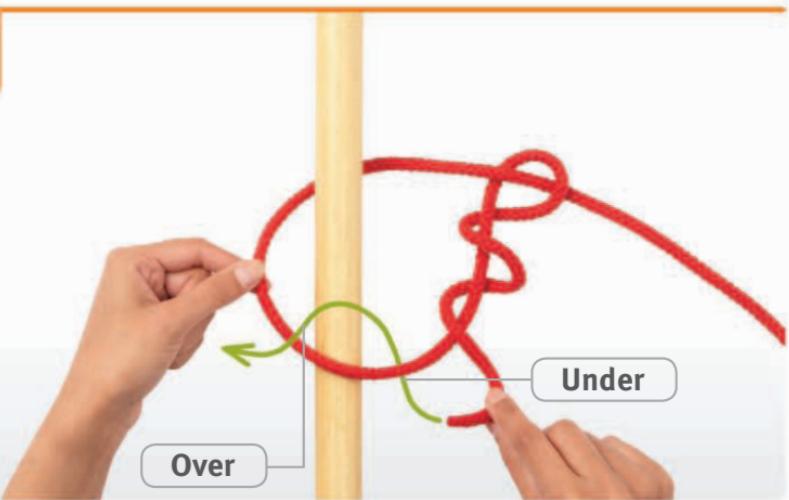


112 BINDING KNOTS

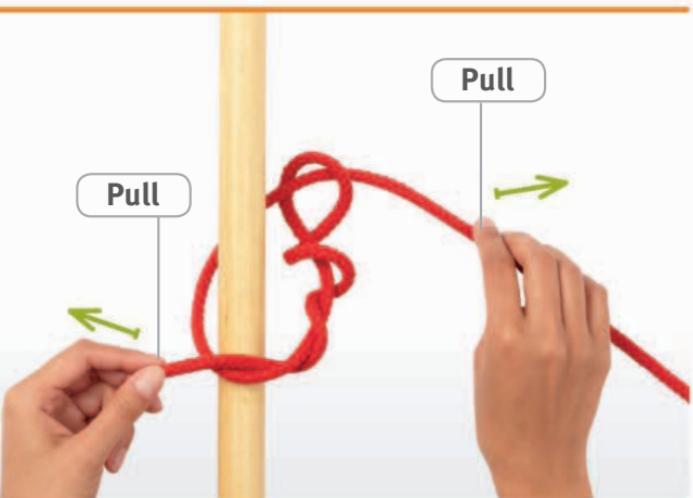
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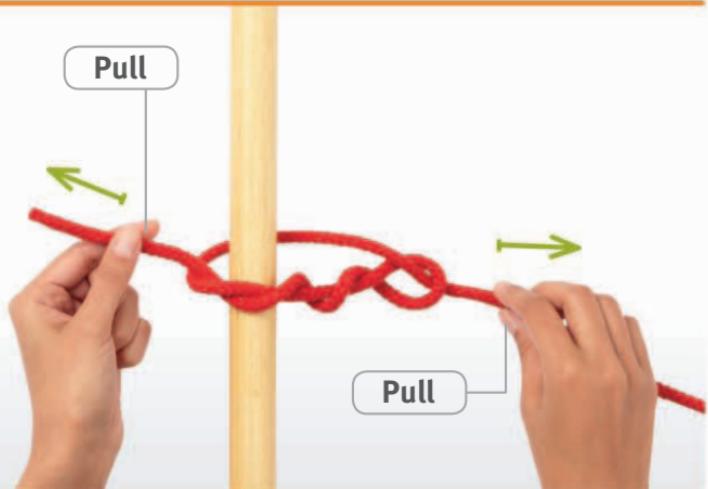
4



5



6



7



Pulling a Pole

- An extra half hitch (see p.23) can be added to the pole if it is to be dragged through water or across land.
- The half hitch prevents the pole from swaying around when it is moved.

Finish with half hitch



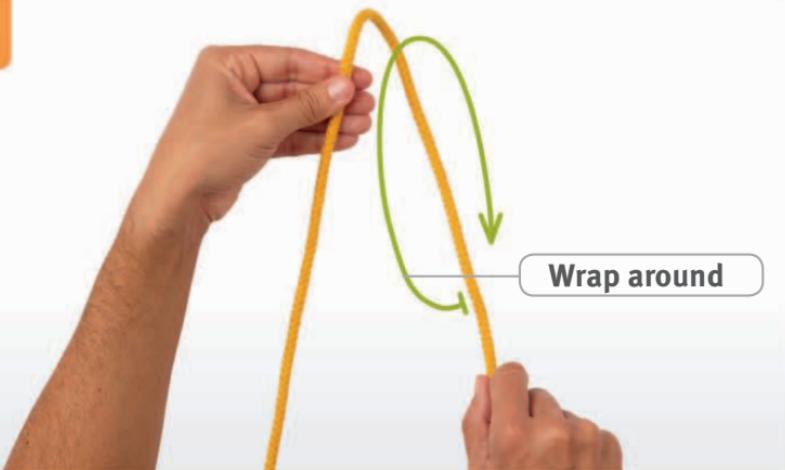


Boa Knot

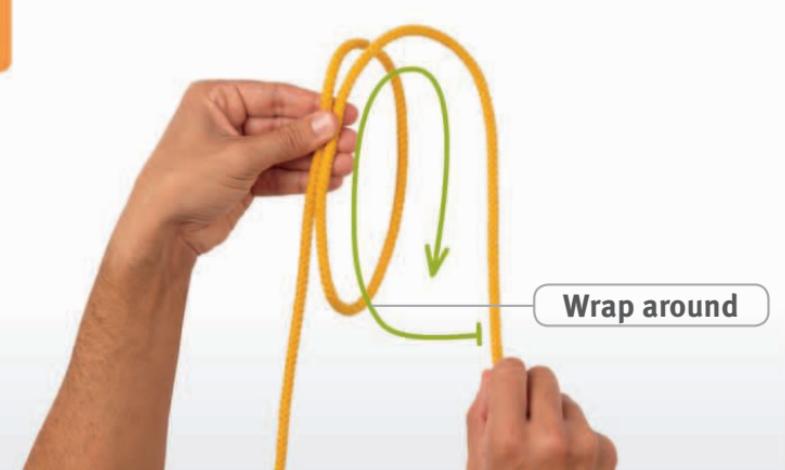
- Used to secure or tie together cylindrical objects where a decorative as well as a practical knot is required.
- Should only be used when it can be slipped over the end of the object to which it is to be tied.
- Can be used instead of the Constrictor Knot (see pp.109–10).



1



2



3

Bring coils down flat



4

Over



5

Fold over



116 BINDING KNOTS

6

Lower over pole



7

Work into shape



8

Tighten to finish





Turk's Head— Three-Lead Four-Bight

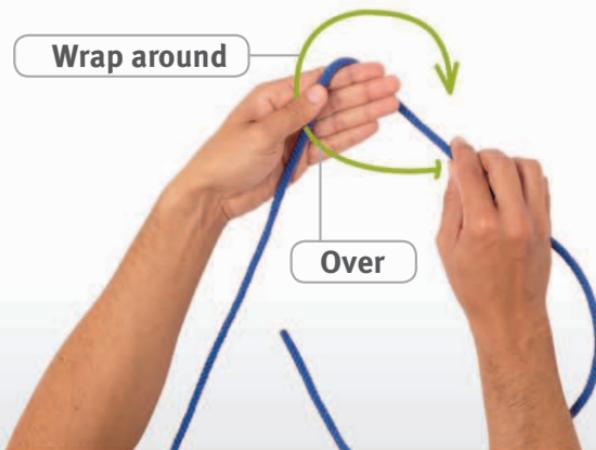
- A decorative knot usually tied around a pole or rail.
- Can also be flattened out into a mat.
- Can be doubled or tripled (see p.24).



1

Wrap around

Over

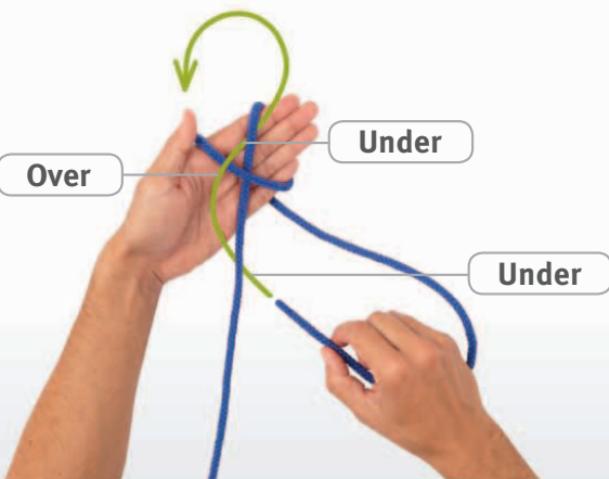


2

Over

Under

Under



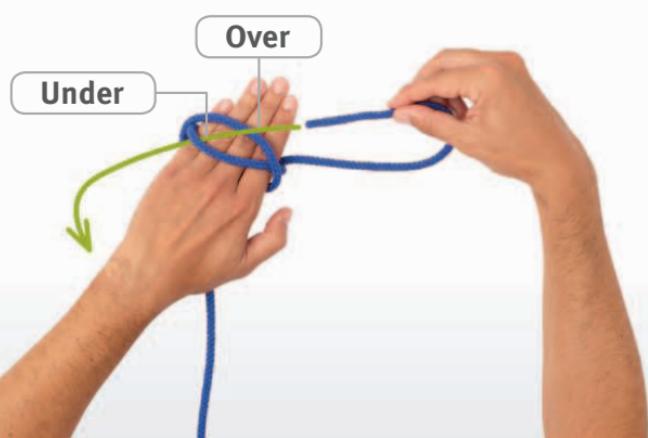
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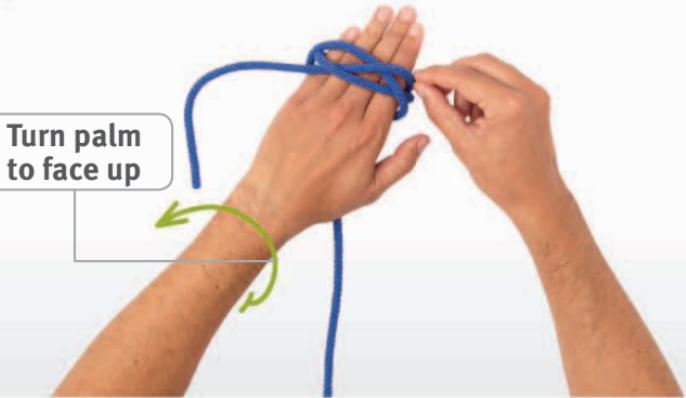
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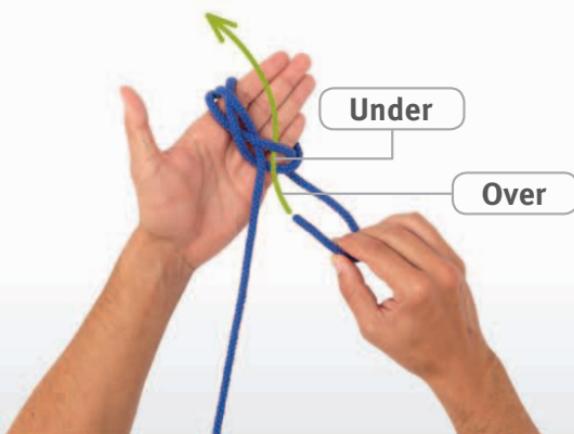
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6



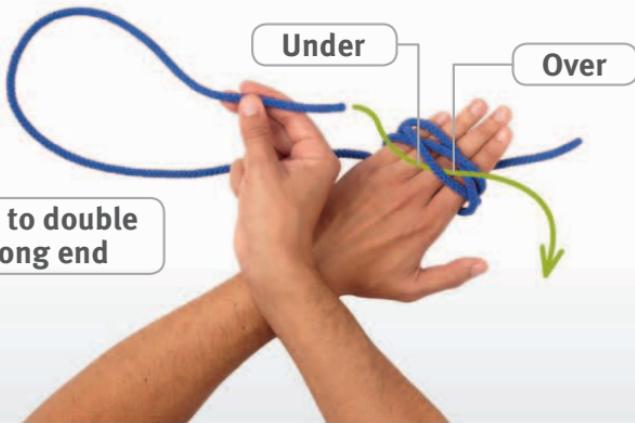
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8



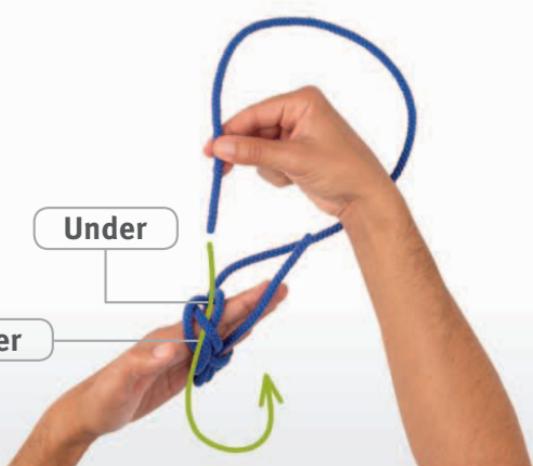
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10



11



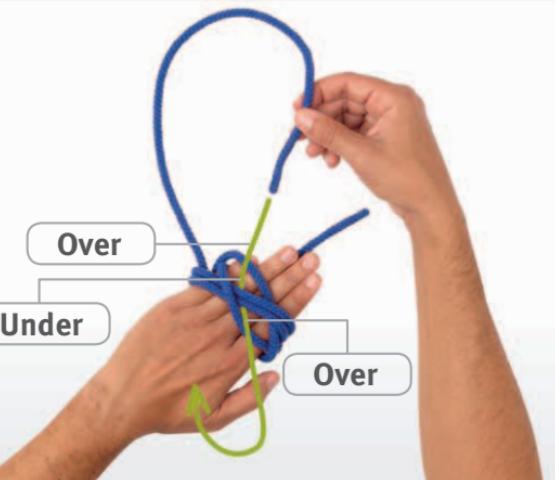
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13

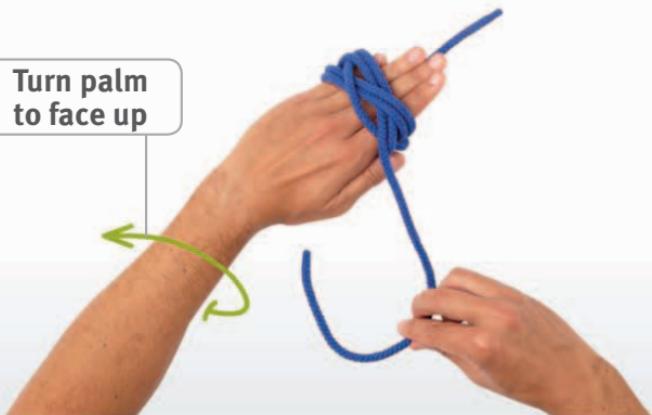


14



15

Turn palm to face up

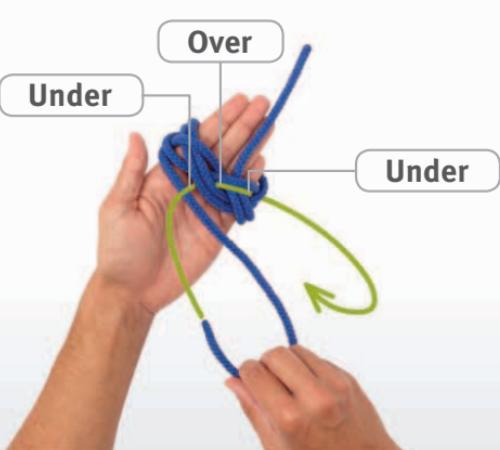


16

Under

Over

Under



17

Turn palm to face down



18

Over

Under



19

Turn palm to face up



20

Trim and tuck to finish





BEST FOR ... Household

Everyday knots can be used around the home for all kinds of tasks from hanging pictures and tying back curtains to securing a clothesline, making decorative bows, and tying shoelaces.

Round Turn and Two Half Hitches » pp.180–81

 Ideal for attaching picture cord to the hanging rings or screw eyes on the back of picture frames.

 Also useful for tying a line to a fixed object, such as a clothesline to its pole.

 Can be untied even when under strain.



Similar knots:
» pp.182–83
Buntline Hitch
» pp.184–85
Fisherman's Bend

Manrope Knot » pp.61–71

 A perfect knot for tying back curtains when threaded through an Eye Splice (see pp.342–46).

 Can also make an end for a rope handrail.

 Can be made bulkier by following the pattern around for a third time.



Similar knots:
» pp.49–53
Monkey's Fist
» pp.72–77
Diamond Knot

Turquoise Turtle

» pp.99–101

- ✓ A two-loop knot that is quick to tie.
- ✓ Perfect for tying up the laces on shoes or boots as it rarely comes undone.
- ✓ Can be used to make a secure yet decorative bow on a parcel or a present.



Similar knots:
» pp.87–89
Slipped Reef Knot

Constrictor Knot

» pp.109–10

- ✓ A perfect replacement for a hose clip.
- ✓ Can also be used with stiff cord to tie up the neck of a bin bag or sack.
- ✓ Binds tightly, making it very hard to untie.



Similar knots:
» pp.107–08
Clove Hitch – Second Method
» pp.114–16
Boa Knot

Packer's Knot » pp.102–04

- ✓ A binding knot that is perfect for tying up a parcel, as it is easy to pull tight and lock into position.
- ✓ The knot's tightening feature is good for baling up bundles of newspaper.
- ✓ Also known as a Butcher's Knot, as it can be used to prepare joints of meat for roasting.



Similar knots:
» pp.87–89
Slipped Reef Knot
» pp.96–98
Surgeon's Knot

Waggoner's Hitch

» pp.203–04

 Perfect for tying down a load such as a pile of logs. It will undo as soon as the strain is released.

 Will also secure a roof box to the top of a car.

 If repeatedly tied in the same place this knot can cause the rope to chafe severely.



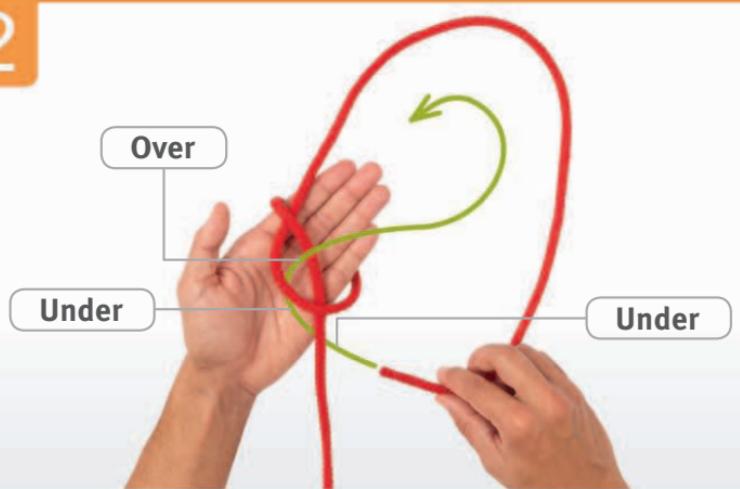
Similar knots:
» pp.111–13
Timber hitch



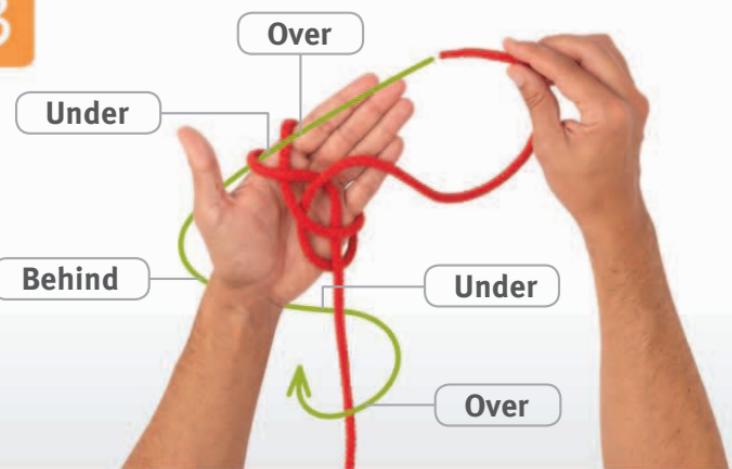


Turk's Head—Four-Lead Five-Bight

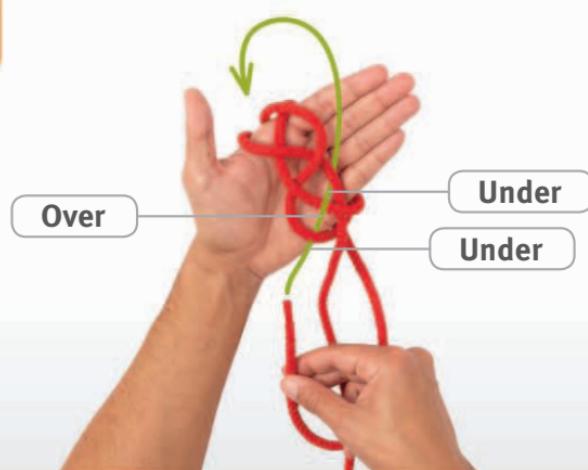
- Used mainly for decorative purposes.
- Essentially a continuous Four-Strand Flat Braid (see pp. 294–95)—can be followed around two, three, or four times.
- Adjust the spaces between the strands as you tie to ensure that they are even.

**1****2**

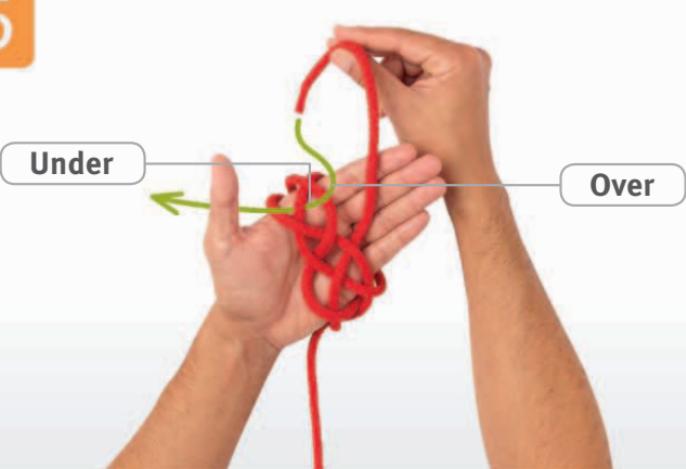
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4



5

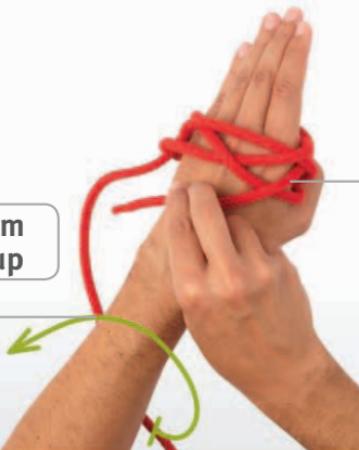


130 BINDING KNOTS

6



7



8



9



Turn palm to
face down

10



Begin to double

Over

Under

11

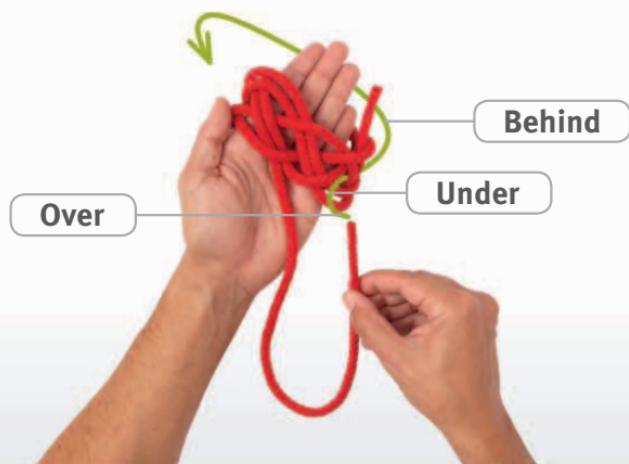


Turn palm
to face up

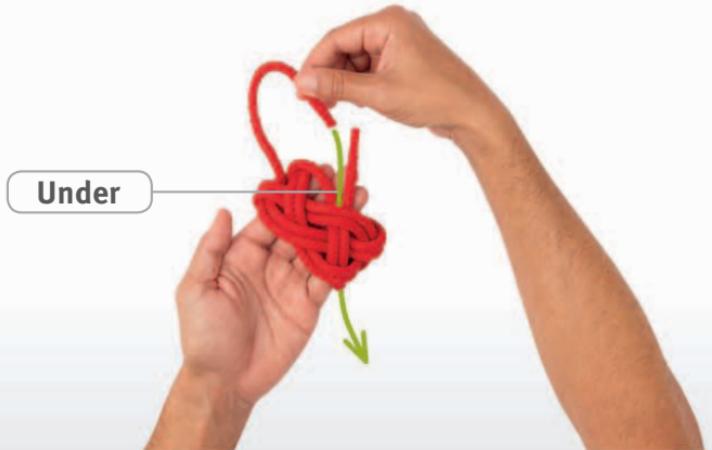


132 BINDING KNOTS

12



13



14

Trim and tuck to finish





Turk's Head—Five-Lead Four-Bight

- A highly decorative knot with a large number of interwoven strands.
- Can be doubled or tripled (see p.24).
- Finish by tightening carefully then trimming and tucking the ends inside the knot.

**1**

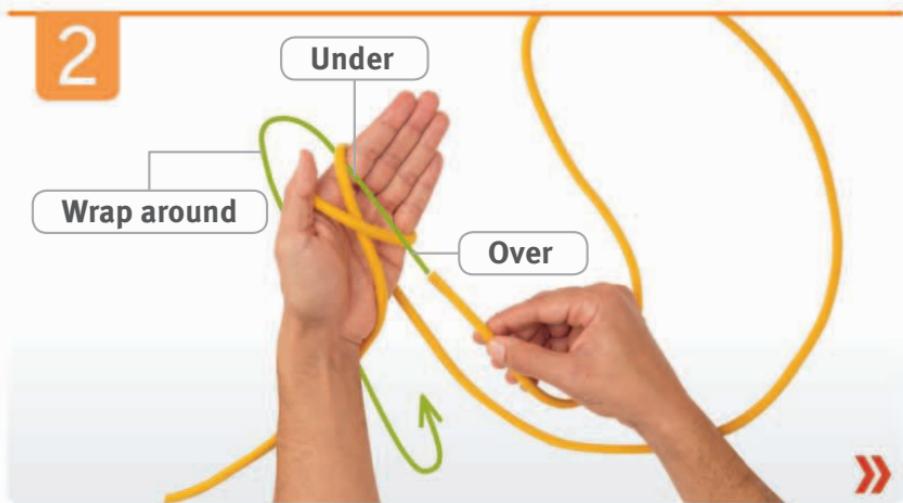
Wrap around

**2**

Under

Wrap around

Over



134 BINDING KNOTS

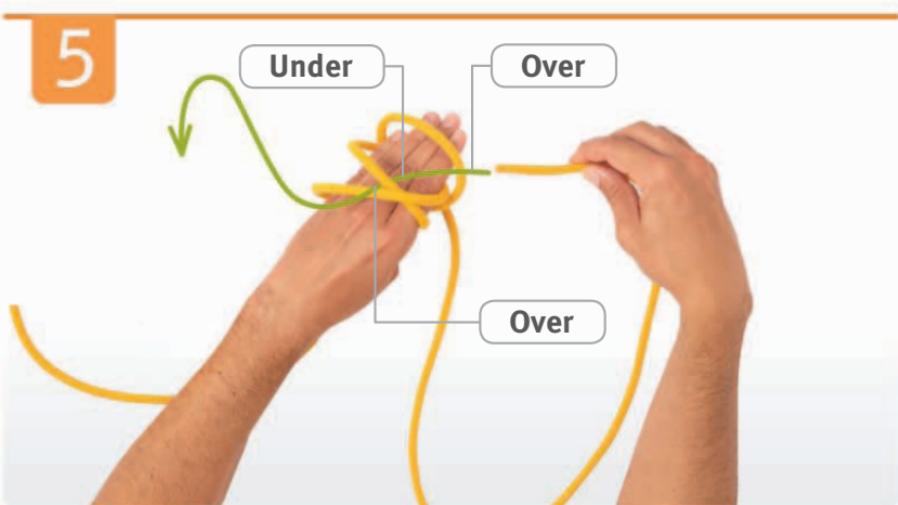
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4



5

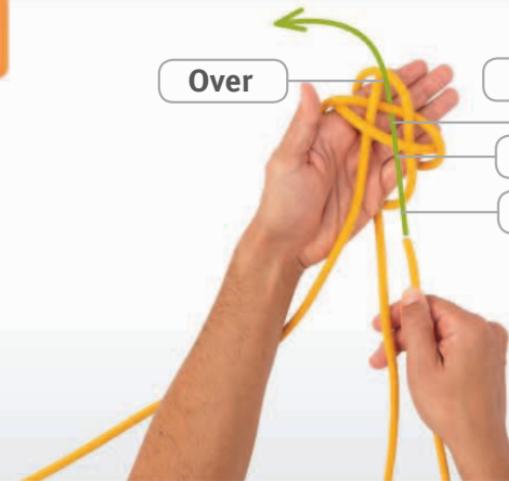


6



Turn palm
to face up

7



Under

Over

Over

8

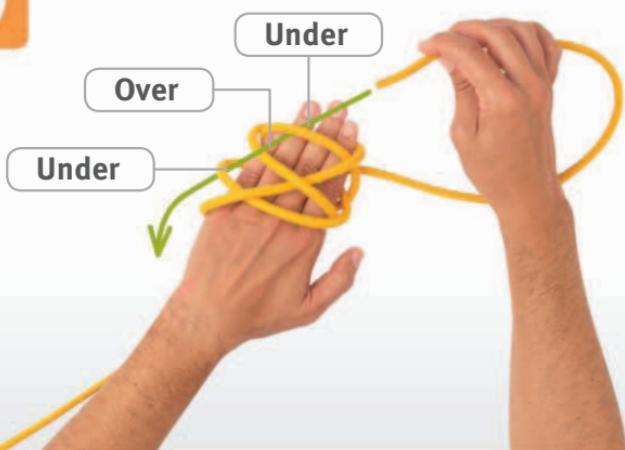


Turn palm to
face down



136 BINDING KNOTS

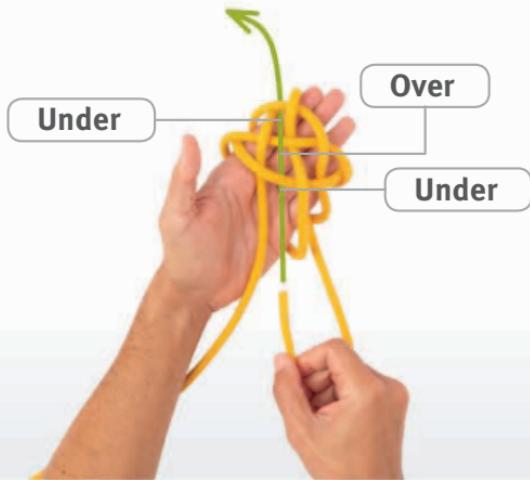
9



10



11



12

Begin to double
with long end

Turn palm to
face down



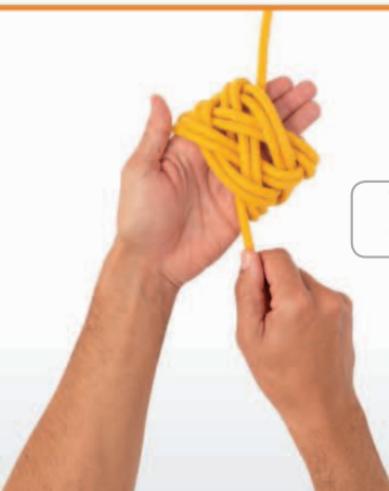
13

Follow pattern
as required



14

Trim and tuck
to finish



Bends

A bend is used to connect two pieces of rope or line together. Most bends are designed to tie together two ropes of equal diameter, but there are also bends that have been developed for ropes of different thicknesses.

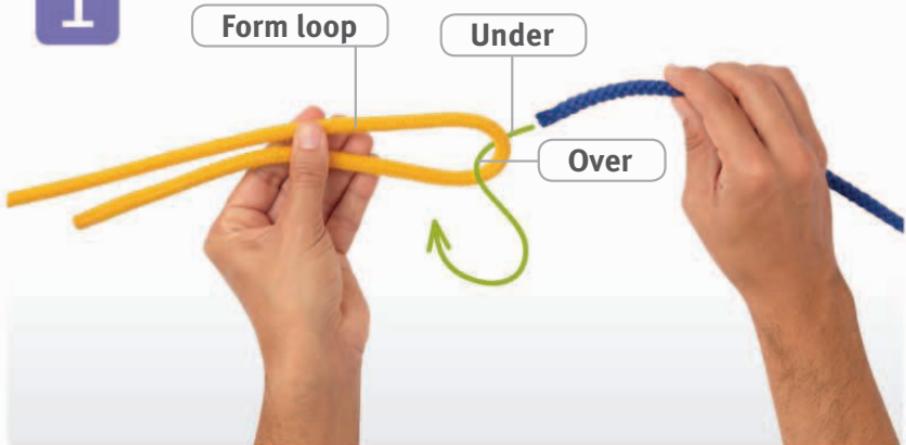
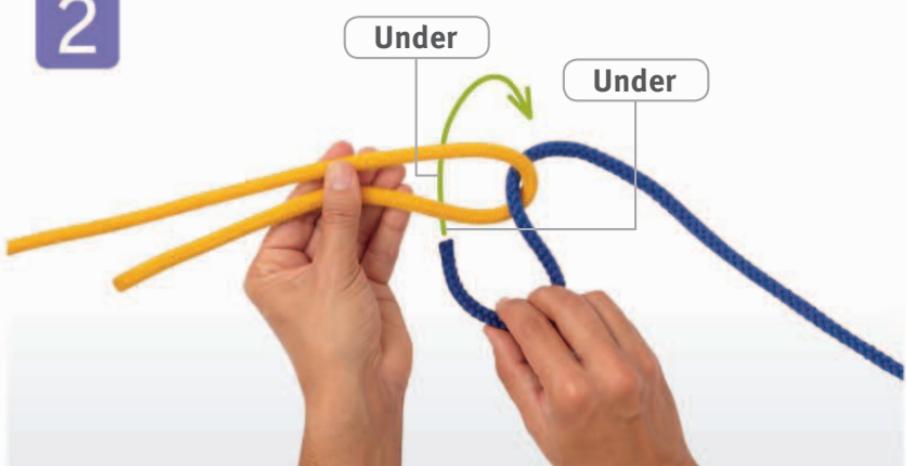




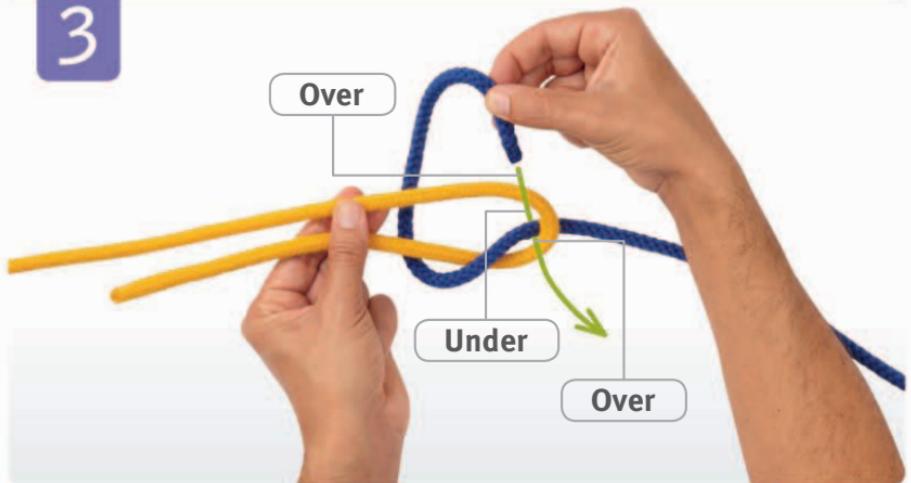


Sheet Bend

- A common knot for joining two ropes of equal thickness.
- Quick and easy to tie.
- May work loose when not under strain.
- If joining ropes of unequal size, use the Double Sheet Bend (see pp.144–45).

**1****2**

3

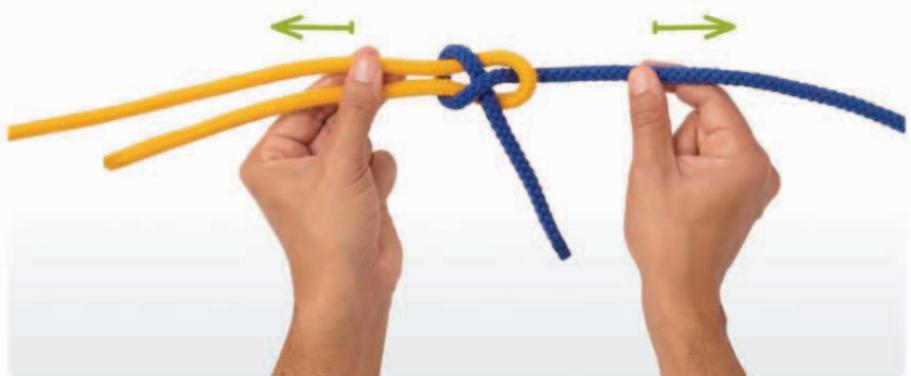


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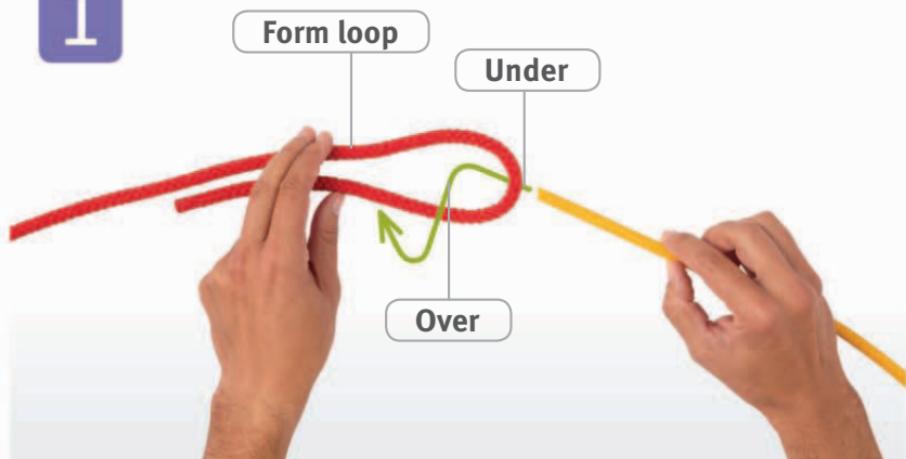
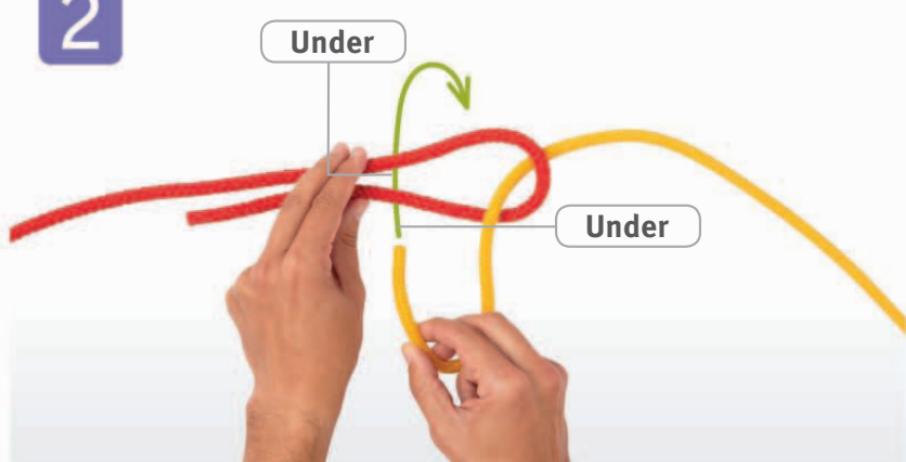
Tighten to finish



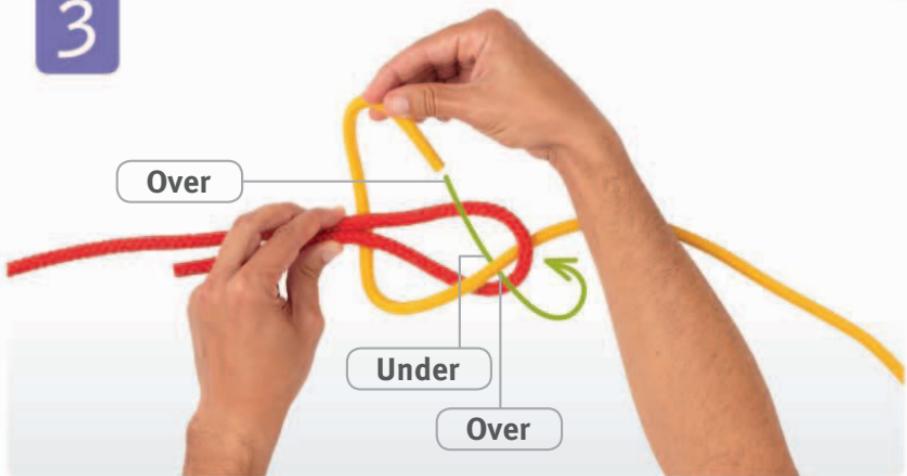


Tucked Sheet Bend

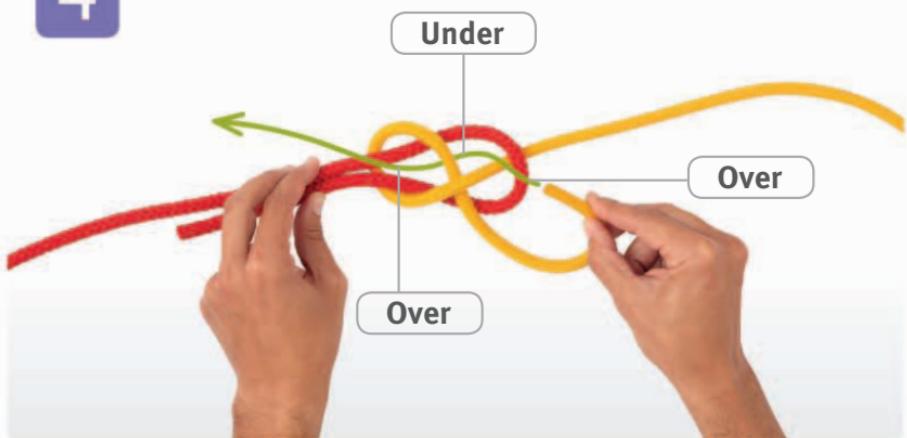
- Used for joining two pieces of thin line.
- A variation of the Sheet Bend (see pp.140–41) that incorporates a Figure-Eight (see pp.38–39) structure.
- Tuck ends against rope to prevent snagging when pulled along.
- Will snag if pulled in the wrong direction.

**1****2**

3



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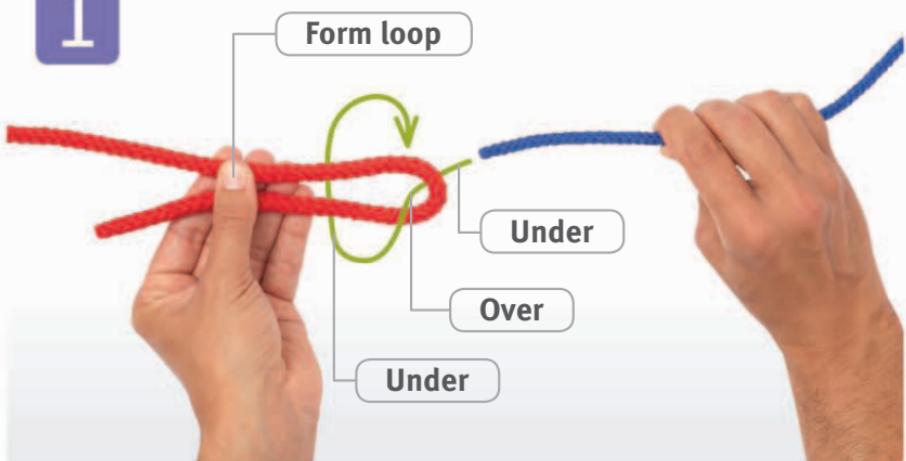
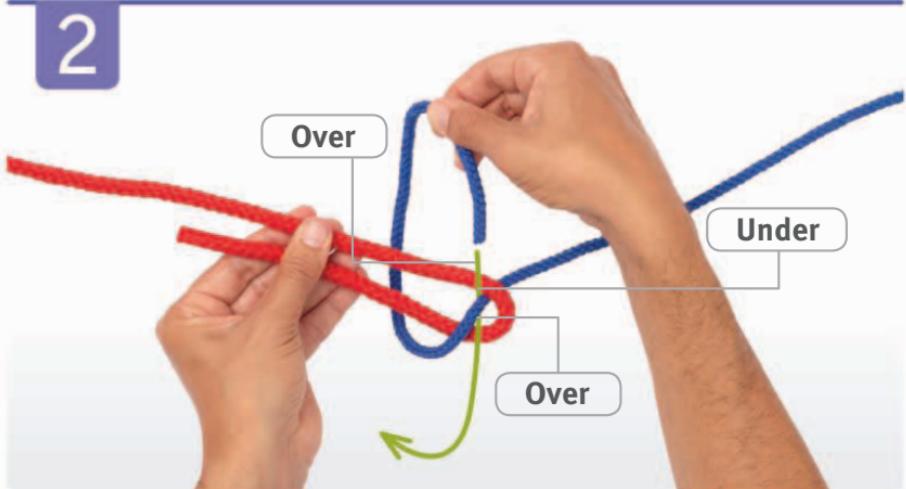
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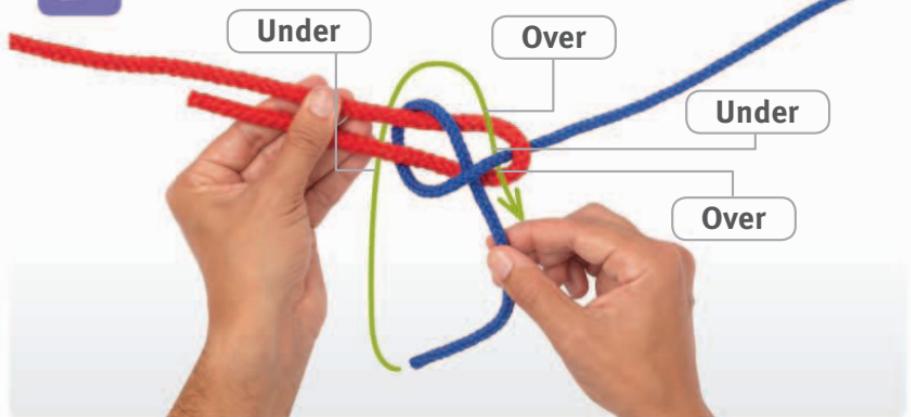


Double Sheet Bend

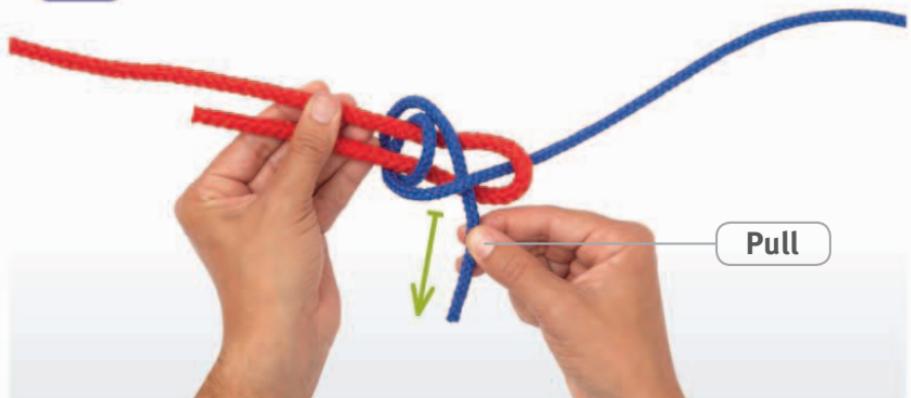
- Used to join two ropes of unequal thickness.
- Use the thicker rope to form the loop.

**1****Form loop****2****Over****Under****Over**

3



4



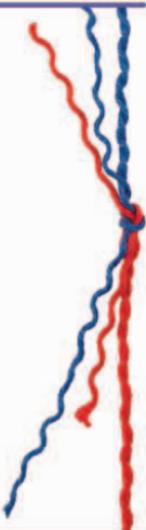
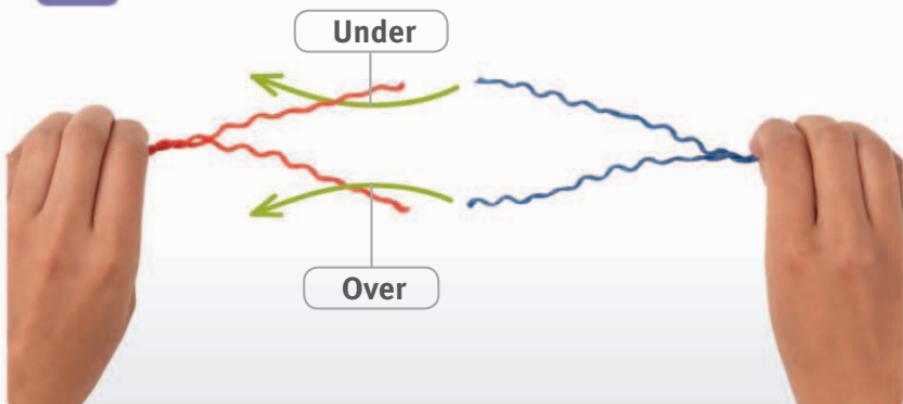
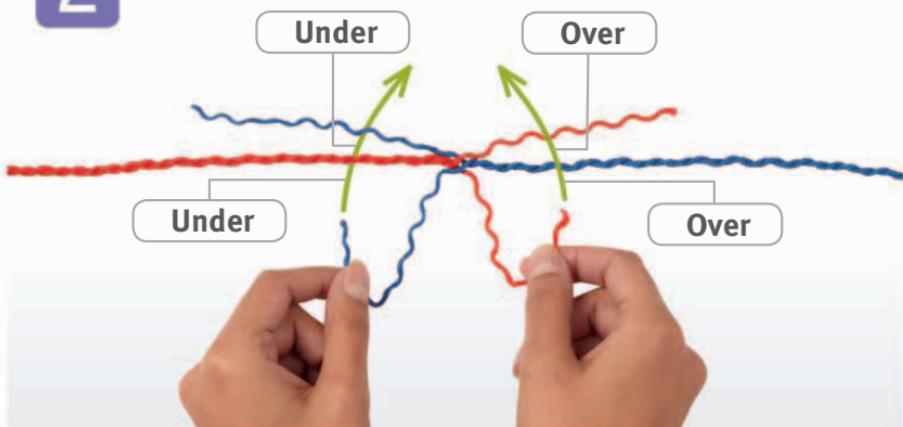
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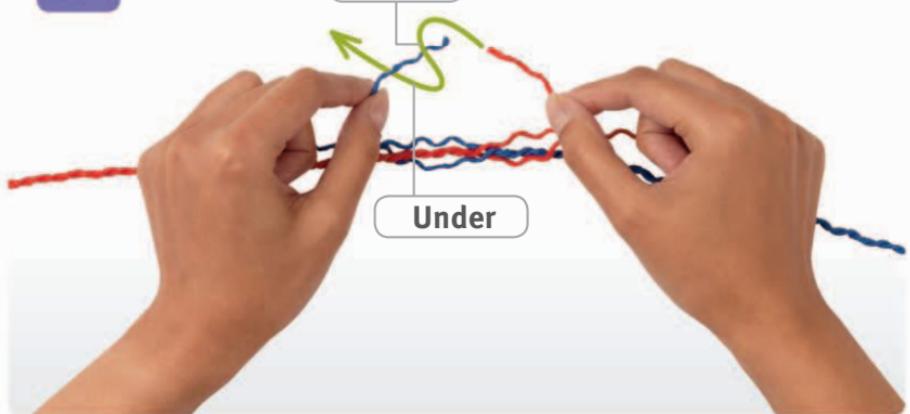


Rope Yarn Knot

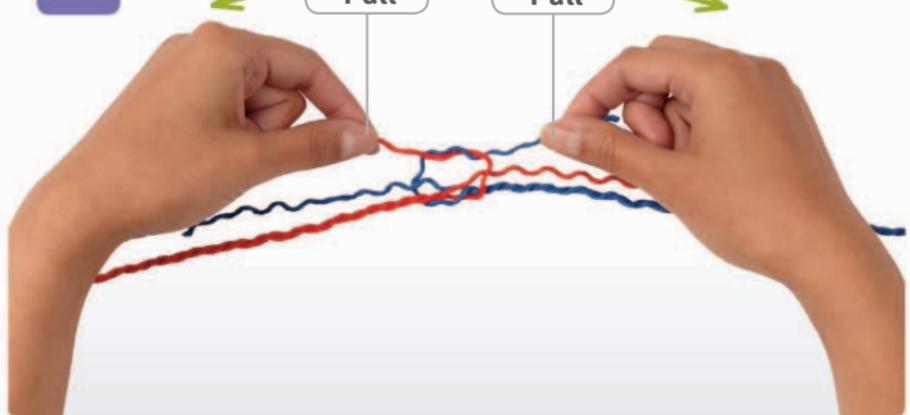
- Used for tying together rope yarns to make a new piece of rope.
- Can also be used to join textile materials together.
- Similar in structure to the Square Knot (see pp.85–86) but less bulky.

**1****2**

3



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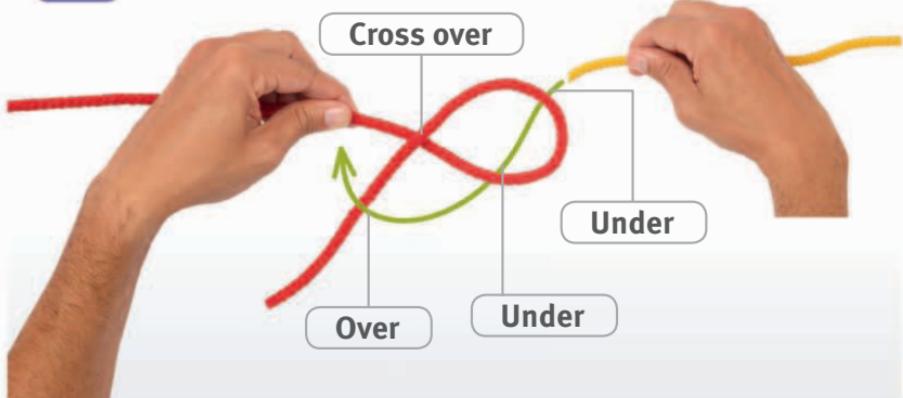
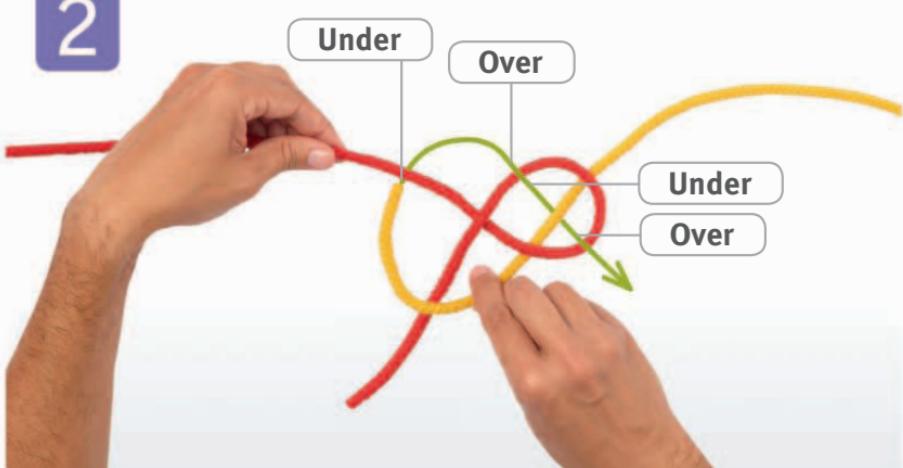
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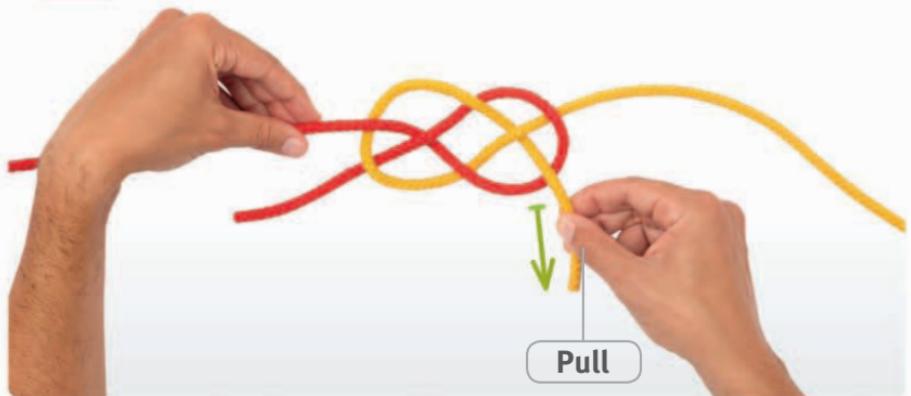


Carrick Bend

- Good for joining two thick ropes or cables.
- Can be seized (see p.25) as a flat knot, or tightened to collapse on itself.
- Easy to untie.

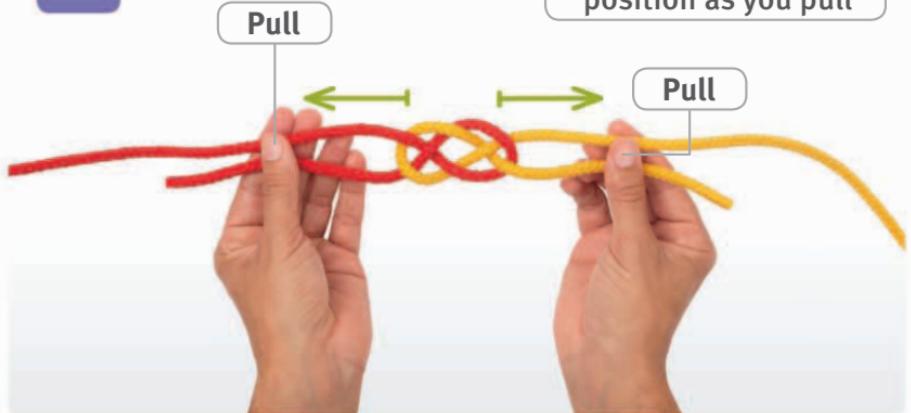
**1****2**

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Short ends swap position as you pull



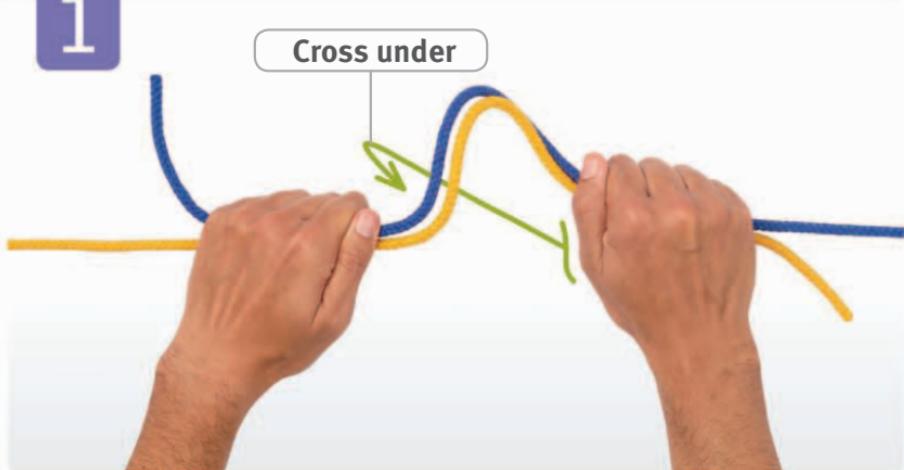
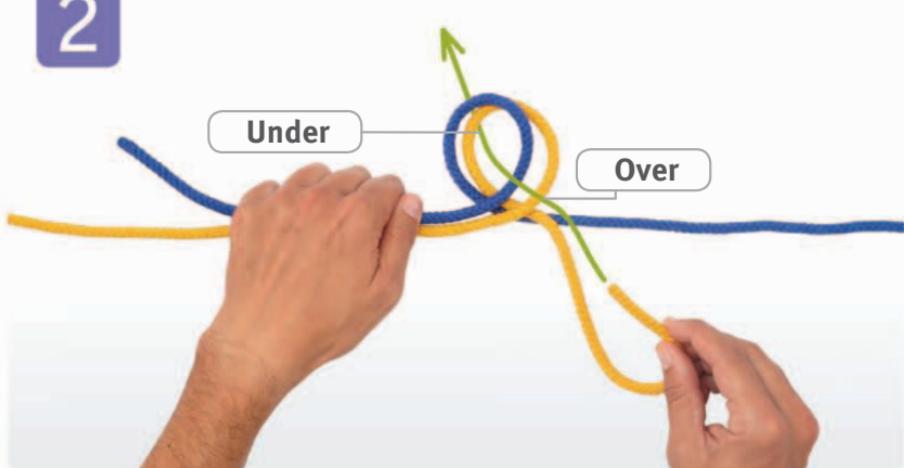
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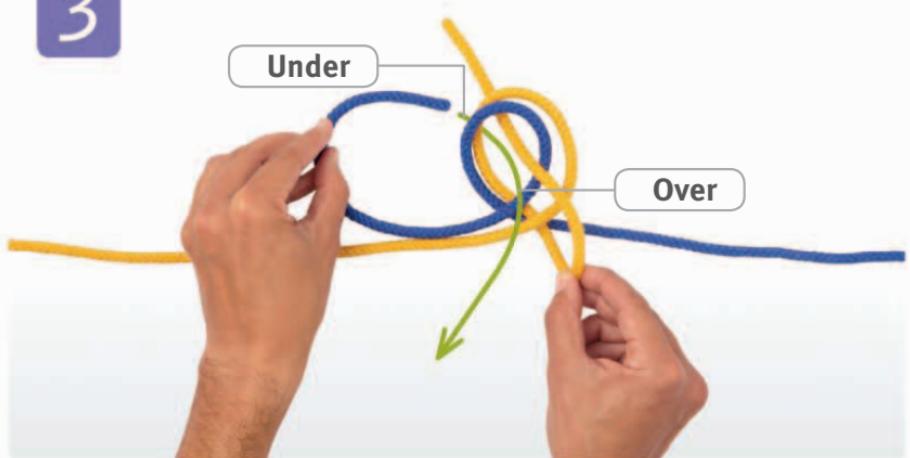


Hunter's Bend

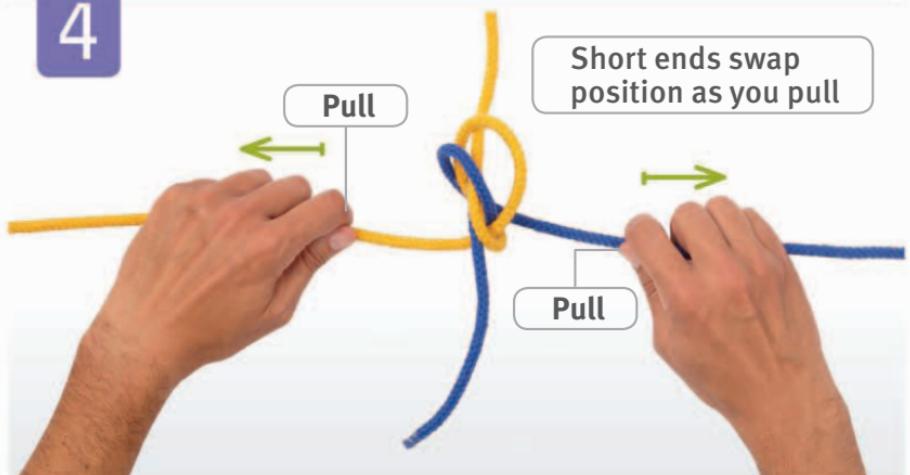
- Good for joining two lengths of synthetic rope (see also pp.140–41).
- Needs to be carefully adjusted to shape.
- Also known as the Rigger's Bend.
- Named after Dr. Edward Hunter.

**1****Cross under****2****Under****Over**

3



4



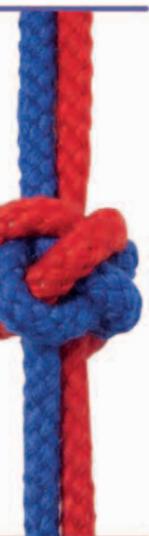
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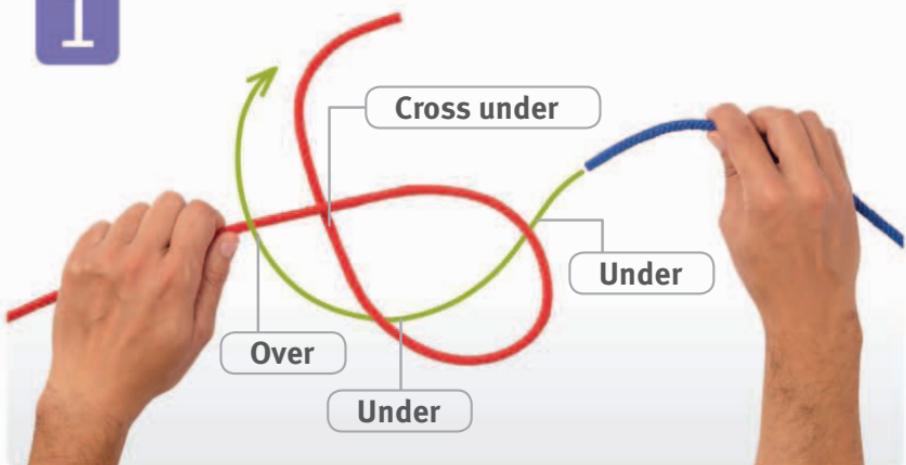


Lanyard Knot

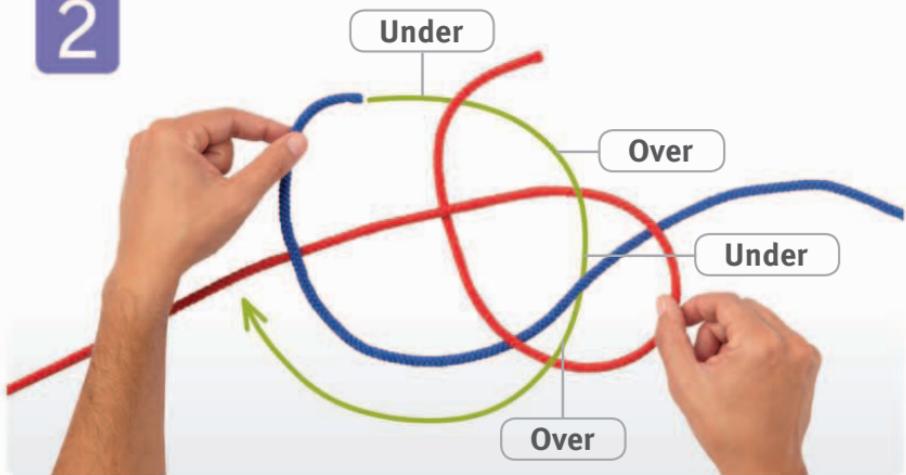
- A decorative method for joining two ropes.
- Based on the same structure as the Carrick Bend (see pp.148–49).
- Also known as the Friendship Knot.



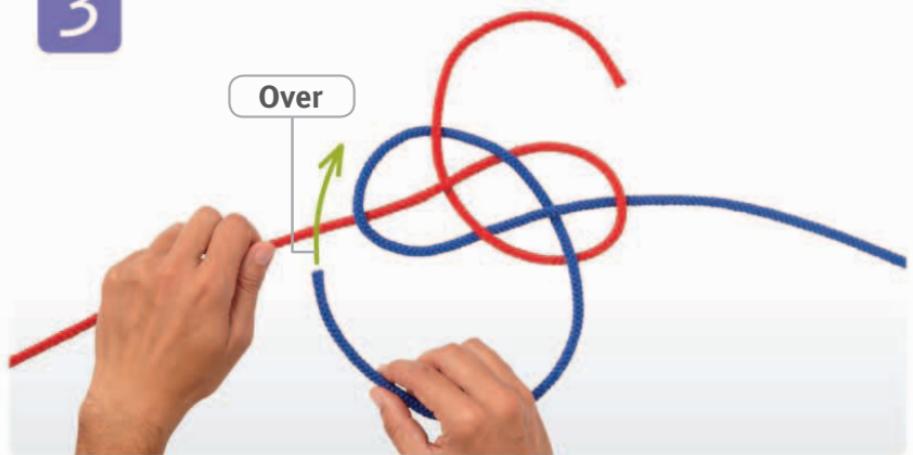
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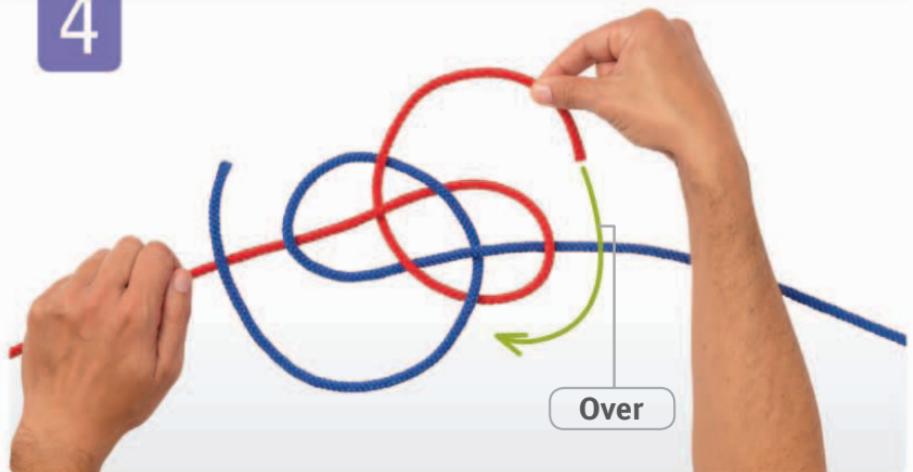
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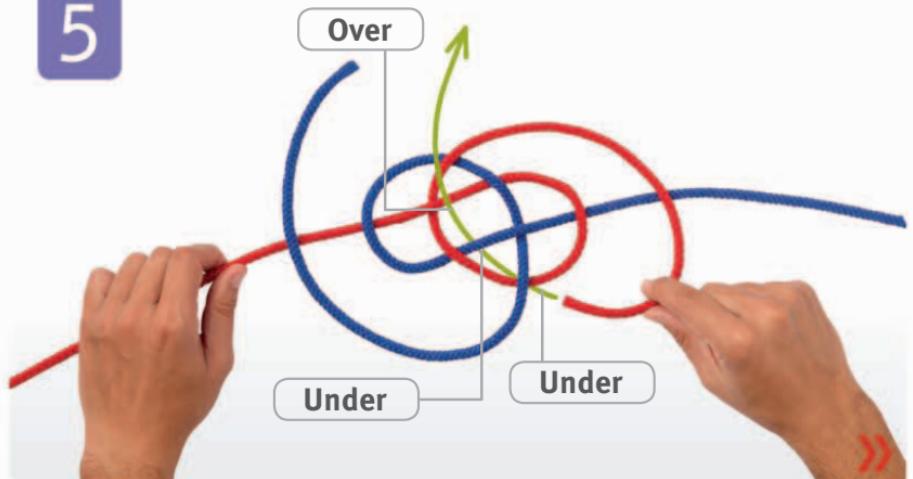
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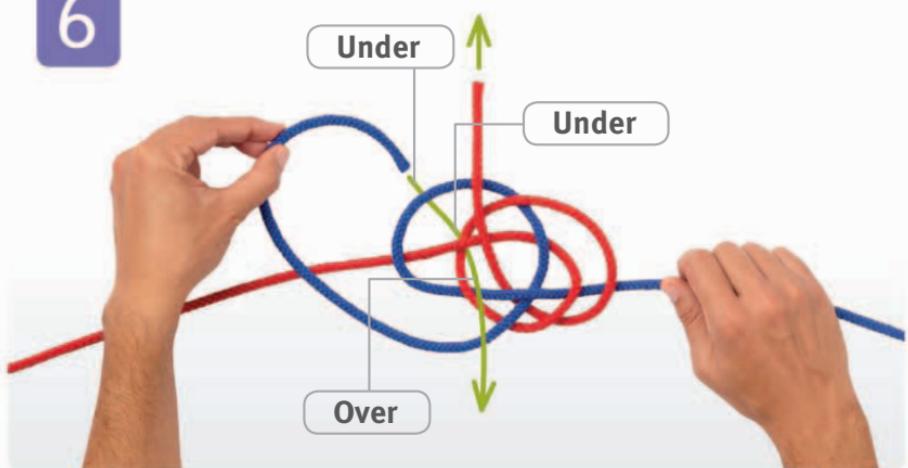


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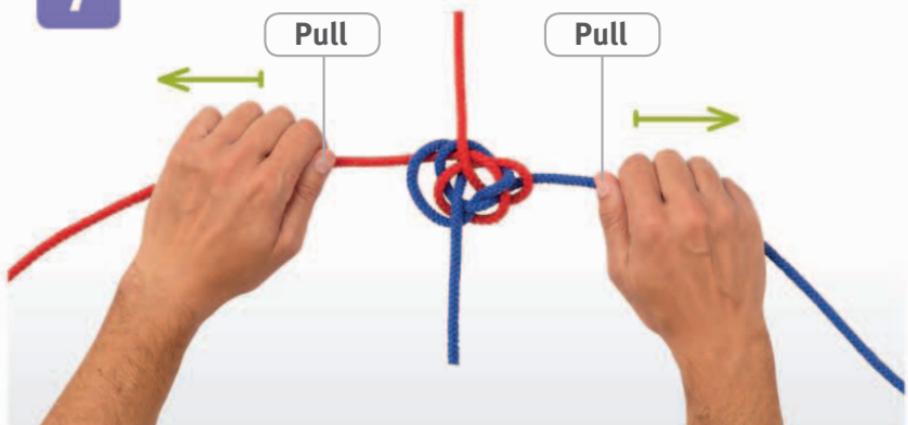


154 BENDS

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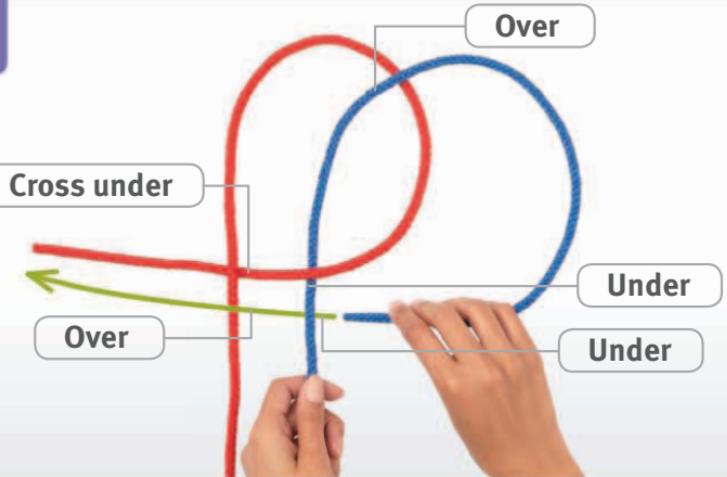
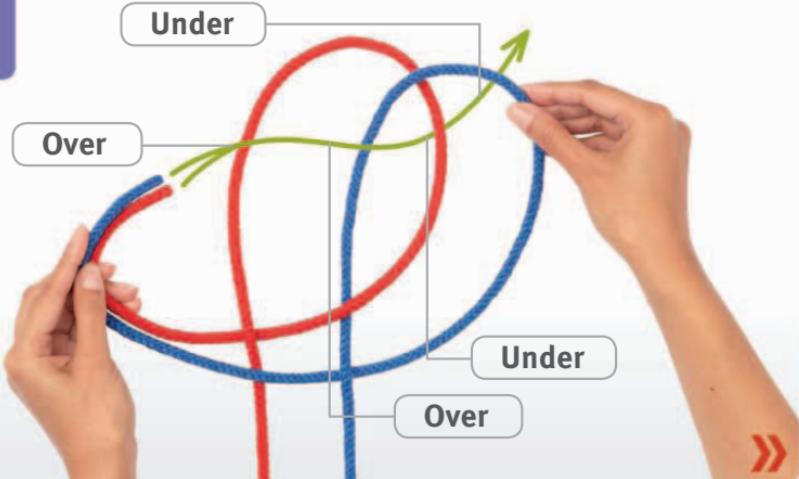
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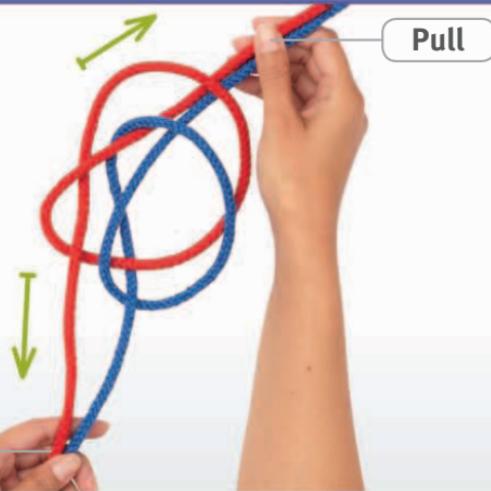
Ashley's Bend

- Used to join two pieces of thin line together.
- Easy to tie and untie.
- Secure even when subjected to strenuous movement.
- Ensure that both crossing turns are the same.
- Named after Clifford W. Ashley, an American knot expert.

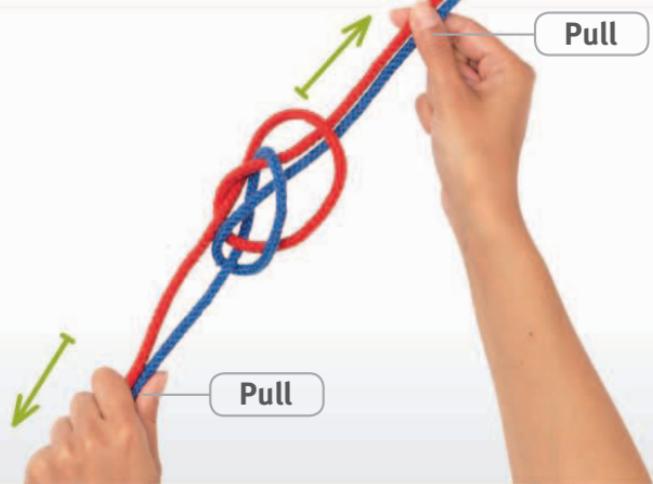
**1****2**

156 BENDS

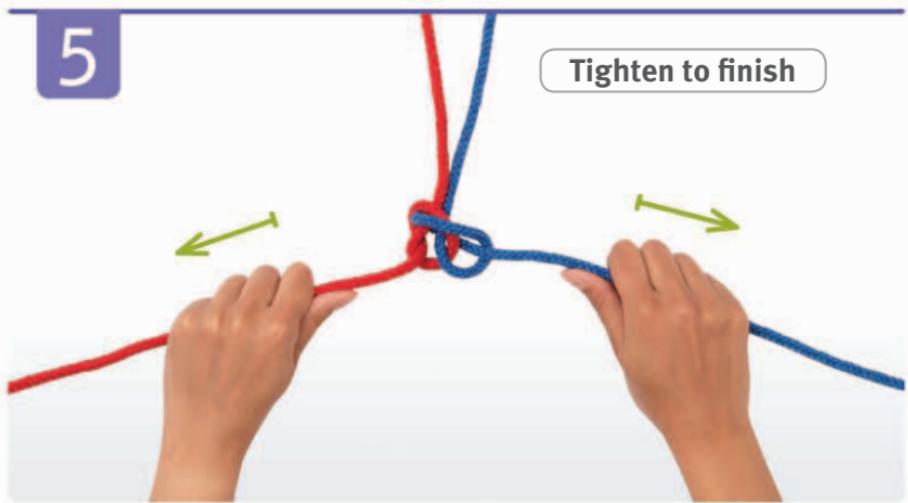
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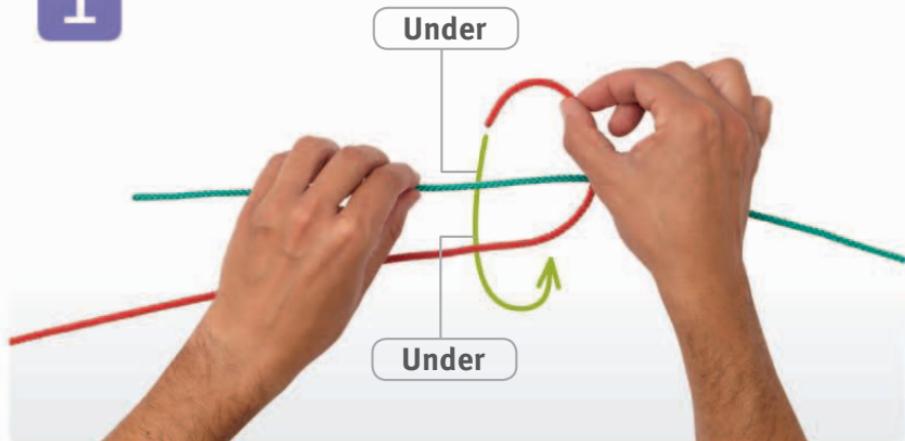


Fisherman's Knot

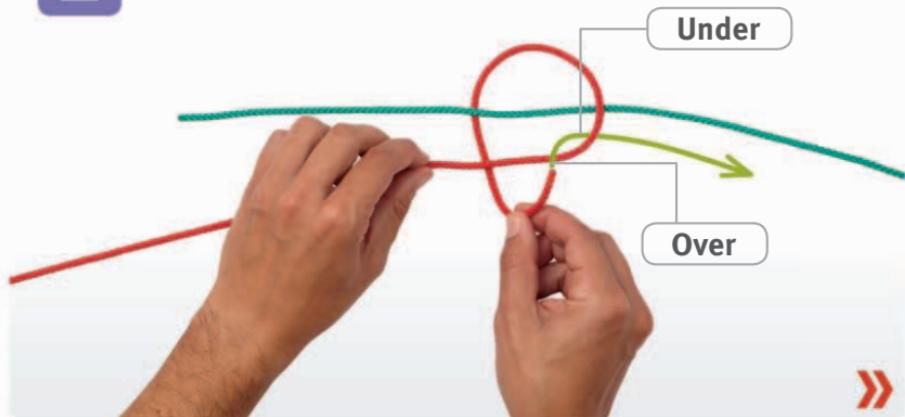
- Good for joining relatively thin ropes and lines.
- Used by fishermen and climbers.
- Ensure that the lengths of the short ends are at least five times the diameter of the rope.
- Consists of two sliding Overhand Knots (see pp.28–29).



1

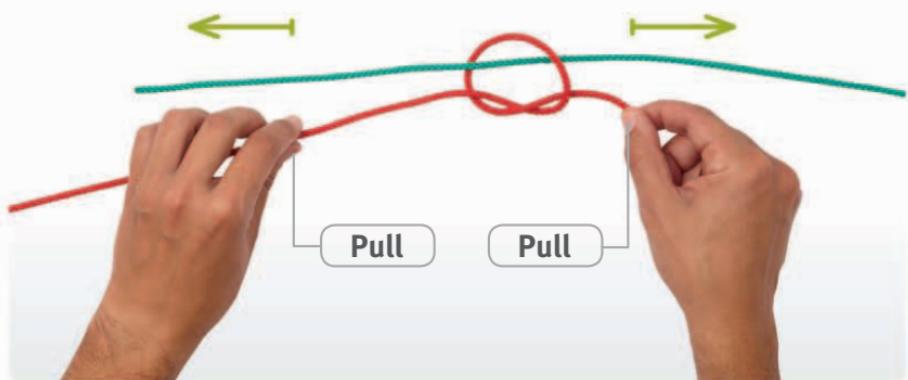


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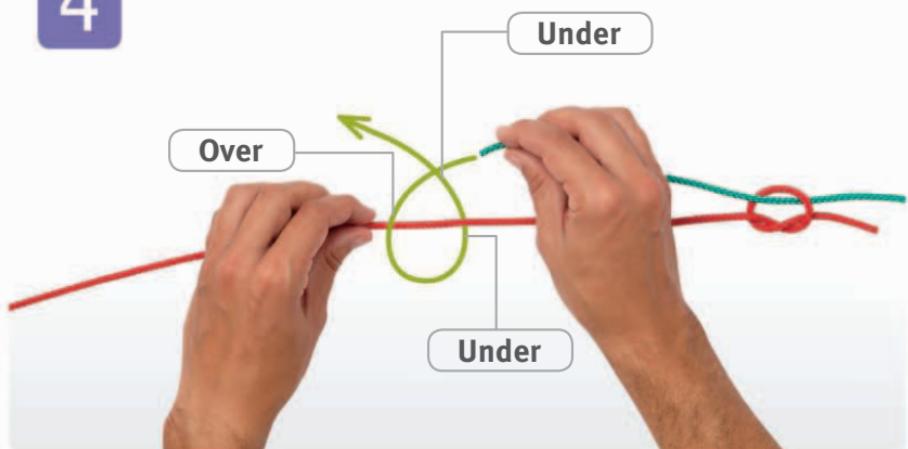


158 BENDS

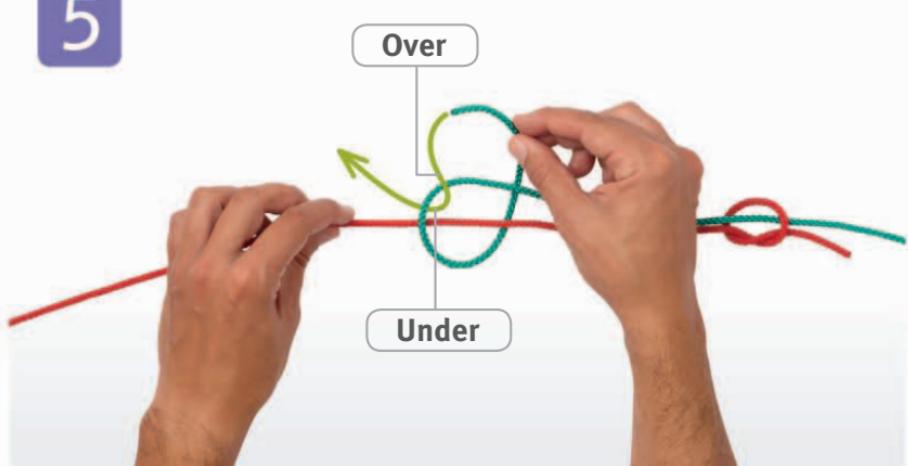
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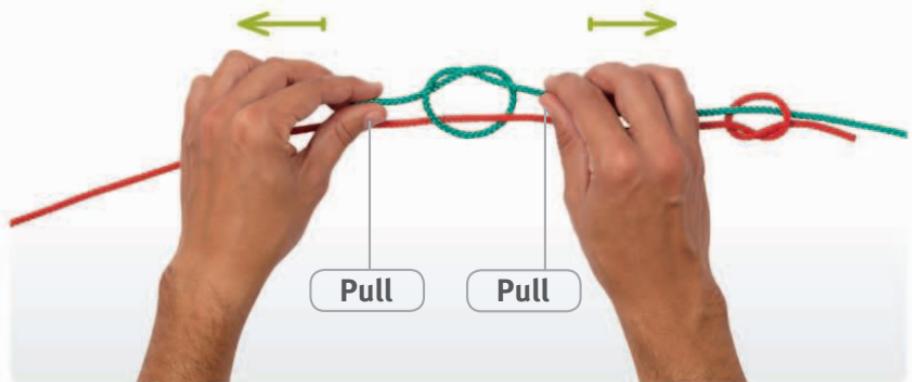
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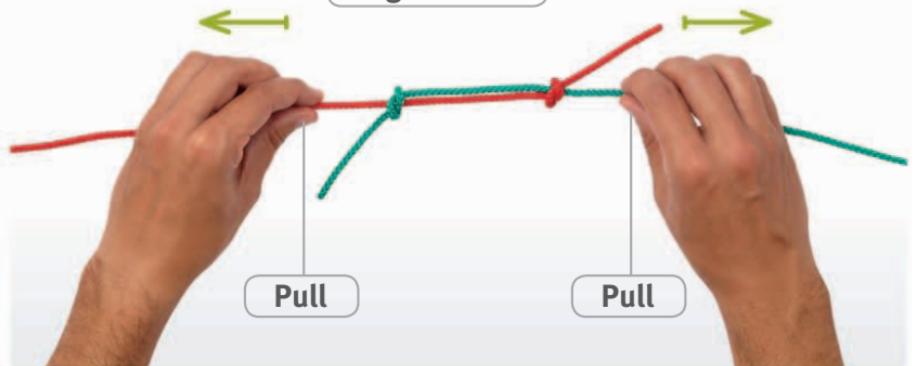


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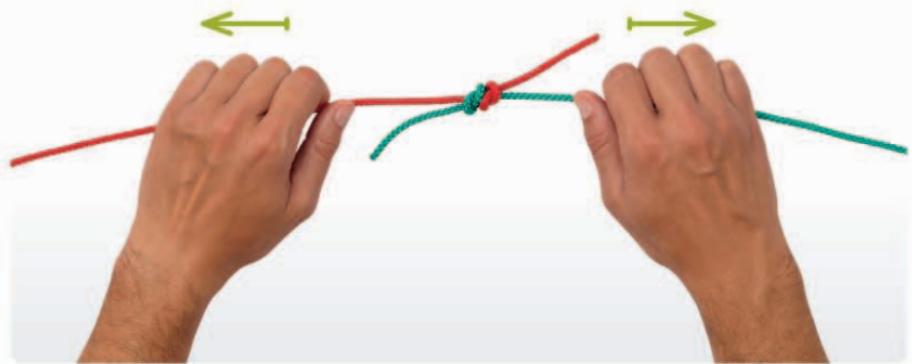
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Bring knots together



8

Tighten to finish



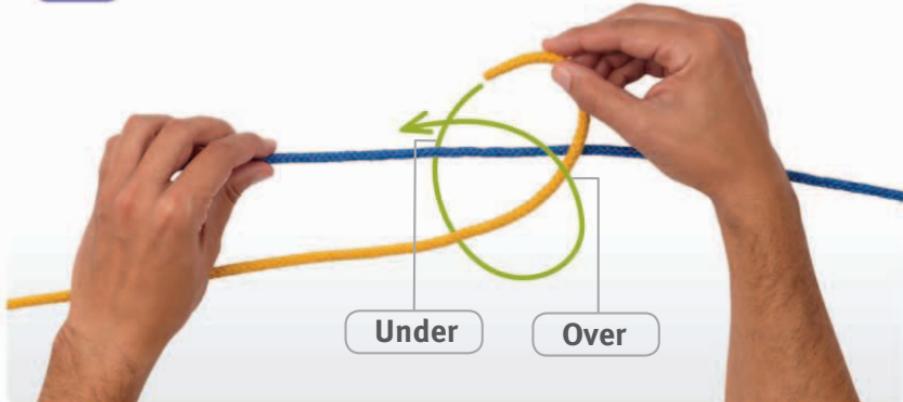


Double Fisherman's Knot

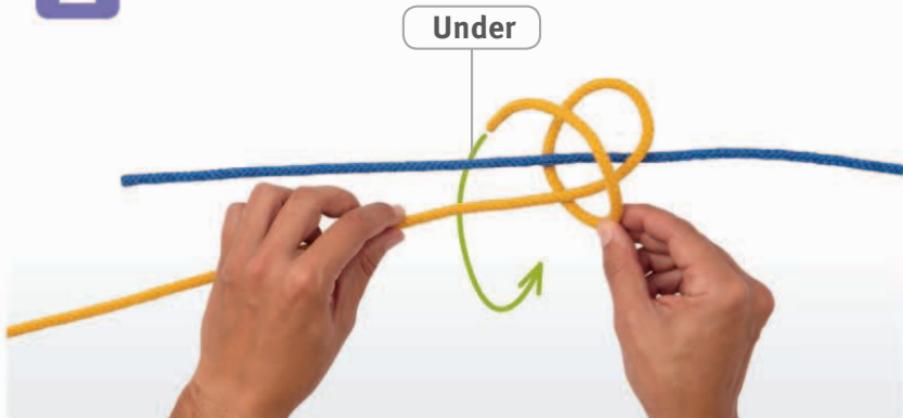
- Used when a rope or line is particularly slippery.
- The extra turns prevent the knot from coming undone when put under strain.
- The ends may be taped down for greater security.



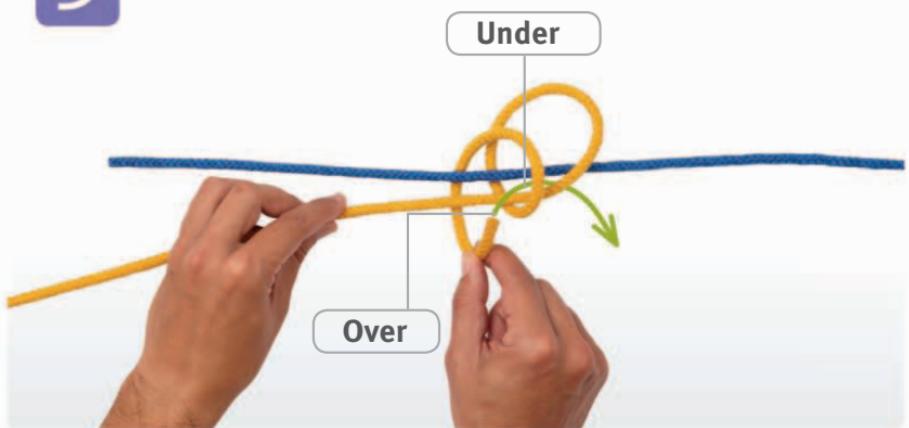
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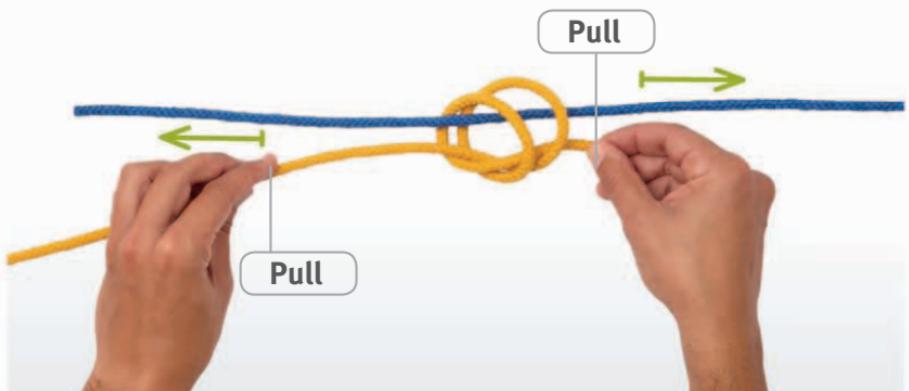
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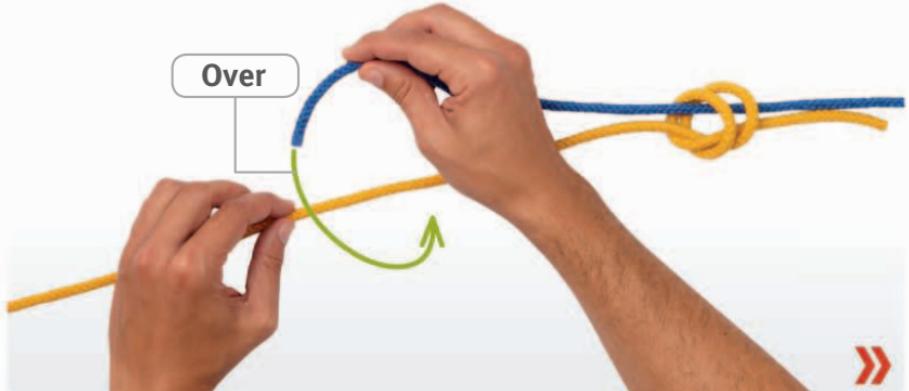
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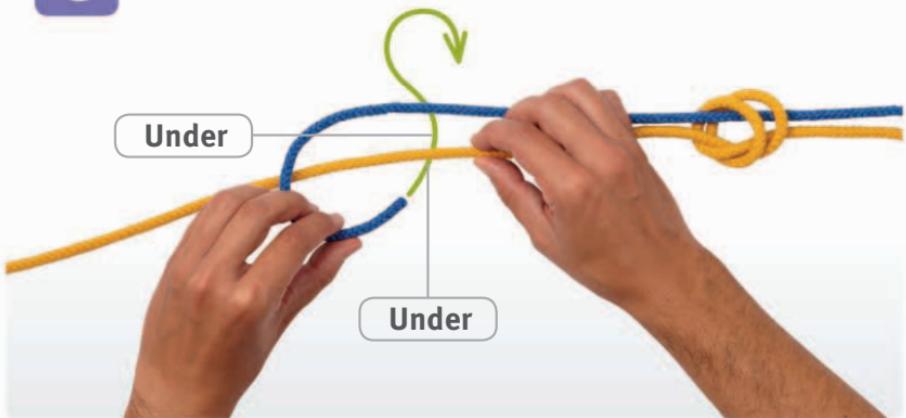
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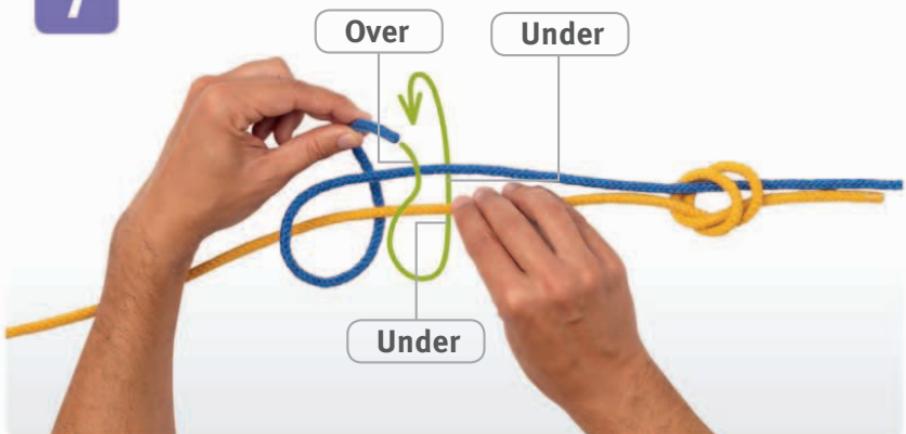
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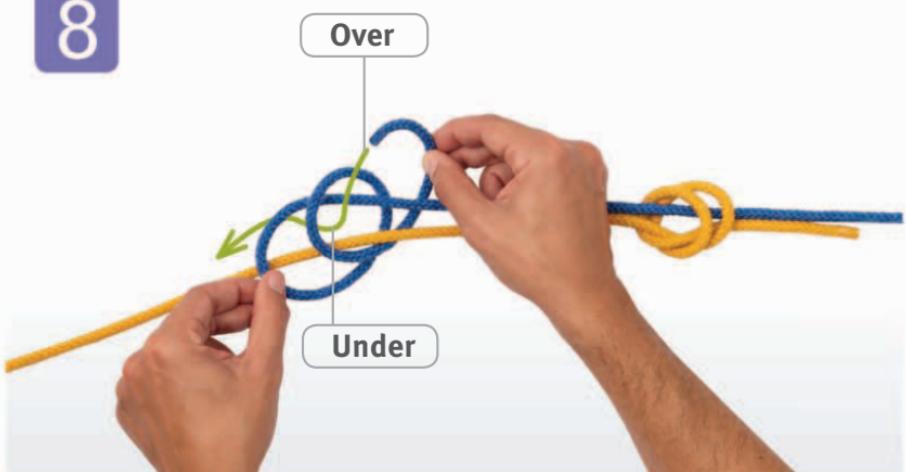
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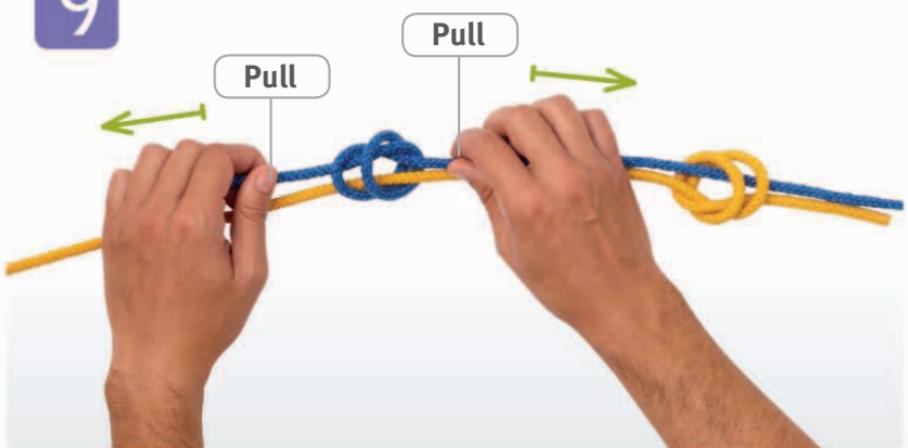
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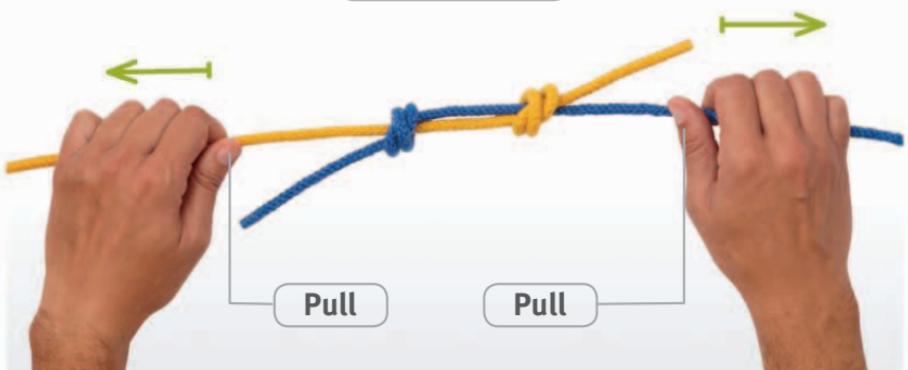


9



10

Bring knots together



11

Tighten to finish





BEST FOR ...

Climbing

A knowledge of knots is essential for climbers, as their safety may depend on it. It is important to take care when finishing these common climbing knots—check the shape is correct and make sure there are no twists in the rope.

Italian Hitch

» pp.234–35

 Used on a safety line by climbers as it can control the speed of a fall and the distance fallen.

 A knot that can also be used for abseiling.

 Creates twists in the rope and causes wear, so best used as a backup or in an emergency.



Similar knots:
» p.235 Reversed Italian Hitch

Prusik Knot » pp.228–29

 Will slide when not under strain, so useful for providing handholds and footholds on ascent and descent.

 Extra turns can be added to give more friction if the rope is slippery or wet.

 Always check that the knot is secure and holds under strain.



Similar knots:
» pp.232–33 Klemheist Knot

Figure-Eight Loop

» pp.249–50

 Popular among climbers because its distinctive shape makes it easy to check that it has been tied properly.

 Still possesses some residual strength as an overhand loop, even if it is not tied properly.



Similar knots:

» pp.240–41

Bowline

» pp.253–54

Overhand Loop

Double Fisherman's Knot » pp.160–63

 Excellent for making continuous loops for Prusik slings (*see pp.228–29*).

 Also good for joining two lengths of rope, even if they are of different diameters.

 The chance of snagging can be reduced by taping the ends.



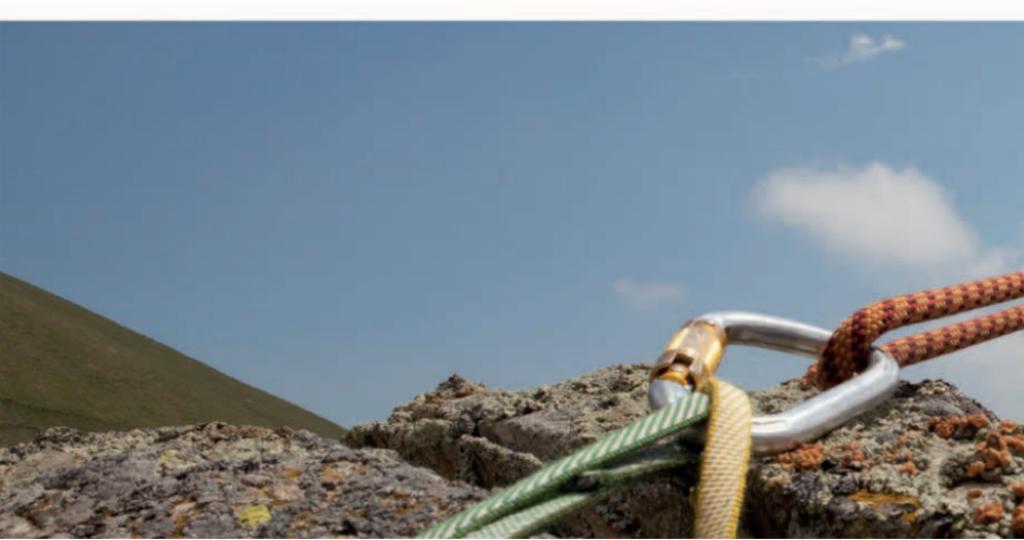
Similar knots:

» pp.157–59

Fisherman's Knot

» pp.172–73

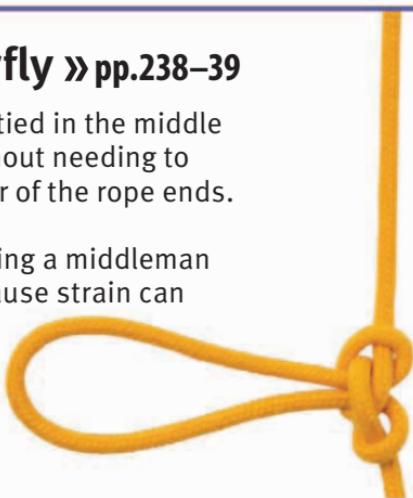
Water Knot



Alpine Butterfly » pp.238–39

✓ Can be quickly tied in the middle of the rope without needing to have access to either of the rope ends.

✓ Ideal for attaching a middleman on a climb because strain can be applied to either side of the knot.



Similar knots:
 » pp.249–50
Figure-Eight Loop
 » pp.259–61
Bowline on the Bight

Bowline with Stopper

» p.248

✓ A variation on a Bowline which makes a good stopper at the end of a rope.

✓ Bulky and, when tight, easier to untie than a Figure-Eight or a Double Overhand Knot.



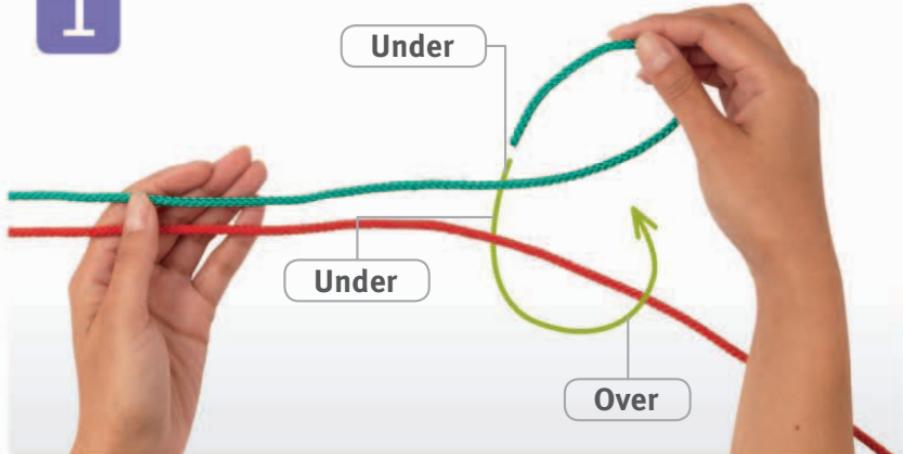
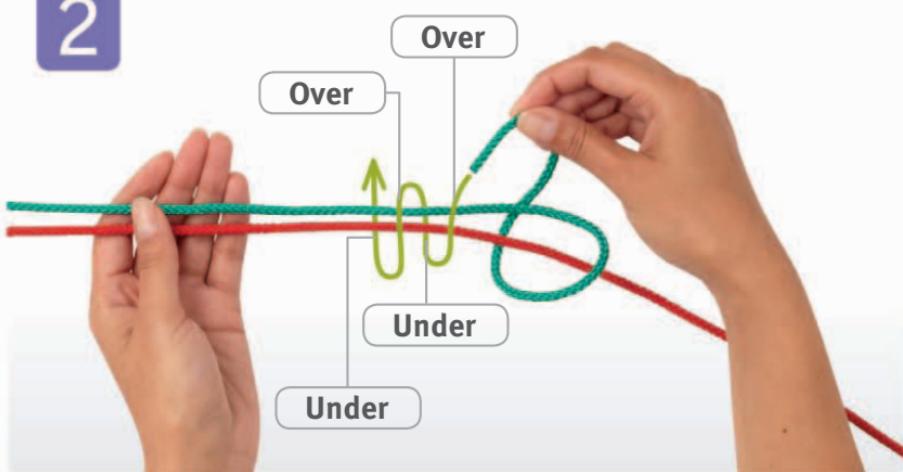
Similar knots:
 » pp.242–44
Bowline – Second Method
 » pp.245–47 **Bowline with Two Turns**



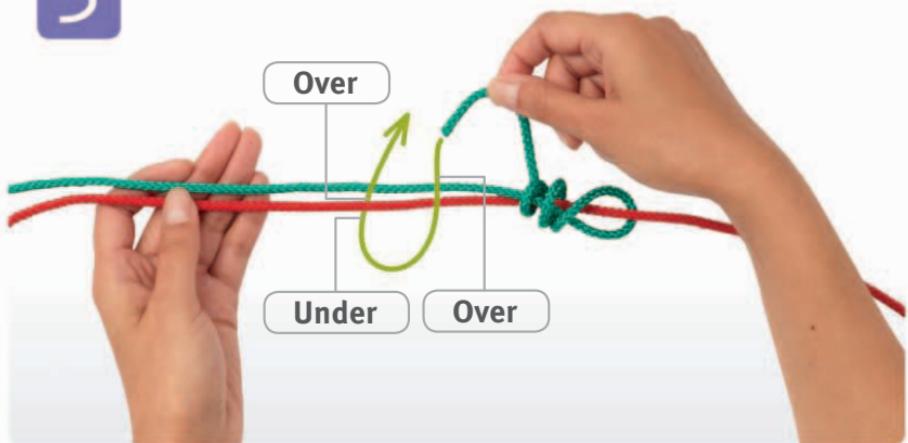


Blood Knot

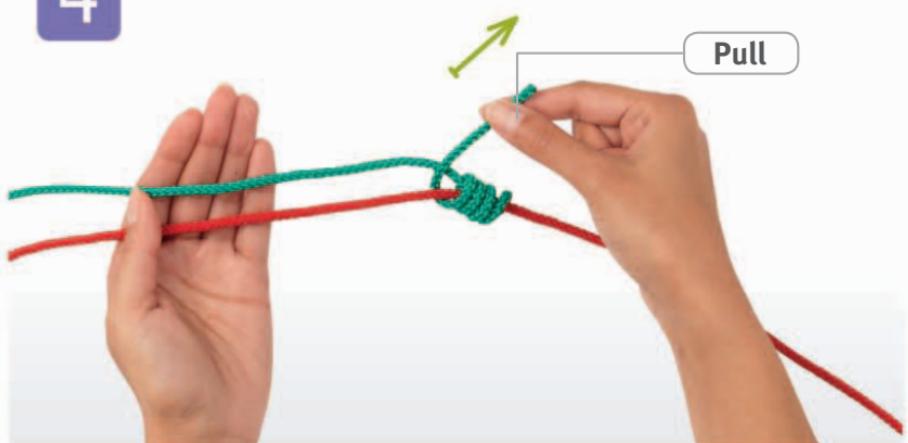
- An effective method for joining together two pieces of thin line, such as fishing line.
- If tying with nylon, moisten the line to help draw it tight.
- Almost impossible to untie.
- Also known as the Barrel Knot.

**1****2**

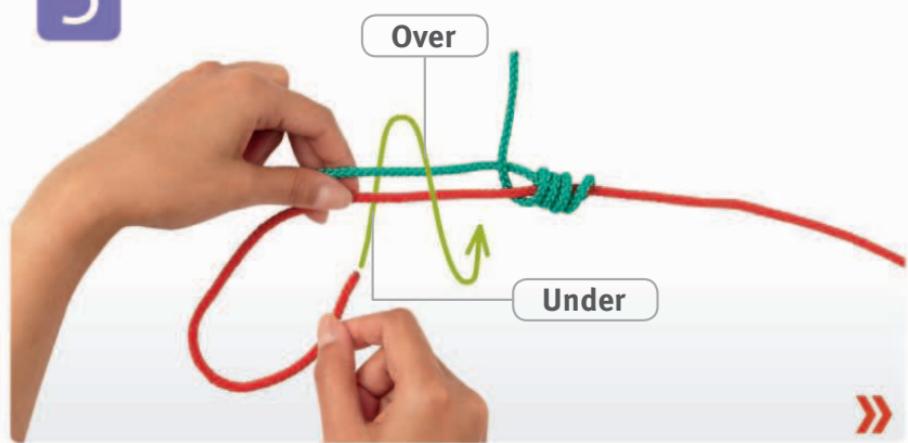
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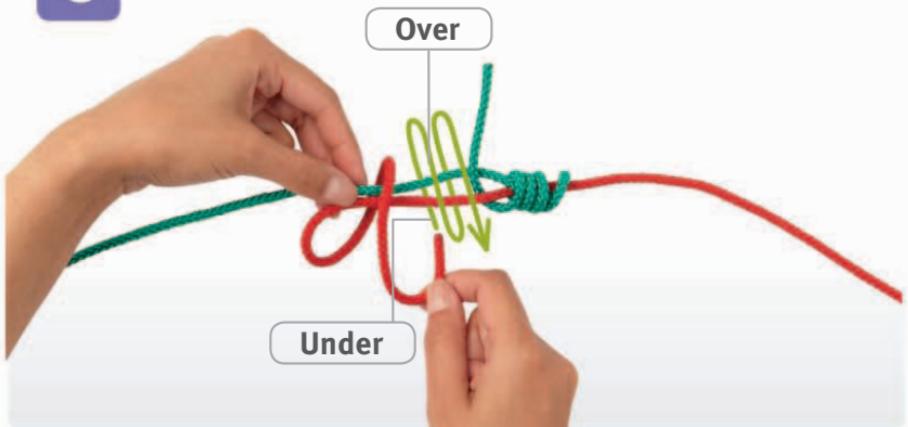
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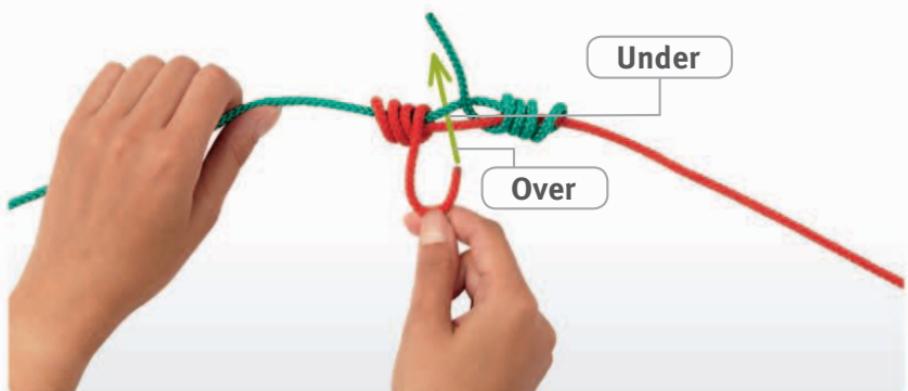
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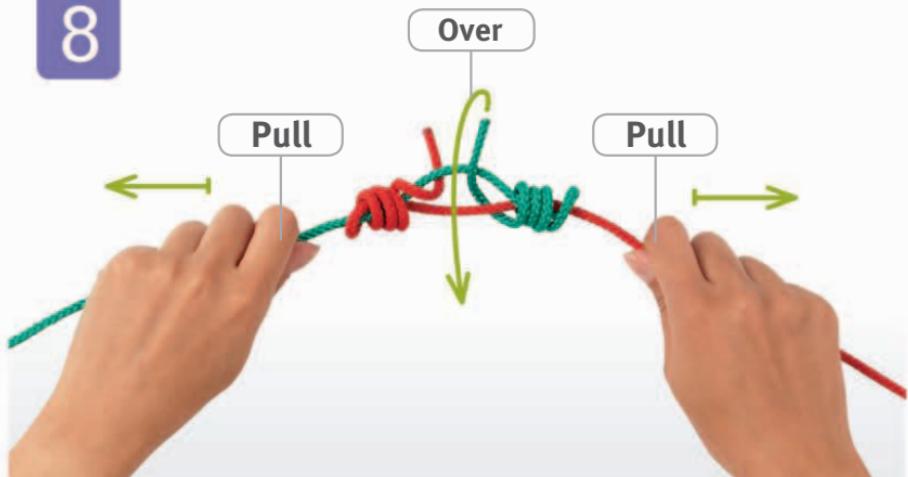
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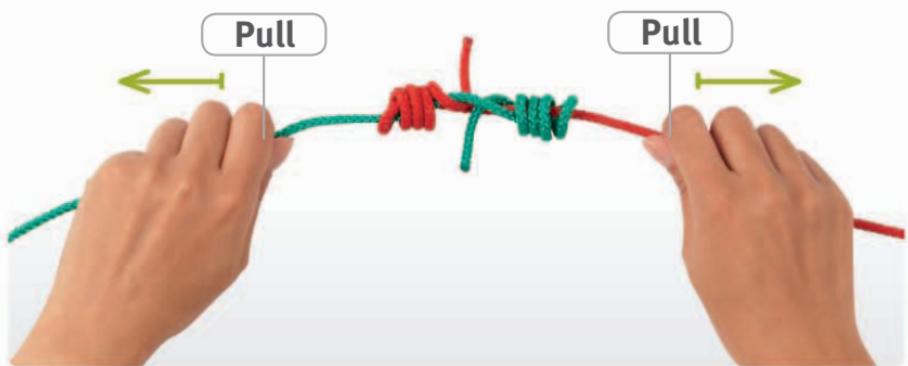
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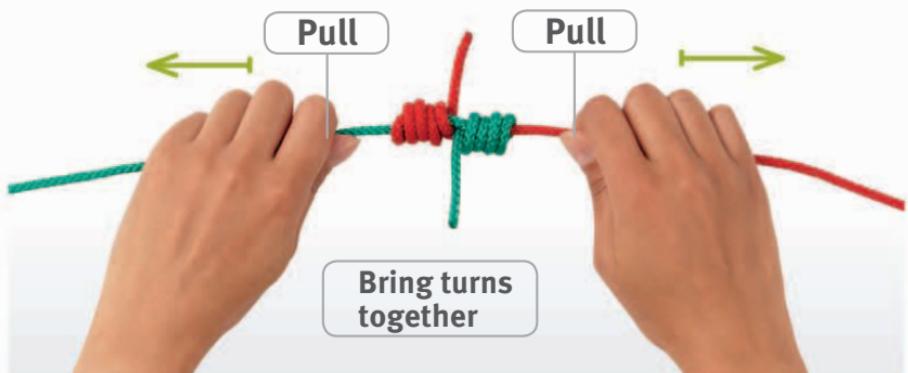
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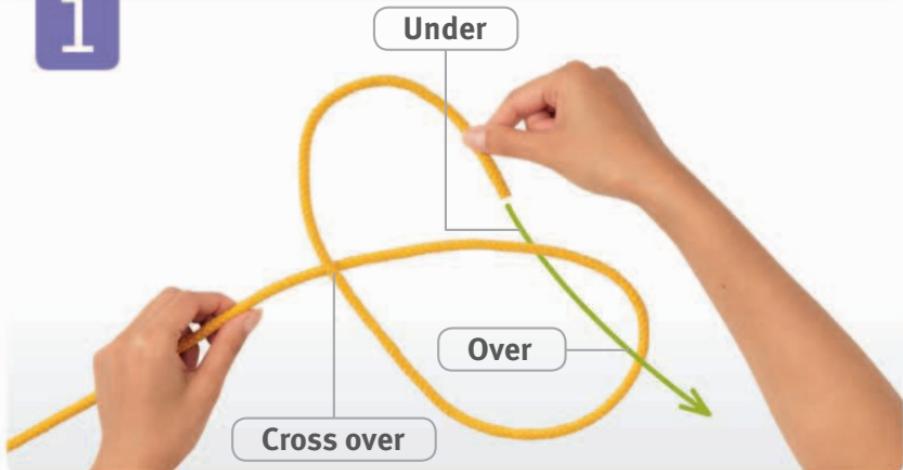
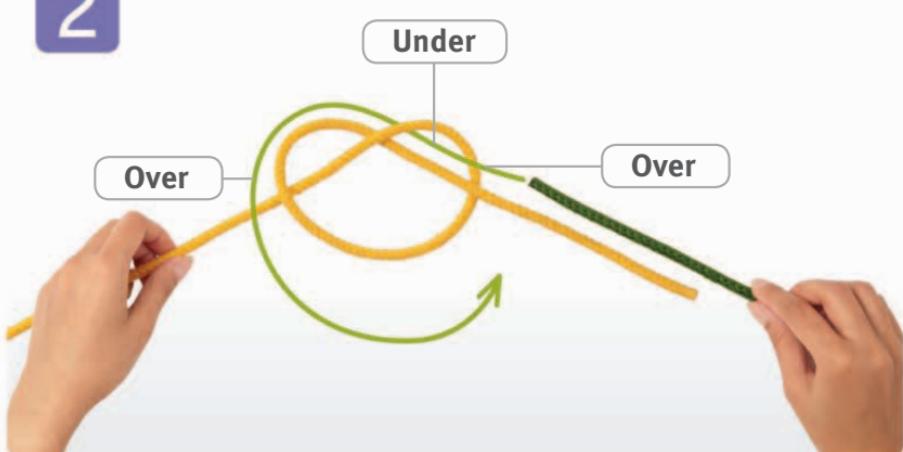
11





Water Knot

- Good for binding two ropes together.
- Will also work well with climber's flat tape.
- Works into a neat, flat arrangement.
- Based on the structure of the Overhand Knot (see pp.28–29).
- Also known as the Double Overhand Bend.

**1****2**

3

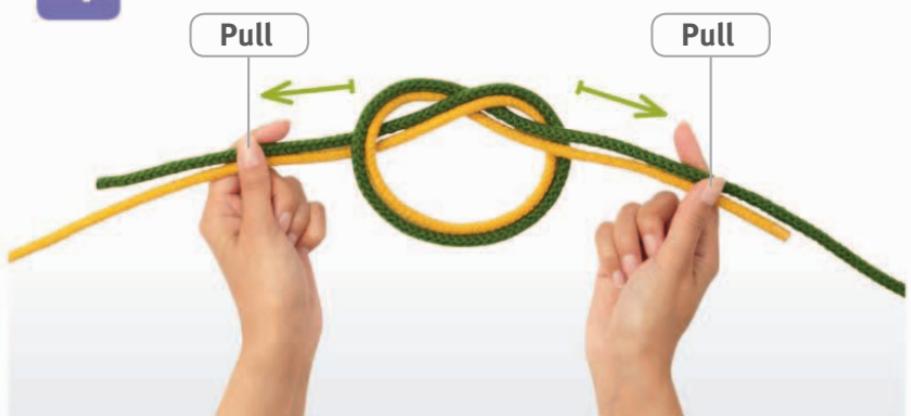
Under Over



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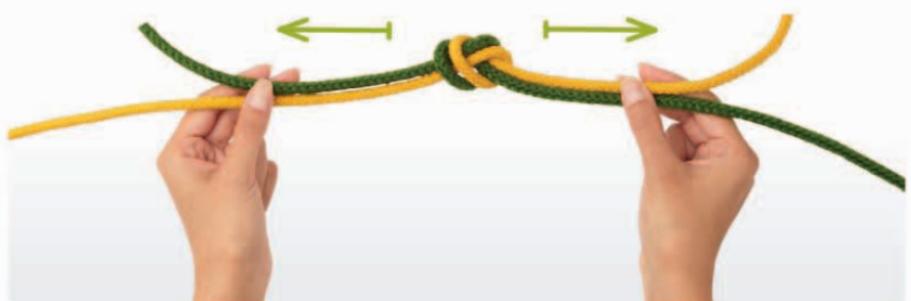
Pull

Pull



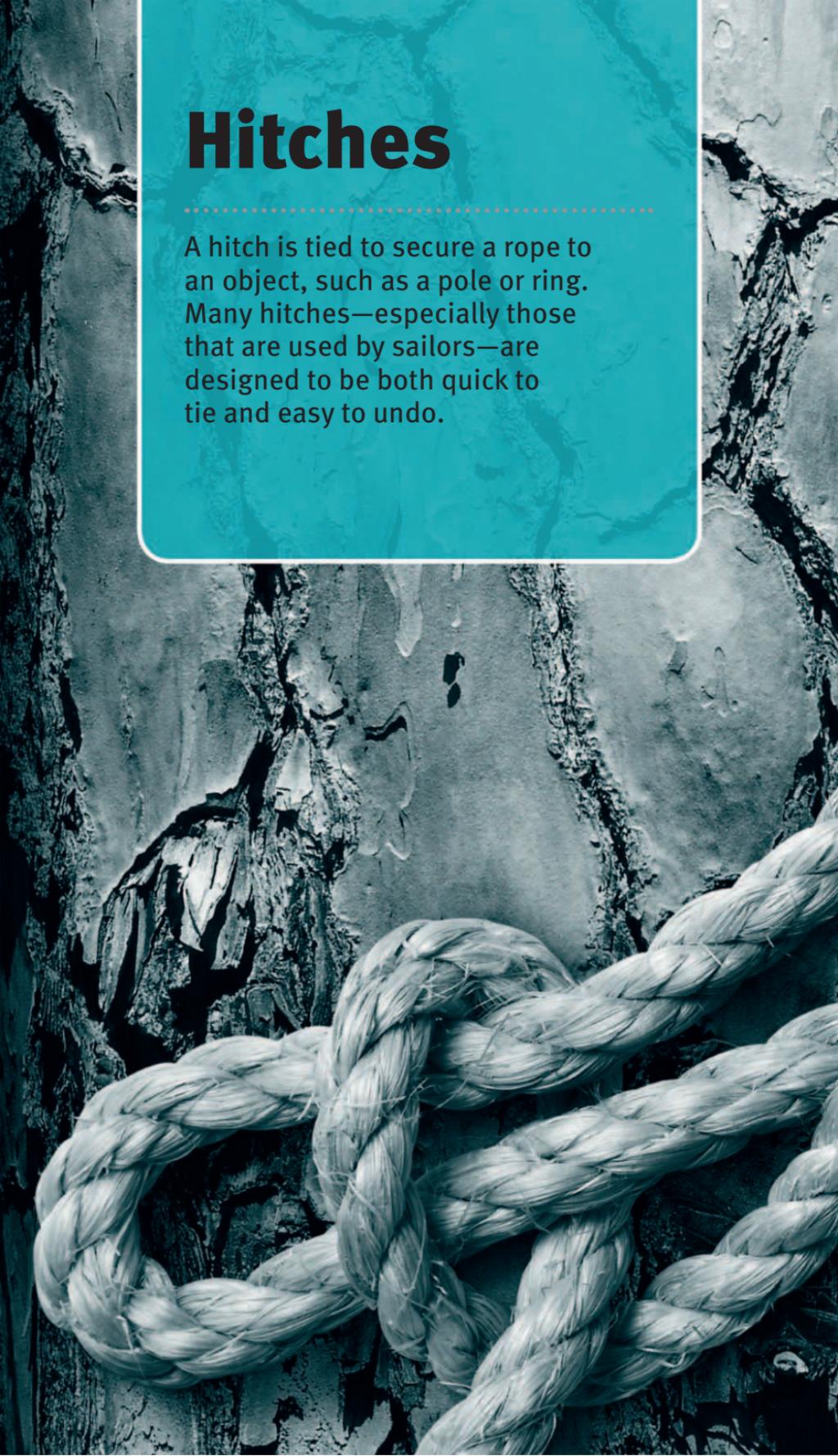
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Tighten to finish



Hitches

A hitch is tied to secure a rope to an object, such as a pole or ring. Many hitches—especially those that are used by sailors—are designed to be both quick to tie and easy to undo.

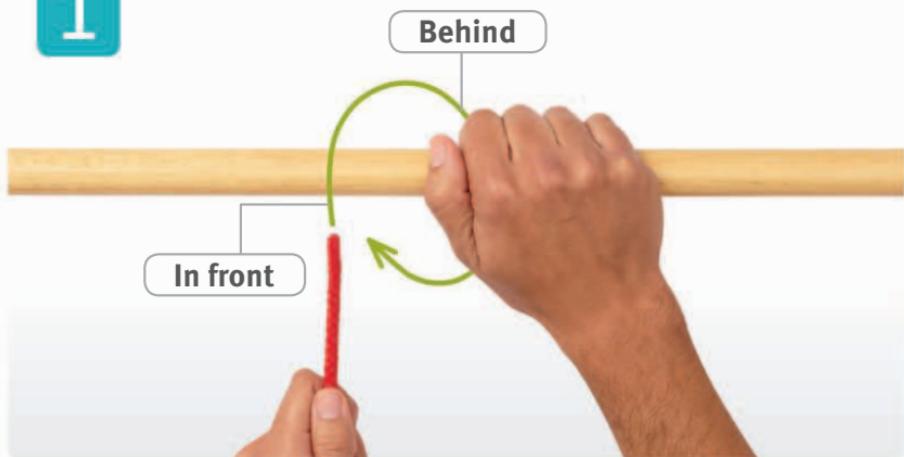
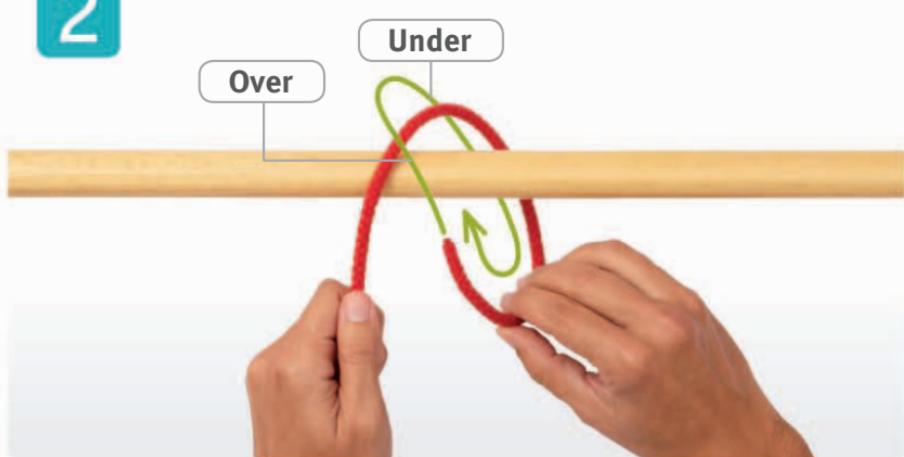






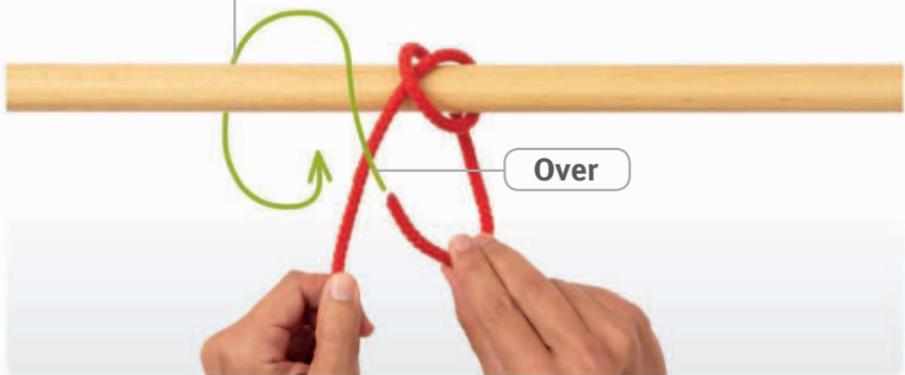
Rolling Hitch

- Can be used to take strain off another rope or pole.
- Suitable for use when the pull on the rope is coming from a low angle, or from the side.
- Will only slide in one direction along the pole or rope.
- Will lock if pulled in the other direction.

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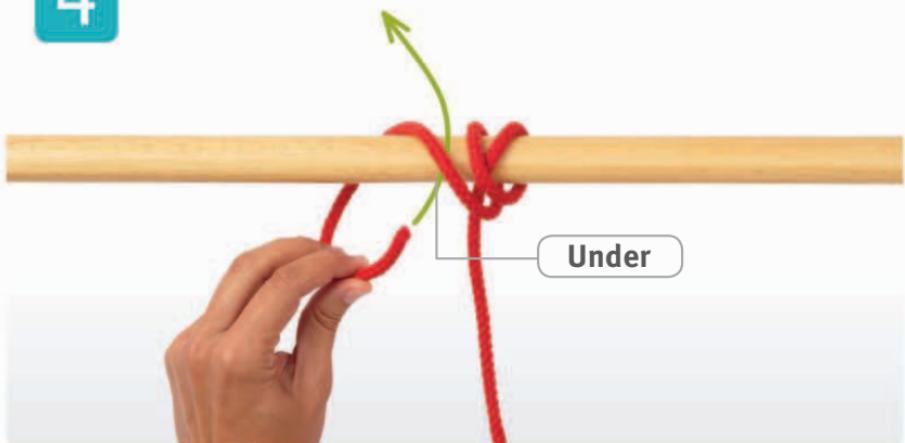
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Behind



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Under



5

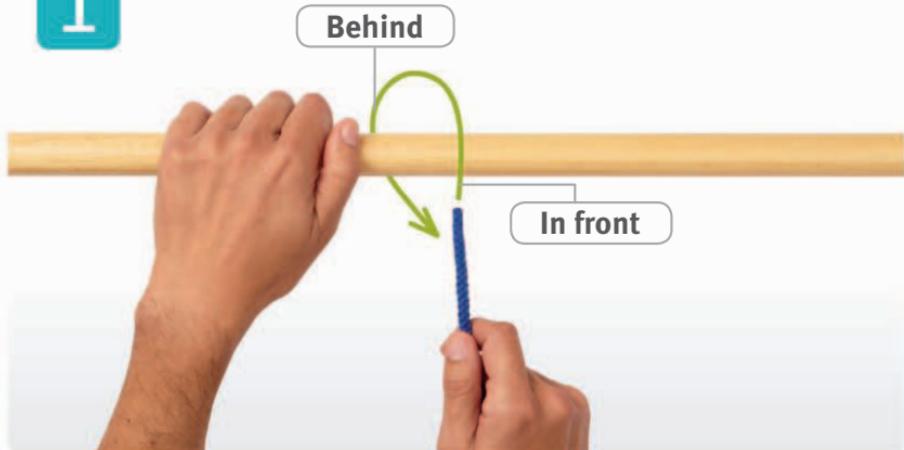
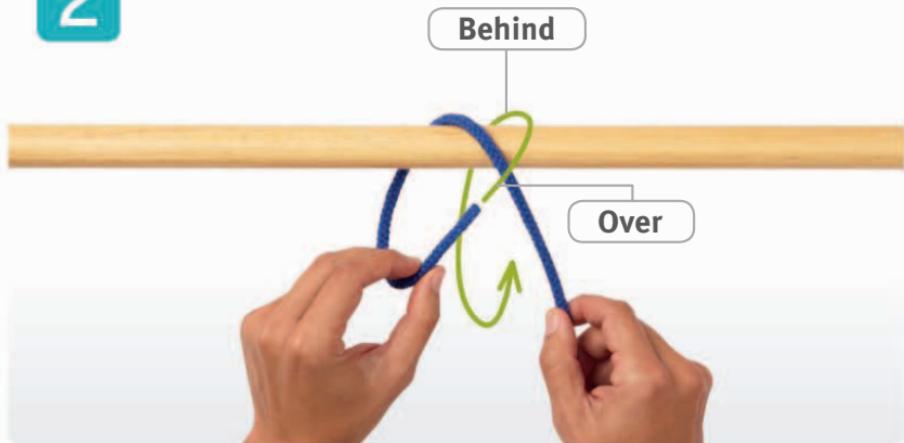
Tighten to finish



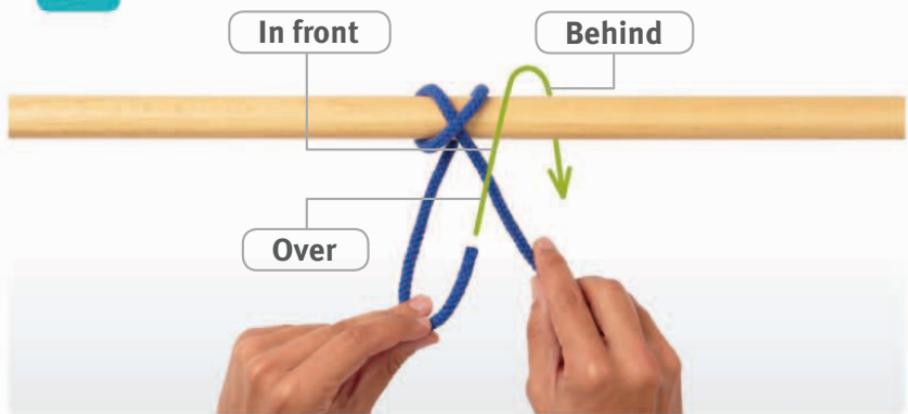


Mirrored Rolling Hitch

- Used to tie a rope to a pole or to take strain off another rope.
- Ensure that the second turn locks over the first.
- Make sure that the knot is tight before applying strain.
- Not suitable for stiff or slippery ropes.

**1****Behind****2****Behind****Over**

3



4



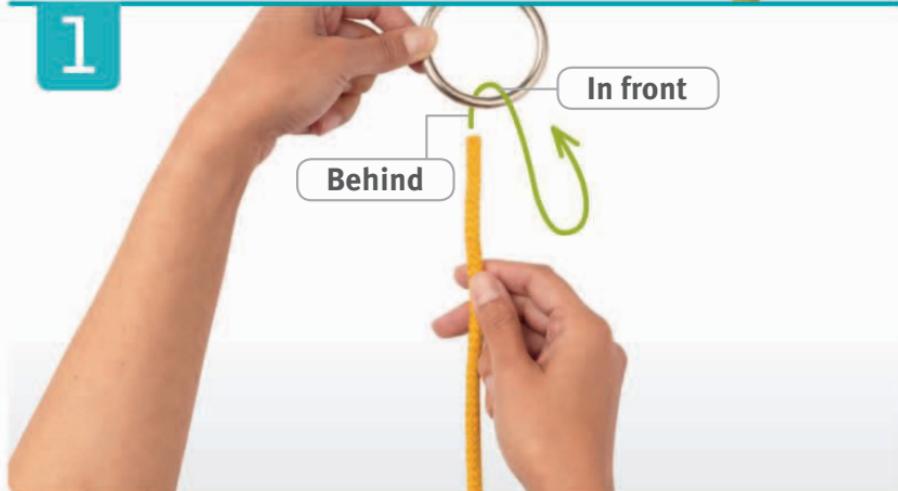
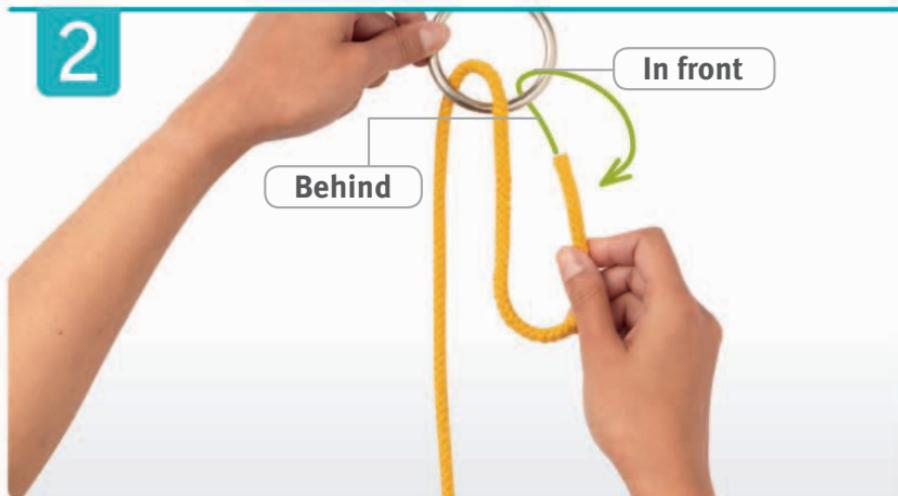
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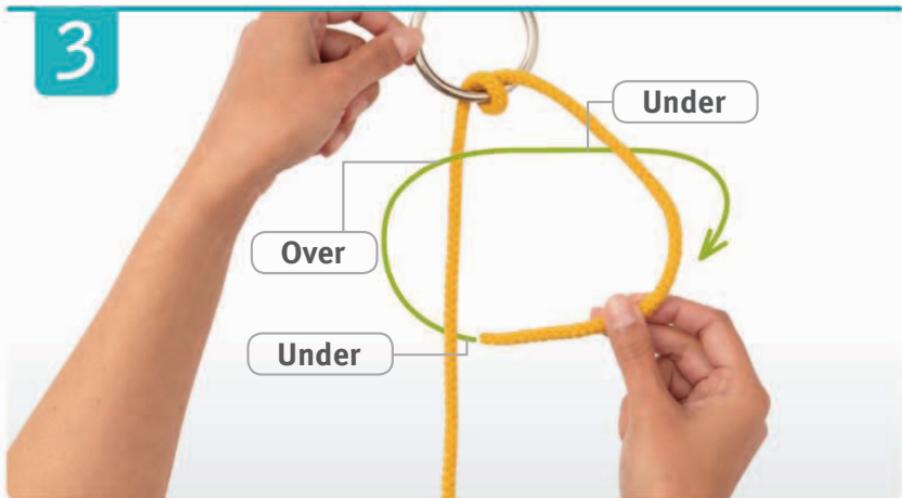


Round Turn and Two Half Hitches

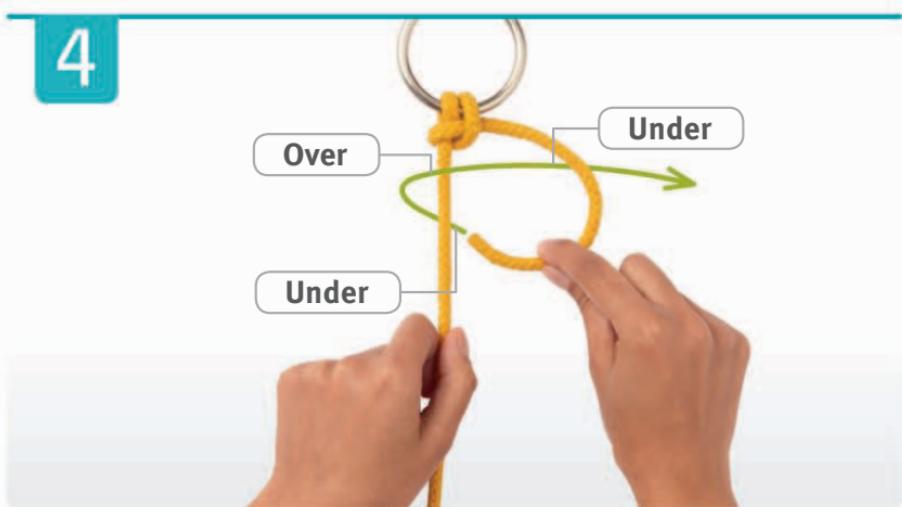
- Used to secure a rope to a fixed object, such as a pole or ring.
- Easy to tie.
- Ensure that you make the half hitches (*see p.23*) in the same direction.

**1****2**

3



4



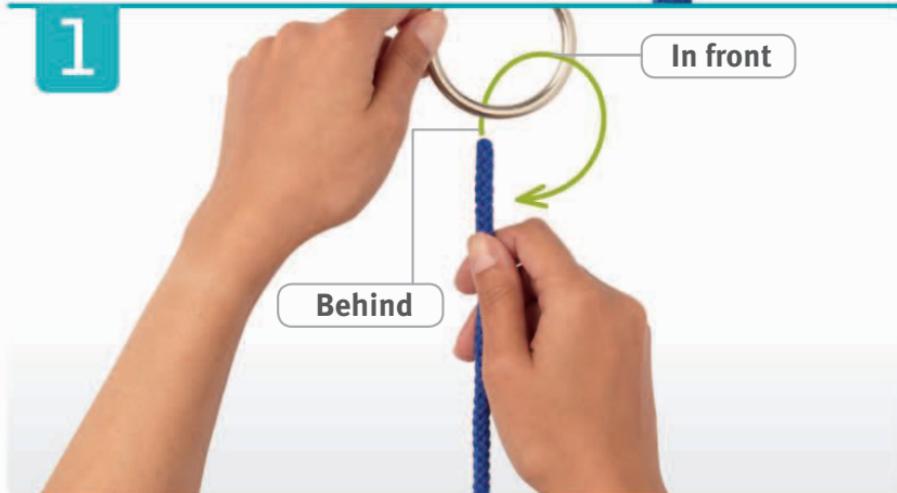
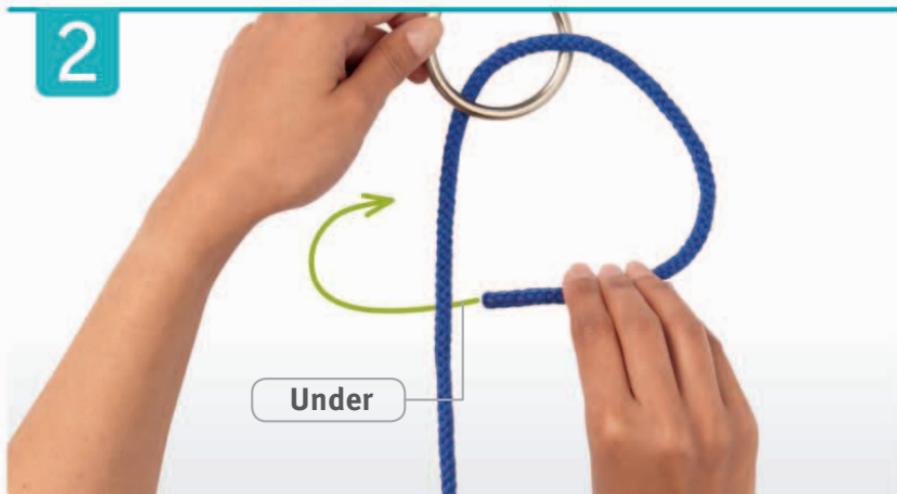
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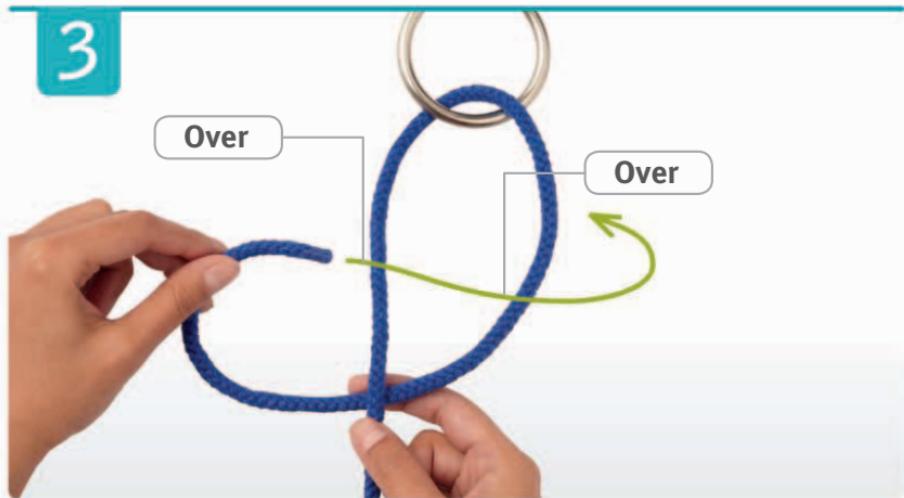


Buntline Hitch

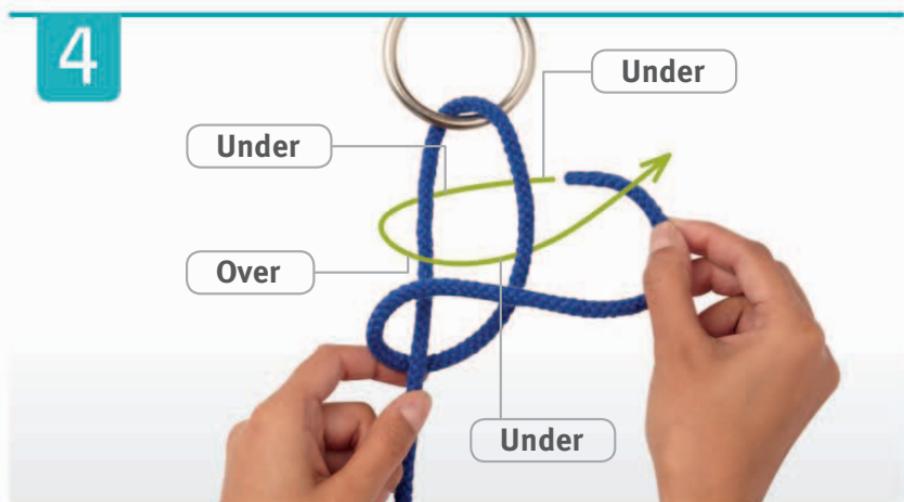
- Used to attach a rope to an object such as a ring or pole.
- Will not come undone even when subjected to a lot of movement.
- Works well with hi-tech rope, such as Kevlar.

**1****2**

3



4



5



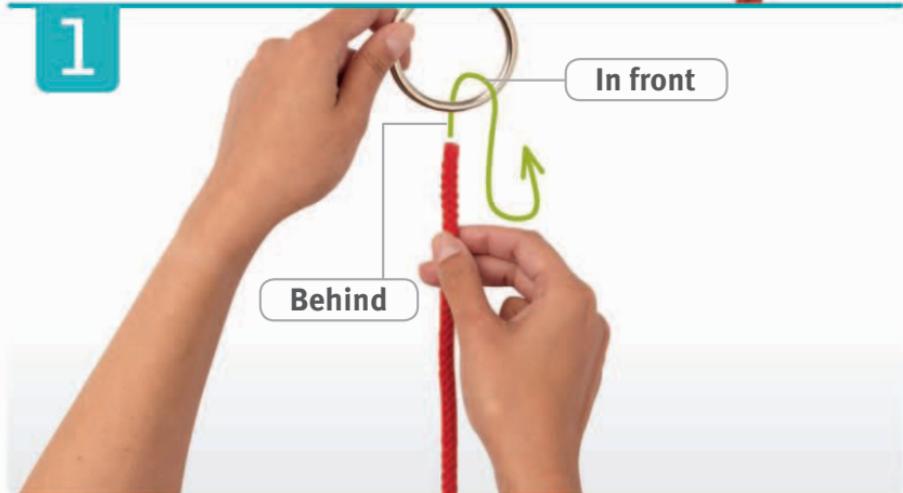


Fisherman's Bend

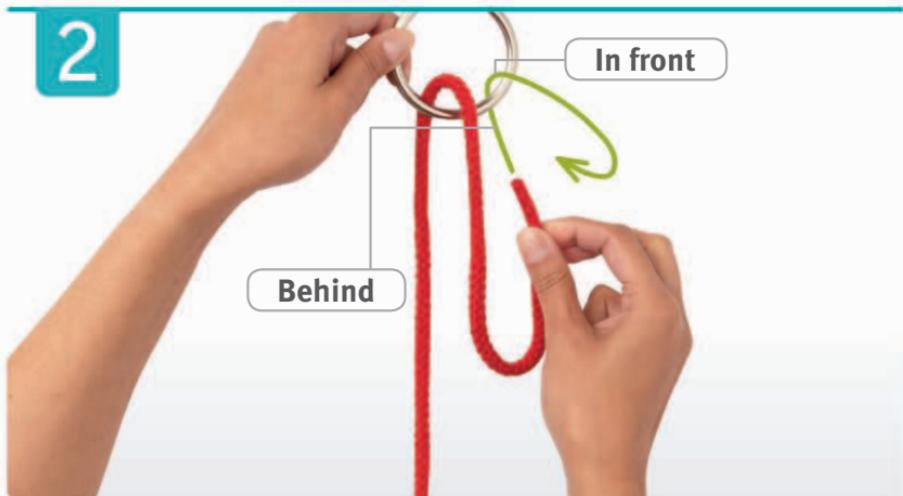
- Good for tying a rope to an anchor or a buoy.
- Easy to untie.
- Seize (see pp.387–89) the working end to the standing part to make more secure.
- Also known as the Anchor Bend.



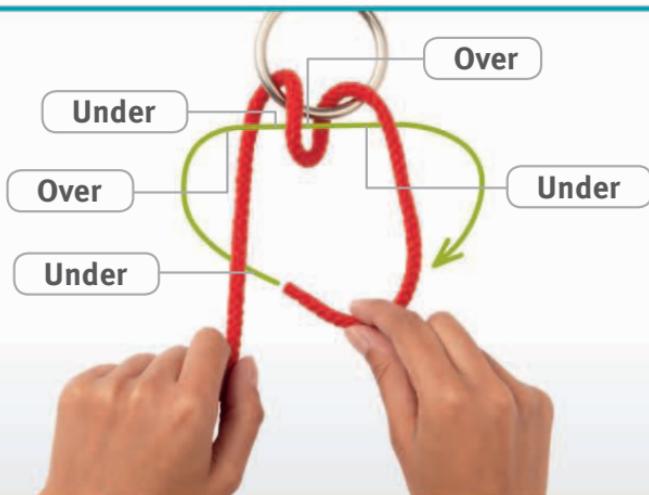
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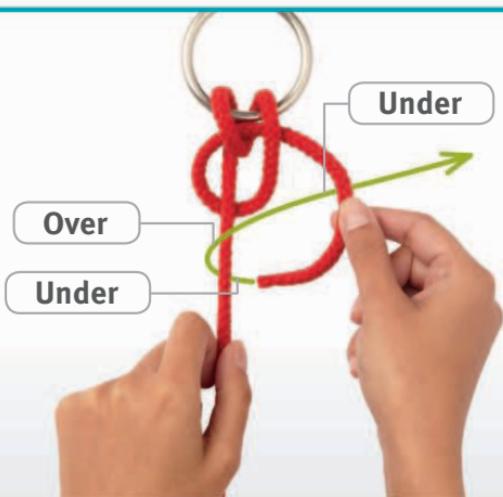
2



3



4



5





BEST FOR ...

Camping

A few simple knots can make camping much easier and safer. They can be helpful in pitching a tent and transporting equipment and, in survival situations, can be used to make a shelter or lash a tarpaulin to trees.

Rolling Hitch » pp.176–77

✓ A hitch that can be used to secure guy ropes to a tent peg.

✓ Can be used to apply tension to a line if your guy ropes do not have an adjuster.

✓ Strain can be applied horizontally in one direction, or vertically.



Similar knots:
» pp.178–79
Mirrored
Rolling Hitch

Sheer Lashing

» pp.222–24

✓ A lashing that is perfect for making the frame of a shelter.

✓ Can also be used to attach a reinforcing piece of wood to a broken pole.

✓ If tied loosely at the end of two poles, it can be opened out into an A-frame.



Similar knots:
» pp.211–14
Square Lashing

Square Lashing

» pp.211–14

✓ A good multi-purpose, load-bearing lashing used to tie two poles together at right angles.

✓ Can be used to build rigid structures of all sizes—useful for a temporary table or stand while camping.



Similar knots:
» pp.215–17
Diagonal Lashing

Round Turn and Two Half Hitches » pp.180–81

✓ The perfect knot for attaching a line to a ring, pole, or post.

✓ Can support heavy loads, so it is ideal for fastening a rope swing to a branch of a tree.

✓ Can also be used to secure a guy rope to a tent peg.



Similar knots:
» pp.184–85
Fisherman's Bend

Bowline » pp.240–41

✓ A simple knot for tying a loop around a fixed object.

✓ Good for tying tarpaulins or sheets—it won't slip or jam easily in windy conditions.

✓ Can also be used to hang a hammock, or attach a canoe to a trailer.



Similar knots:
» pp.245–47
Bowline with Two Turns
» pp.249–52
Figure-Eight Loop

Waggoner's Hitch

» pp.203–04

✓ Used for centuries to fasten loads onto wagons and trucks, it will secure a load tightly to a roof rack or trailer.

✓ Use where a rope needs to be pulled extra tight—the knot's lever-type action allows strain to be put on a rope.



Similar knots:

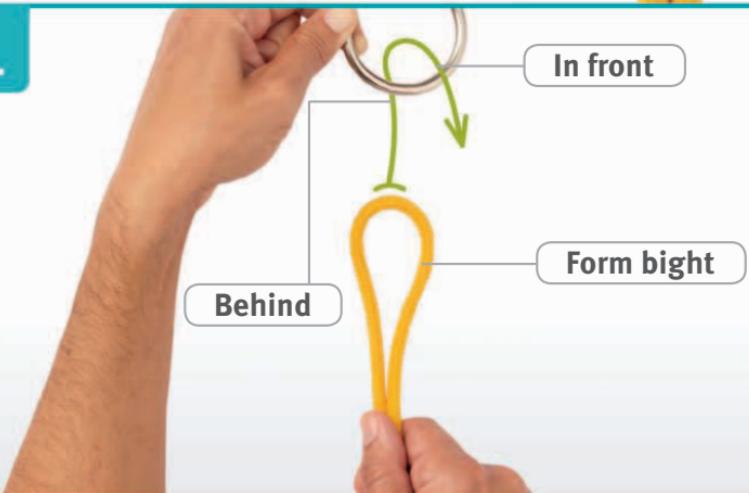
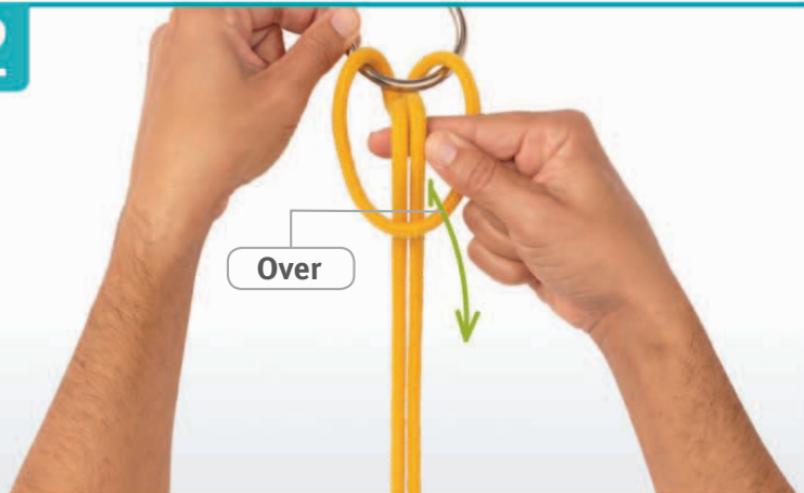
» pp.211–14
Square Lashing
» pp.222–24
Sheer Lashing





Cow Hitch

- Used to tie a rope around a ring or pole.
- Formed with two half hitches (see p.23) tied in opposite directions.
- The least secure of all hitches unless used with a fixed loop.
- Also known as the Lark's Head.

**1****2**

3



4



Pedigree Cow Hitch

- If only one standing part of a Cow Hitch (see pp.190–91) is taking strain, make it more secure by tucking the other part between the bight and ring.
- Ensure that the tail is long, so it does not pull out if strain is applied.



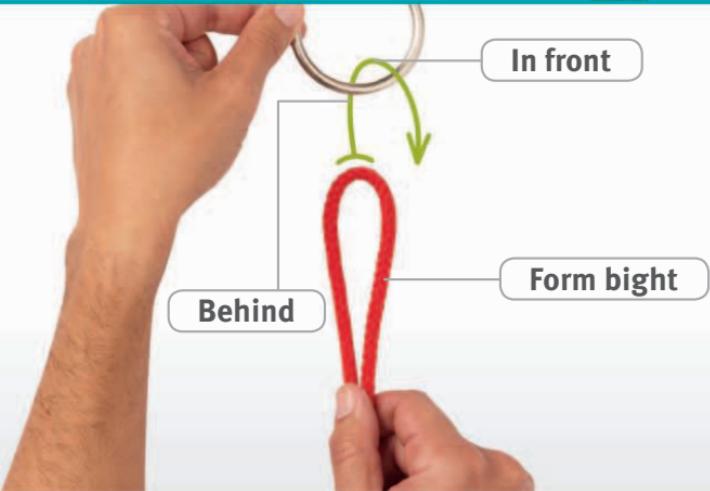


Cow Hitch with Toggle

- Variation of a Cow Hitch (see pp.190–91) used when there is no access to the working end of the rope.
- Remove the toggle for quick release.



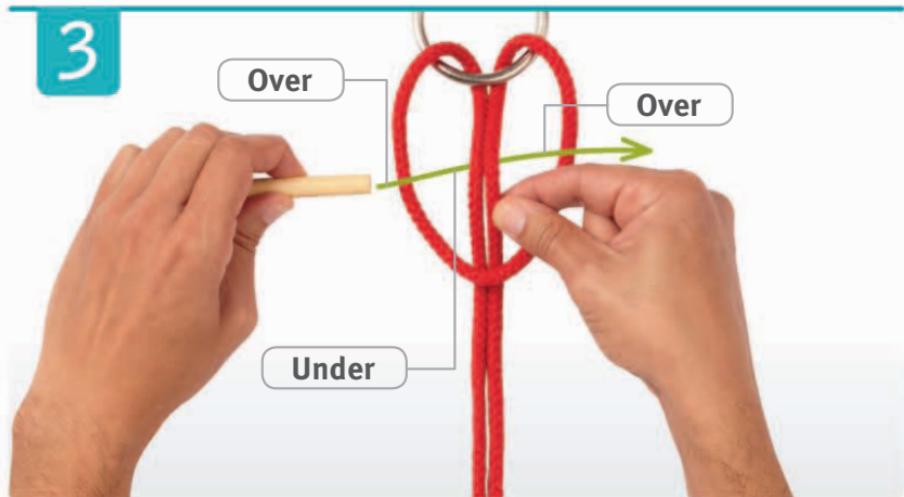
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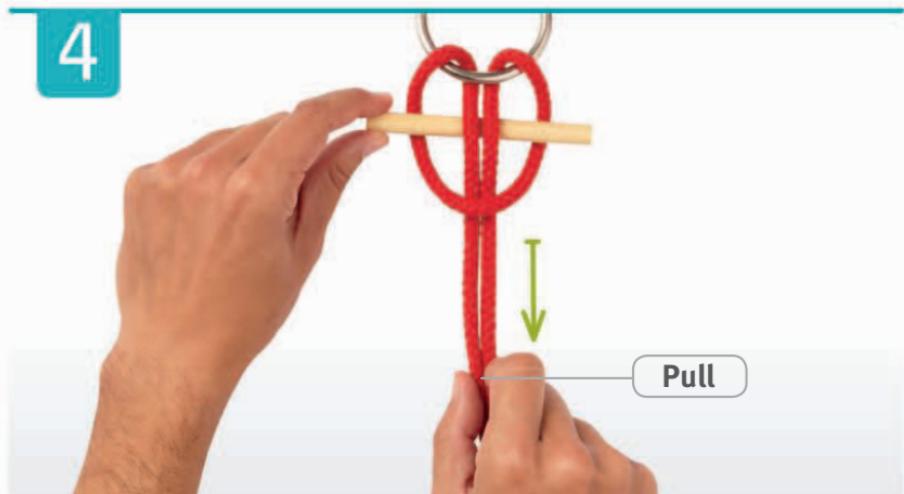
2



3



4



5





Sheepshank

- Used to shorten a rope without cutting it and to relieve the strain on worn-out parts of a rope.
- Ensure that the rope is taut to avoid slackening of the knot.
- Seize (see pp.387–89) the end loops to the standing parts of the rope for greater security.



1

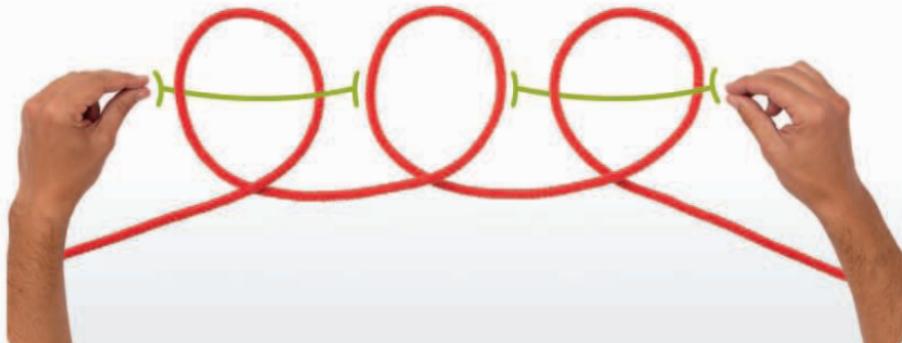
Cross under twice

Cross under



2

Reach through and grip



3

Pull through
from behindPull through
from front

4

Pull

Pull



5

Tighten to finish



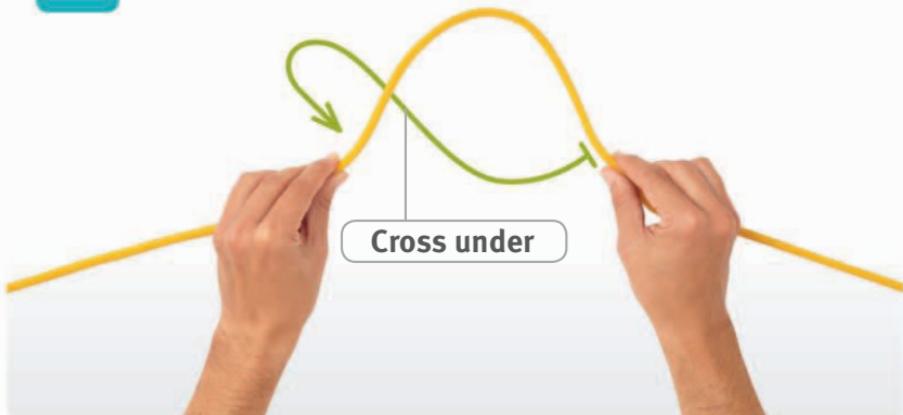


Sheepshank Man o' War

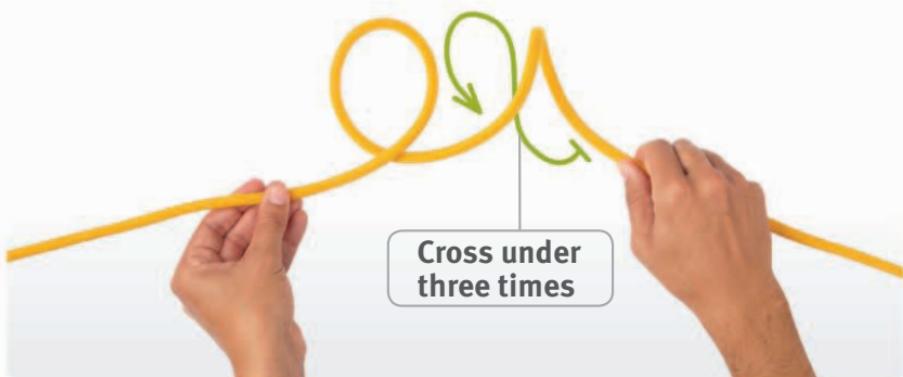
- Used to shorten a rope or to relieve tension on a worn-out part of rope.
- A secure version of the Sheepshank (*see pp.194–95*) that is easy to untie.
- Made with four half hitches (*see p.23*).
- Seize (*see pp.387–89*) the end loops to the standing parts for greater security.



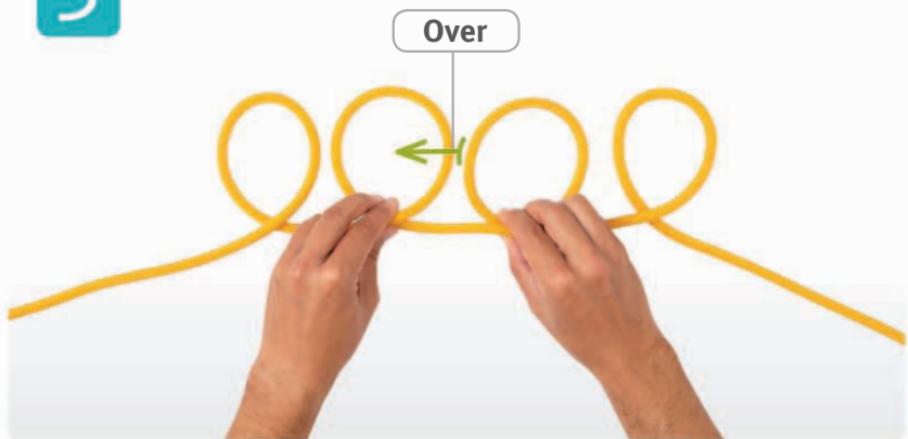
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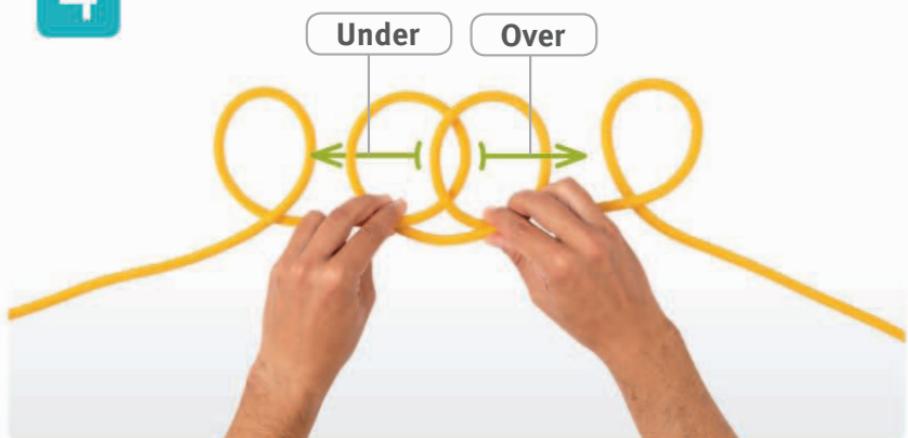
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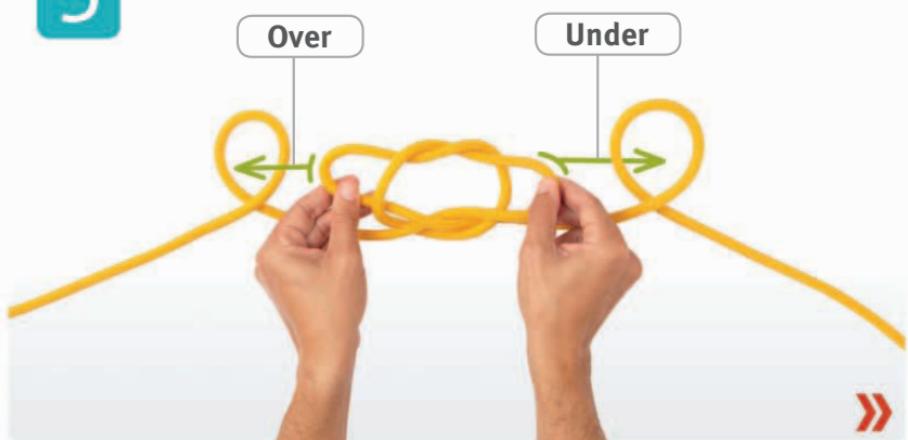
3



4



5



198 HITCHES

6

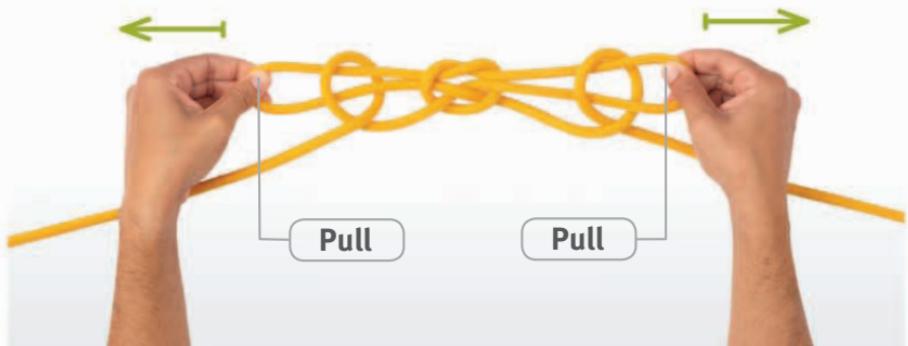
Pull through



7

Pull

Pull



8

Tighten to finish



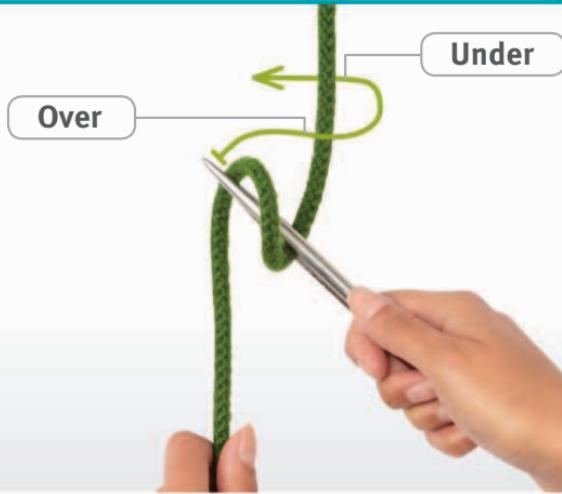


Marlinspike Hitch

- Useful for pulling on a thin line or rope.
- Quick and easy to tie—the knot disappears when the spike is removed.
- Can only be pulled in one direction.
- A marlinspike (see p.19) is not essential—will work with any type of rod or spike.



1



2

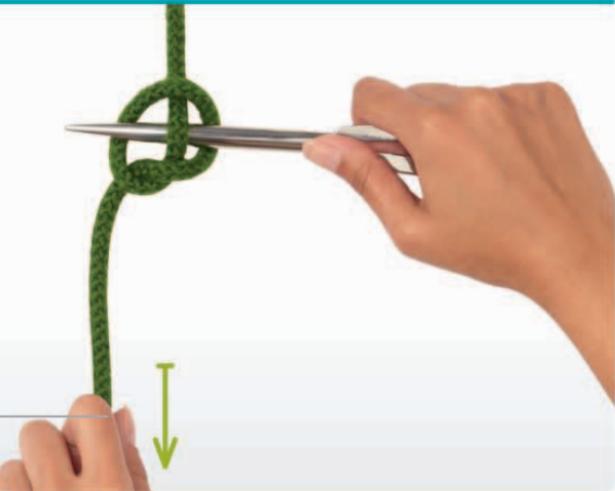


200 HITCHES

3



4



5



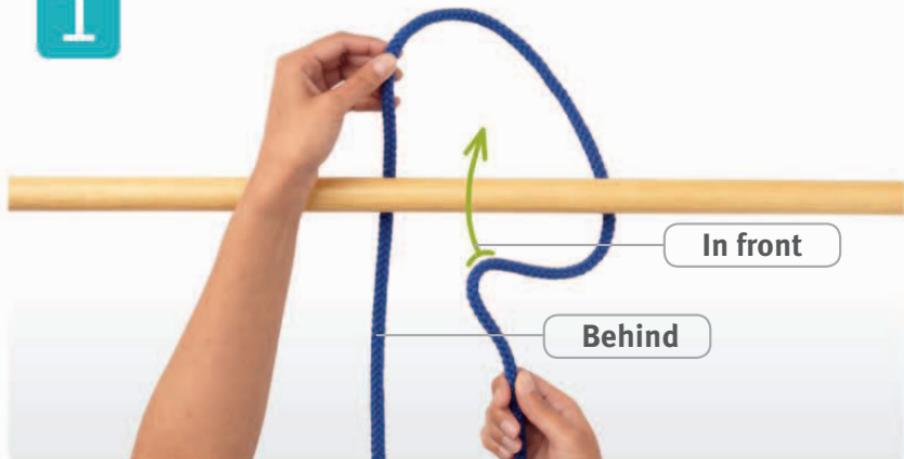


Highwayman's Hitch

- A quick-release hitch.
- Used to tether horses.
- Ensure that the strain is placed on the standing part.
- Pull the short end to release.



1



2

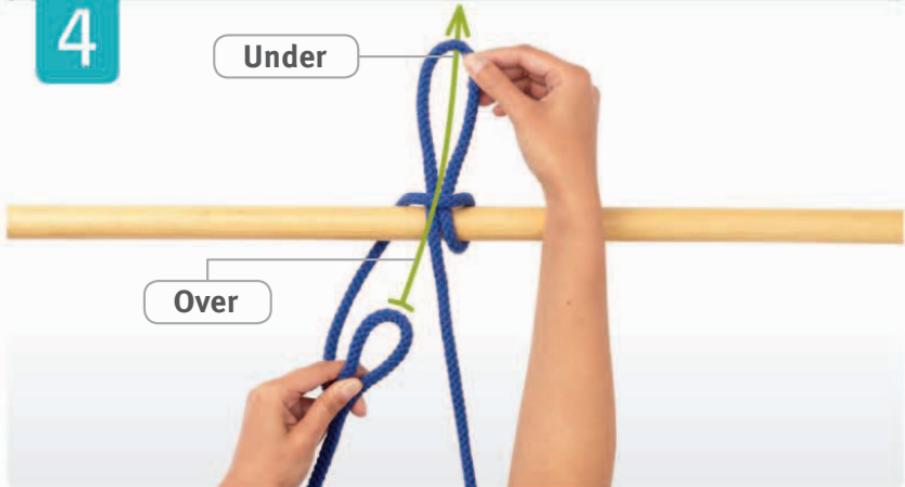


202 HITCHES

3



4



5



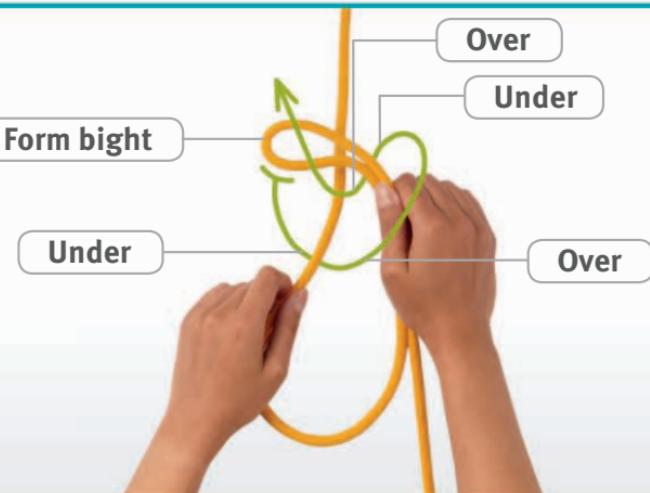


Waggoner's Hitch

- Allows strain to be put on a length of rope.
- Traditionally used to secure loads on wagons and trucks.
- Will come undone as soon as the tension is removed.
- Constant use of this hitch in the same place on the rope can lead to rapid wear.



1



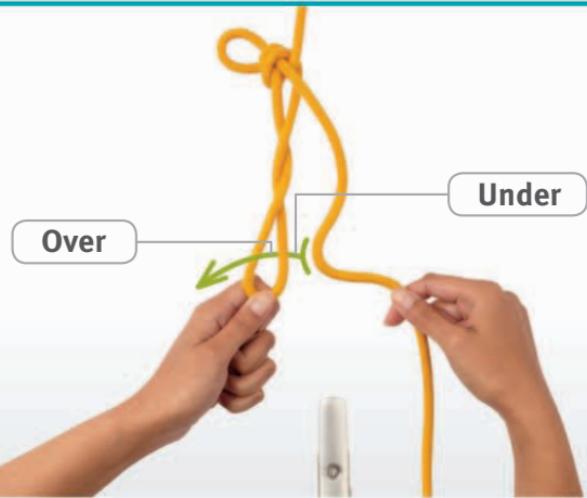
2

Twist twice

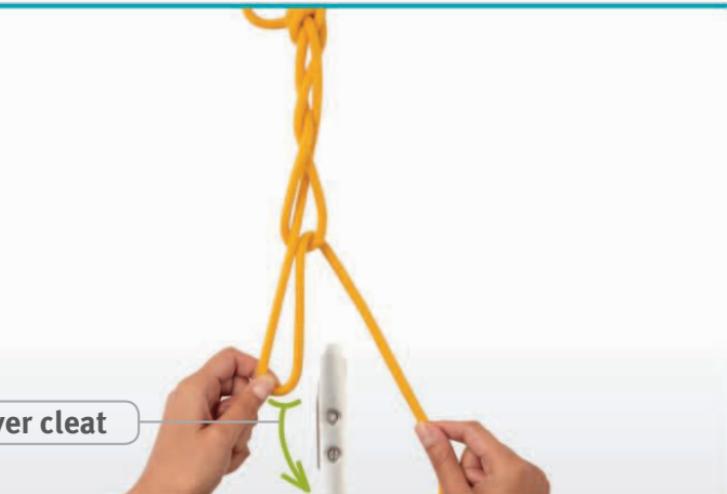


204 HITCHES

3



4



5





Snelling a Hook

- Used to bind a fishing line to a hook.
- Can also be used to attach a line to a hook without an eye, known as a spade-ended hook.
- Moisten the nylon line to help draw it tight.



1

Thread line through hook

In front

Behind

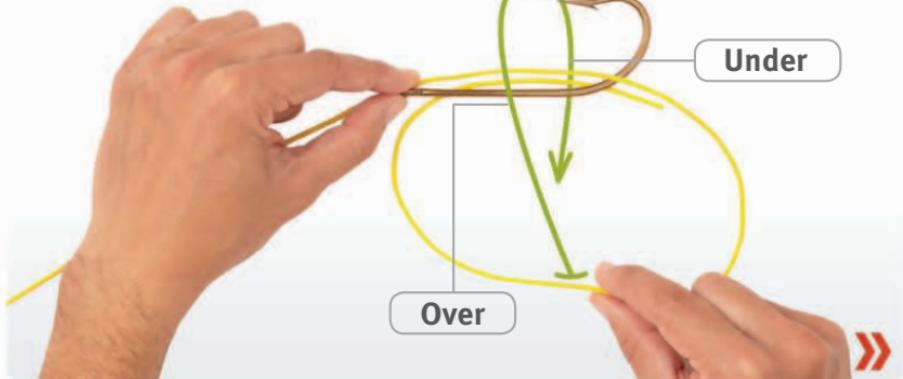
Behind



2

Under

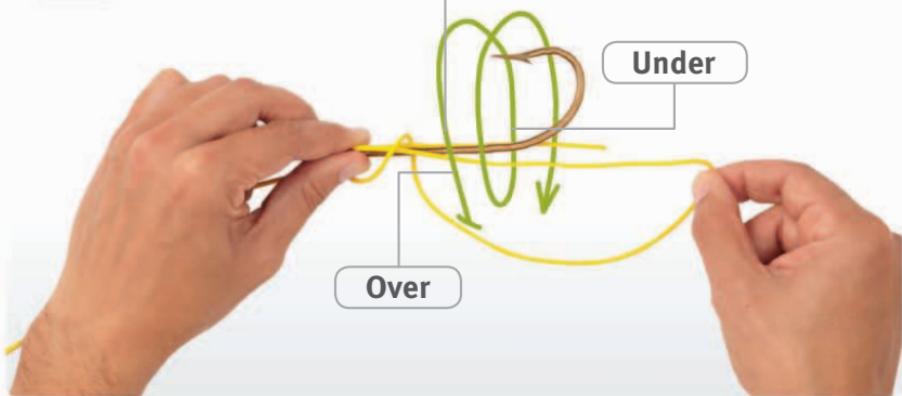
Over



206 HITCHES

3

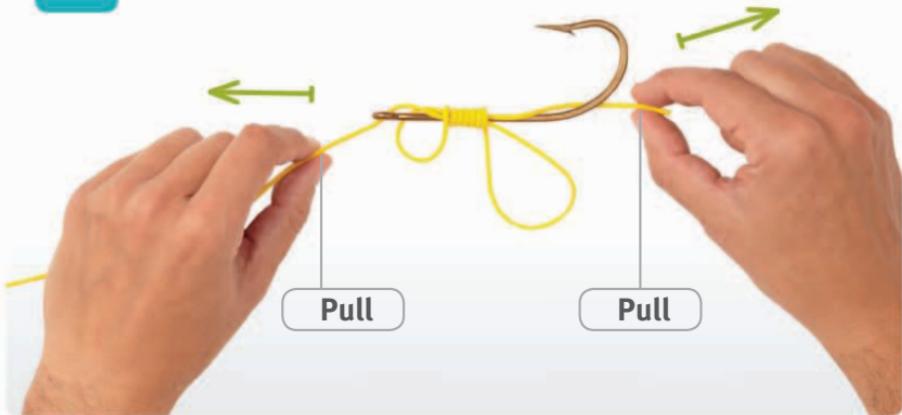
Wrap around several times



4

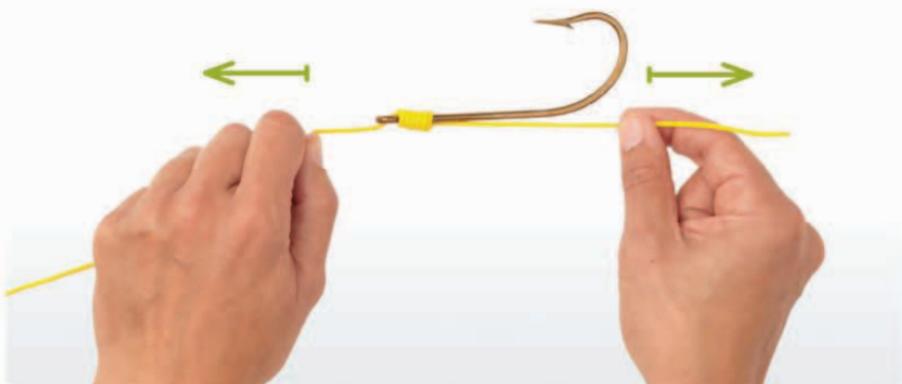
Pull

Pull



5

Tighten to finish



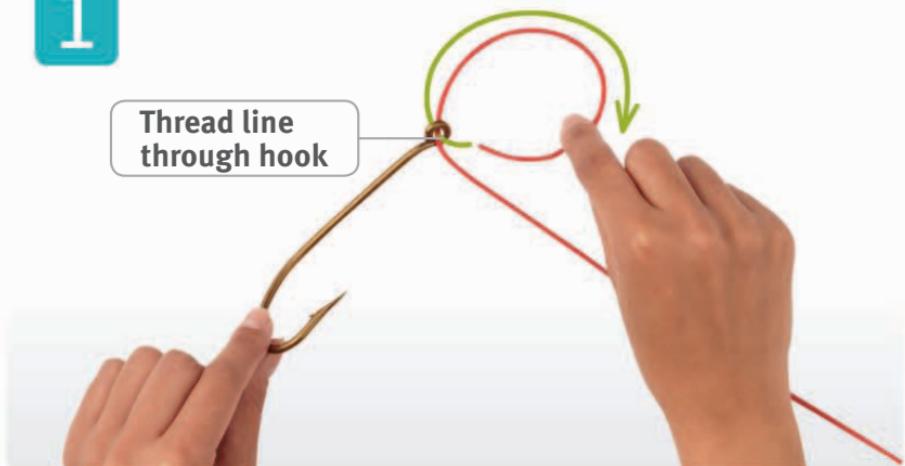


Clinch Knot

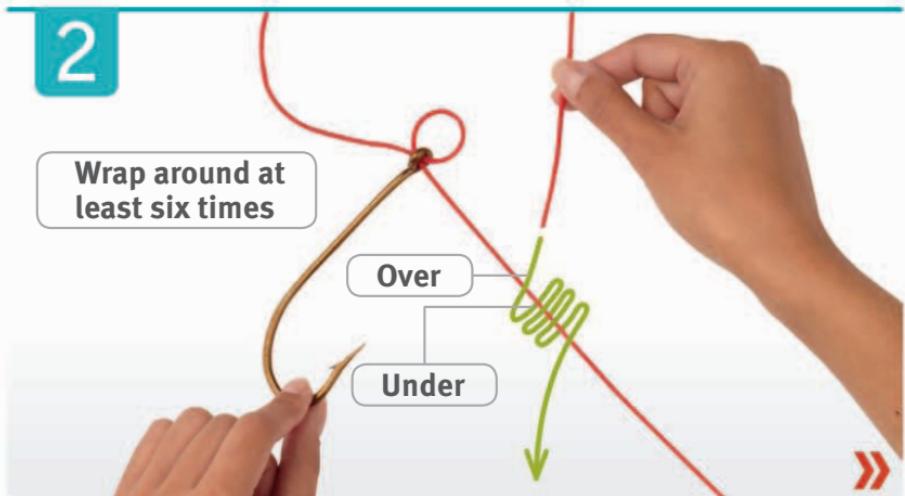
- Used to tie fishing line to the eye of a hook.
- For thicker lines, wrap around four times only.
- Moisten the line before working the knot into shape.



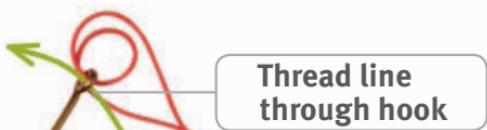
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2



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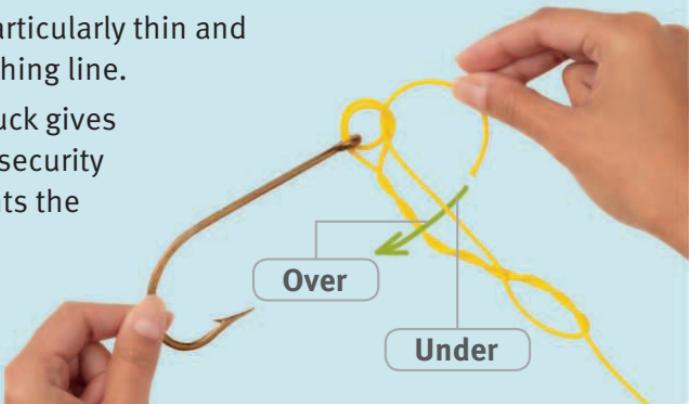
4

Tighten and trim to finish



Improved Clinch Knot

- Used for particularly thin and slippery fishing line.
- The extra tuck gives additional security and prevents the knot from coming undone.





Palomar Knot

- Used to secure a fishing line to a hook or lure.
- A strong knot that works with slippery nylon line.
- Difficult to untie.
- Moisten the line to help draw it tight.



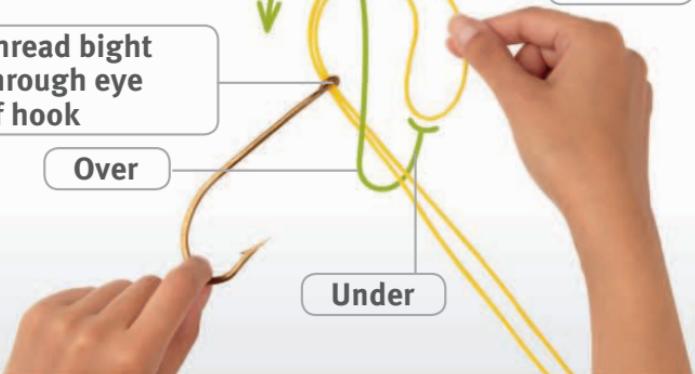
1

Thread bight through eye of hook

Over

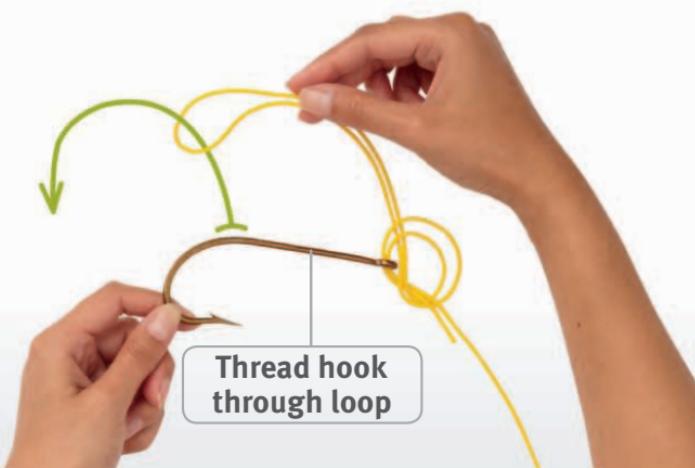
Under

Under



2

Thread hook through loop



210 HITCHES

3



4



5

Tighten to finish





Square Lashing

- Used to lash together two poles crossing at right angles.
- Pull tight each turn before proceeding to the next one.
- Start and finish with a Clove Hitch (see pp.105–06).
- Ensure that the first Clove Hitch is tied below the horizontal pole.

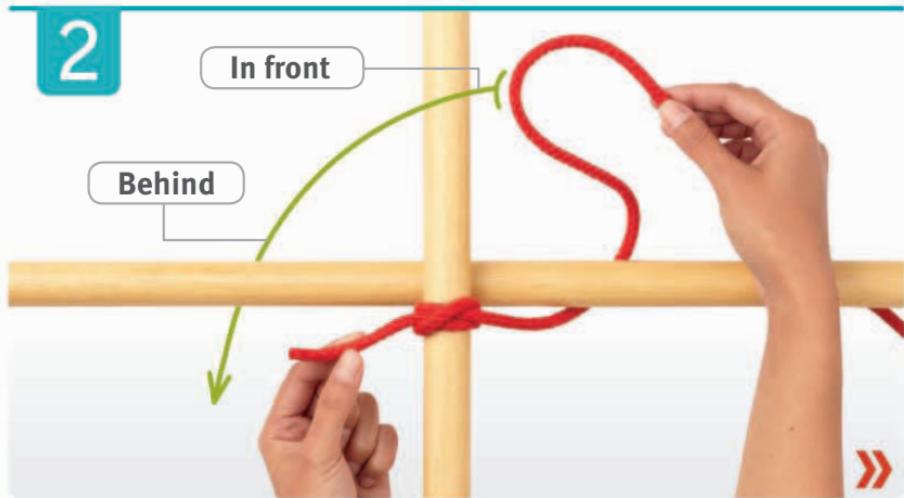


1

TIE A CLOVE HITCH (»pp.105–06)

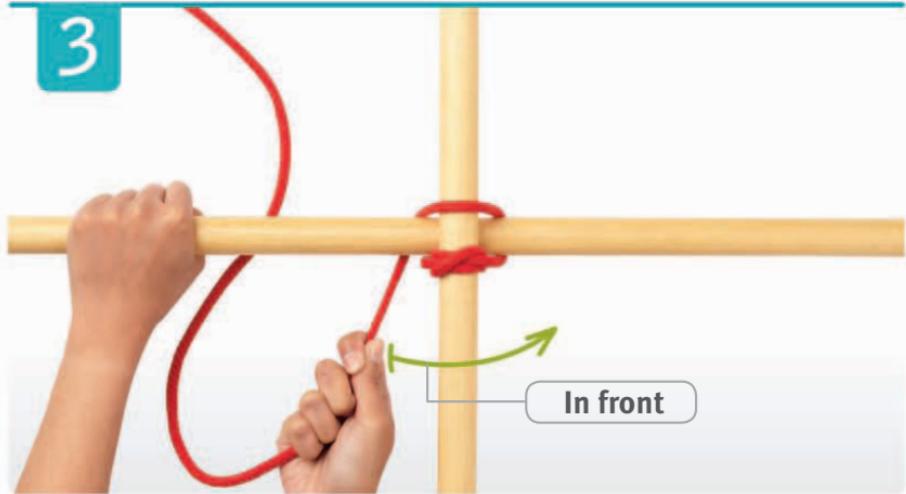


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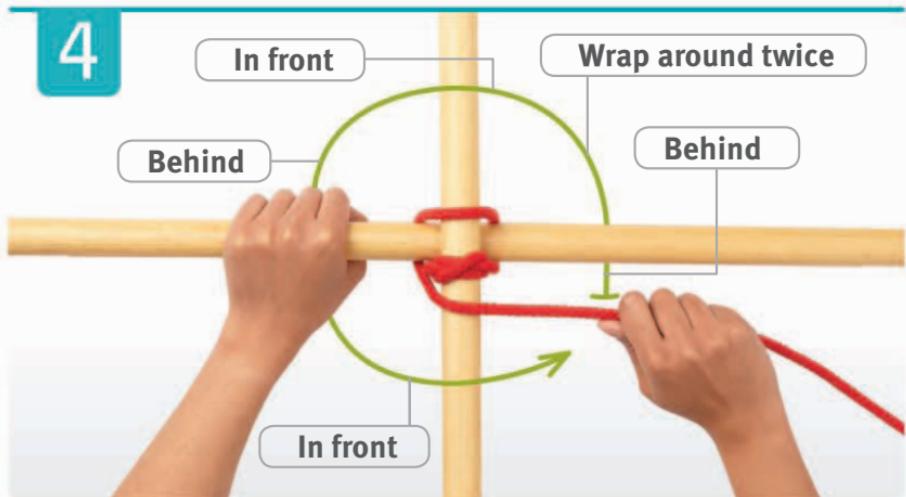


212 HITCHES

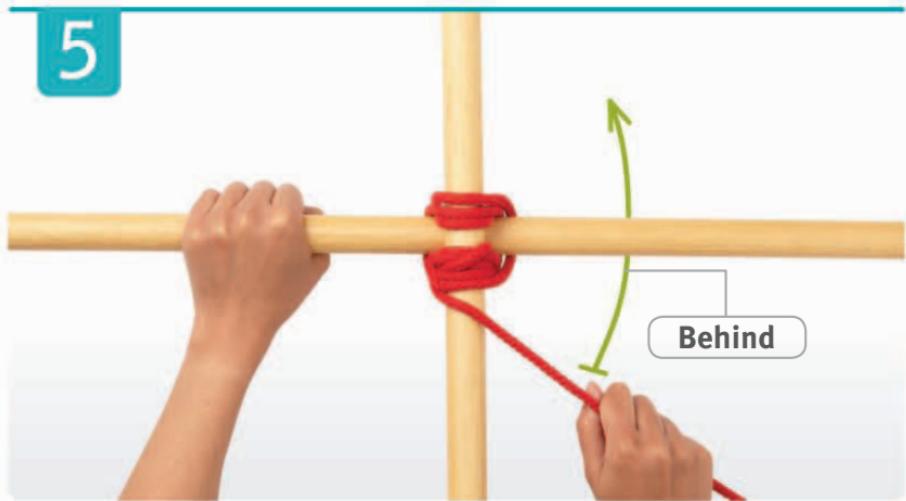
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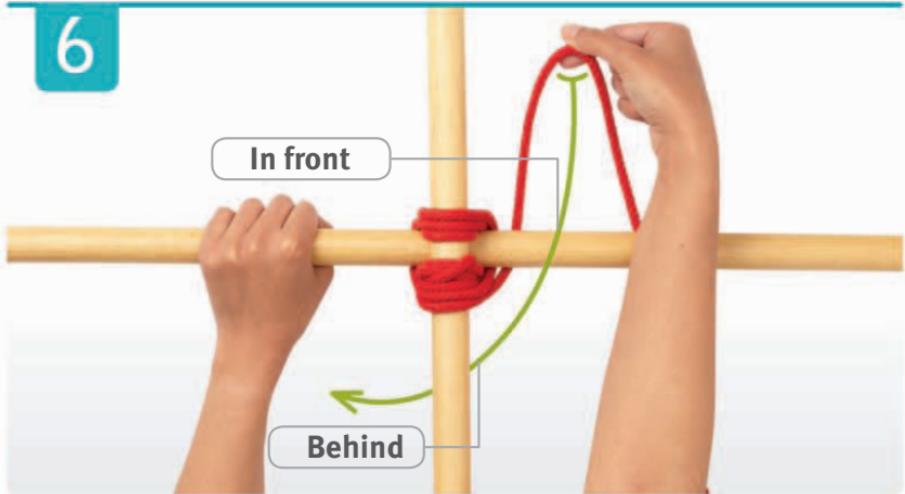
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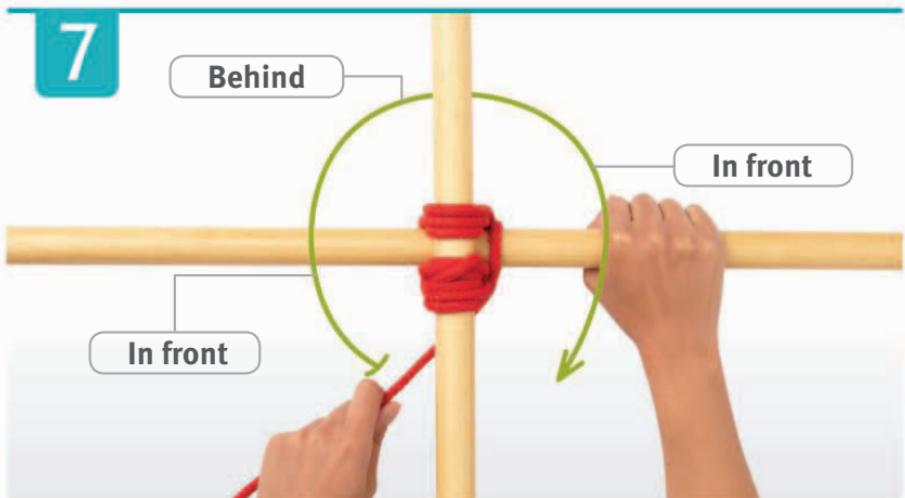
5



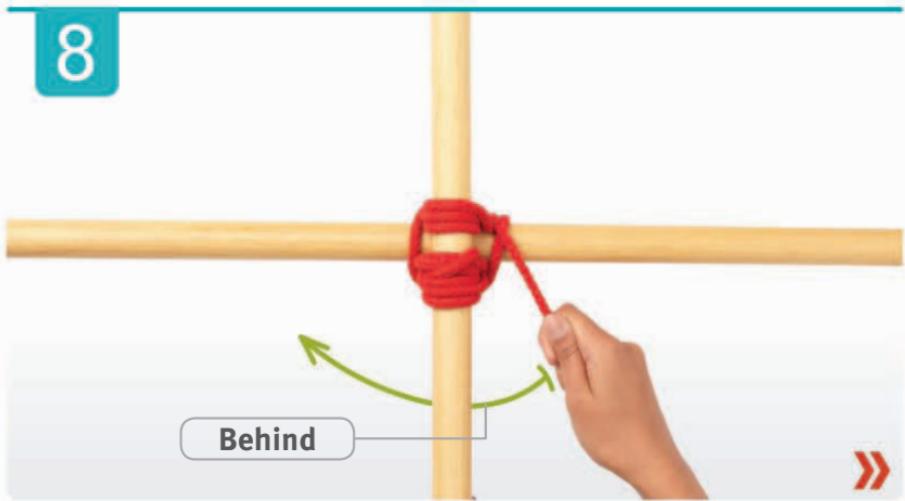
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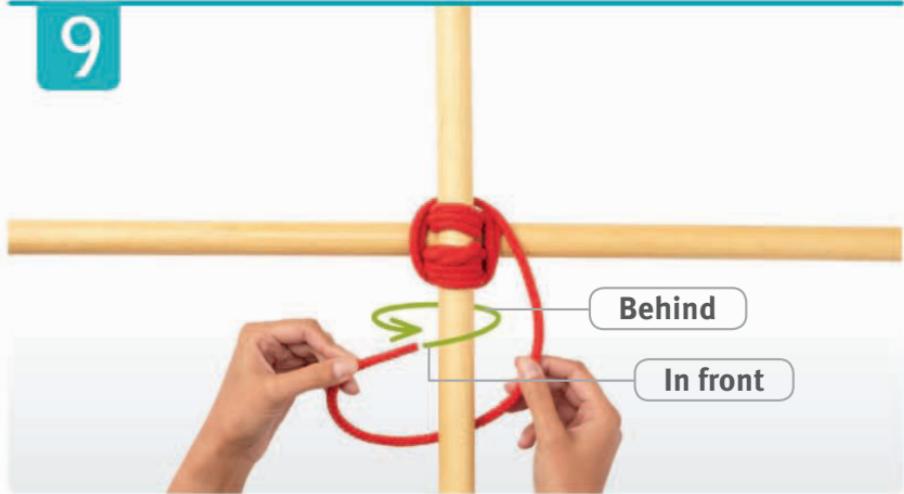


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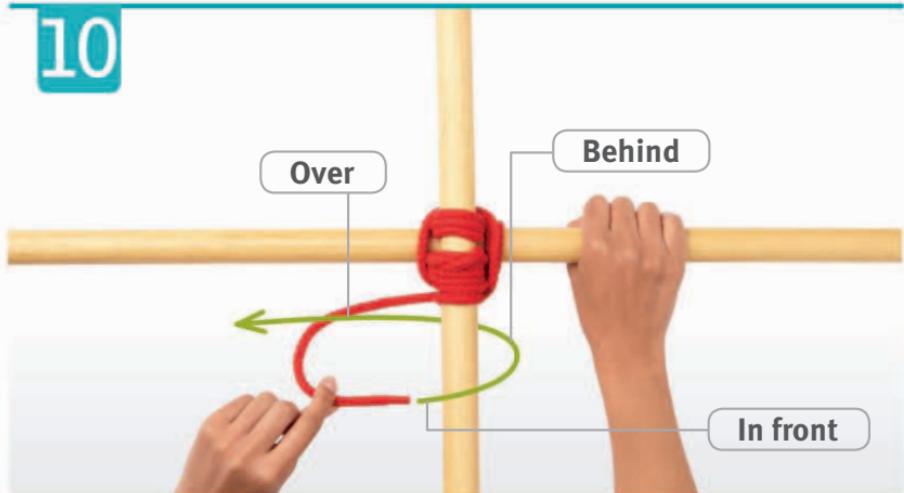


214 HITCHES

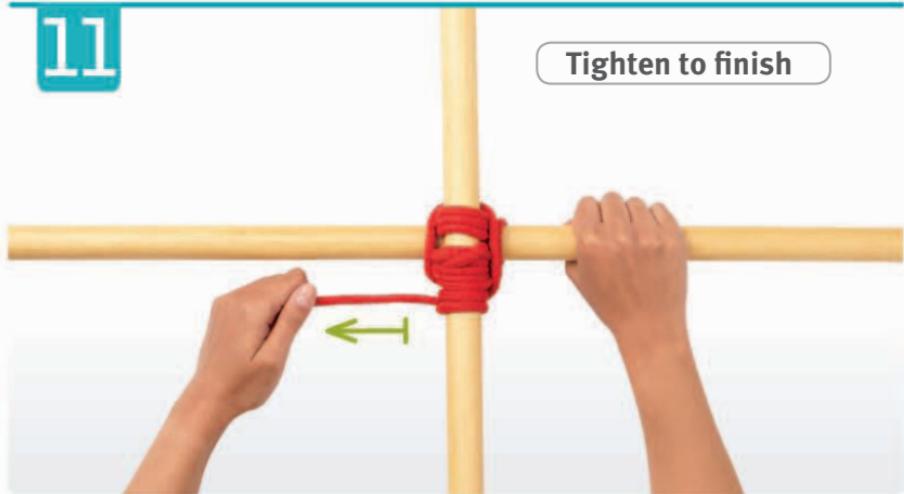
9



10



11





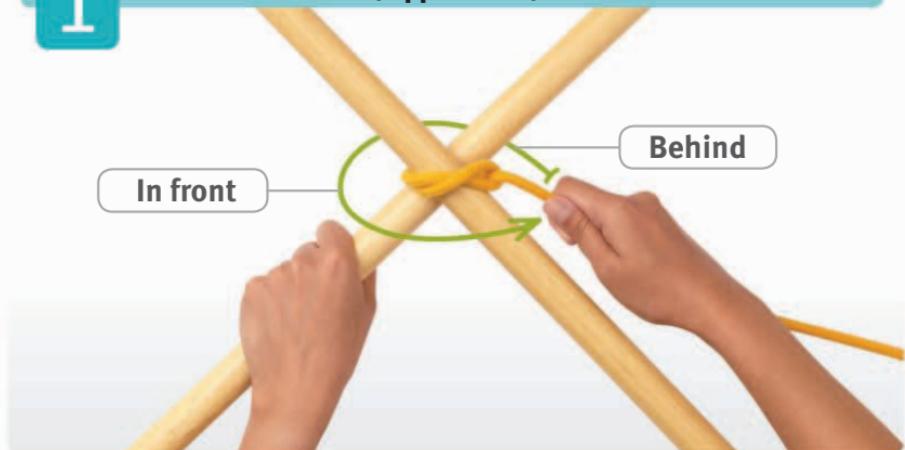
Diagonal Lashing

- Used to lash together two diagonal poles.
- Before you start, make sure there is enough rope to complete the lashing.
- Tighten with two turns across the lashing (frapping turns).
- Finish with a Clove Hitch (see pp.105–06).

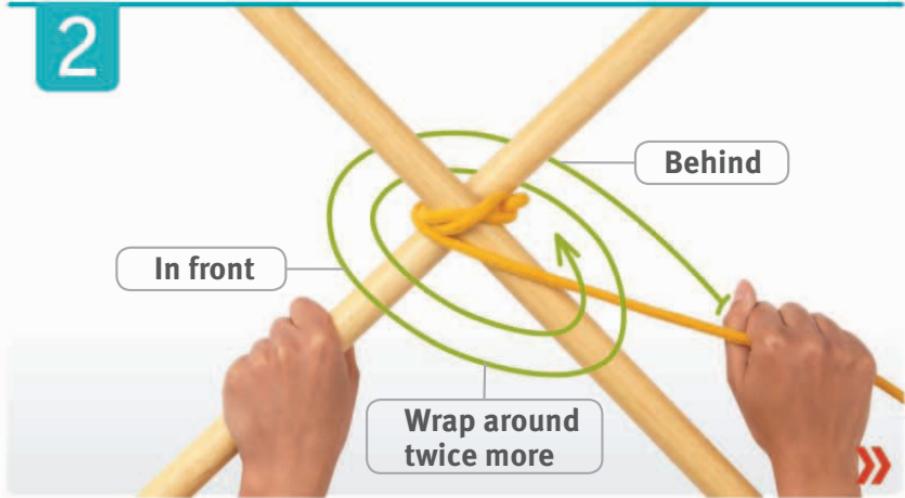


1

TIE A TIMBER HITCH (»pp.111–13)

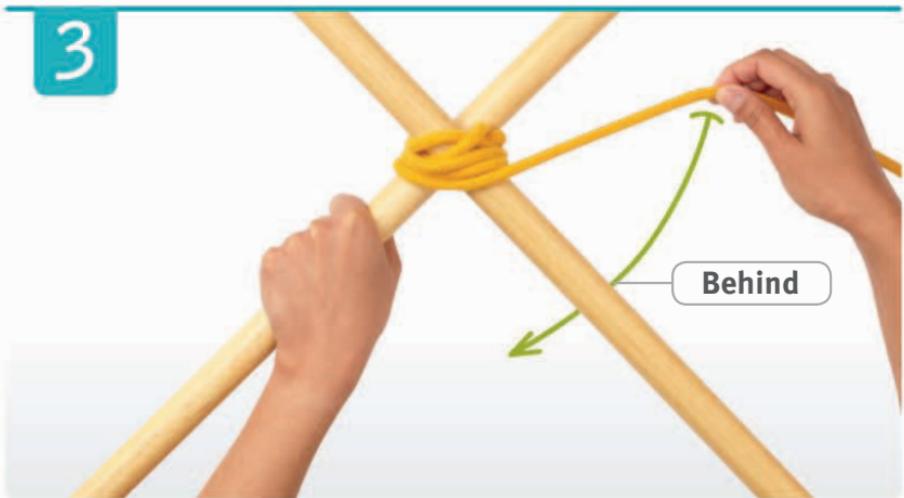


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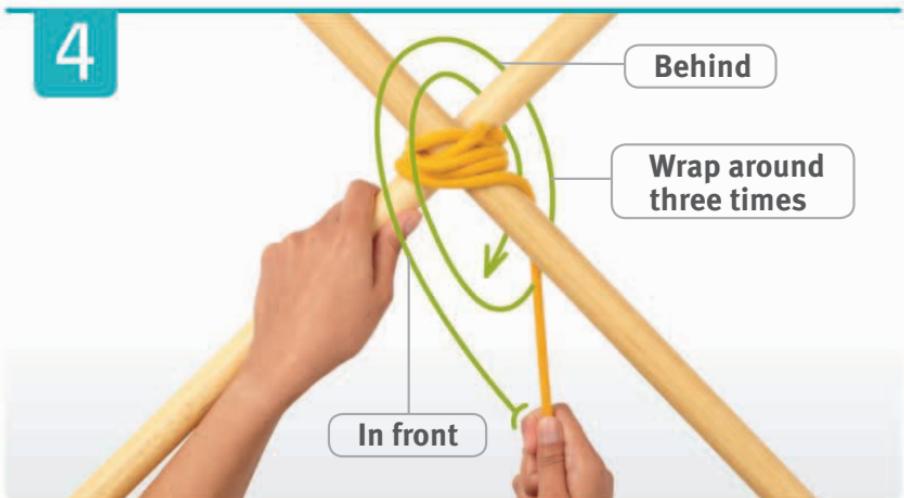


216 HITCHES

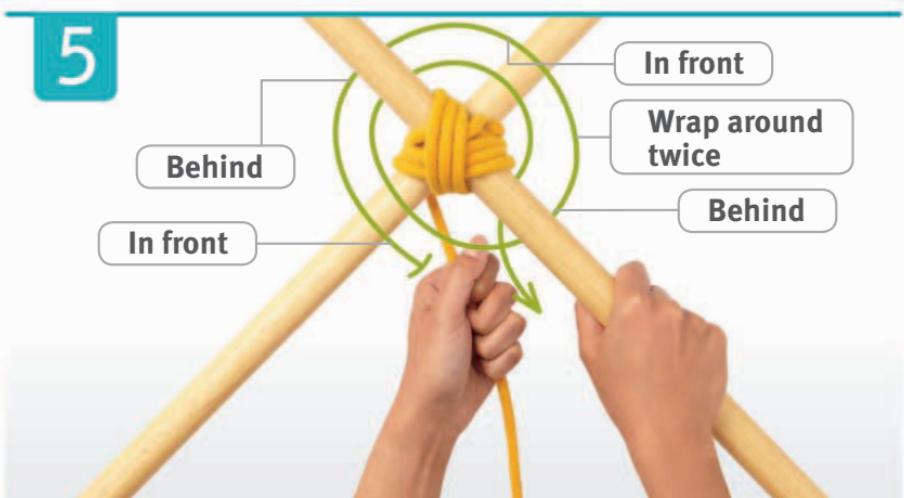
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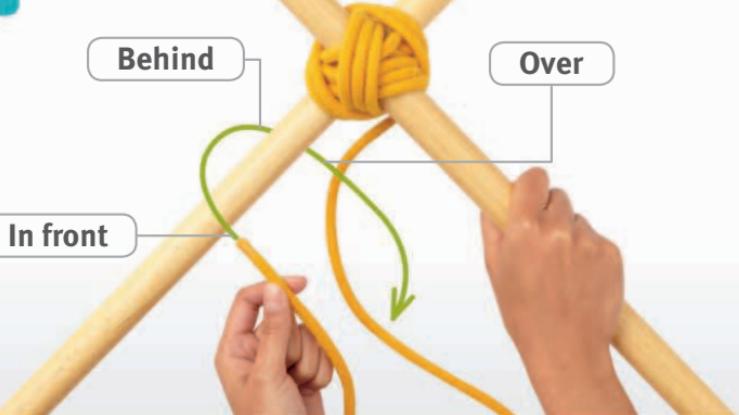
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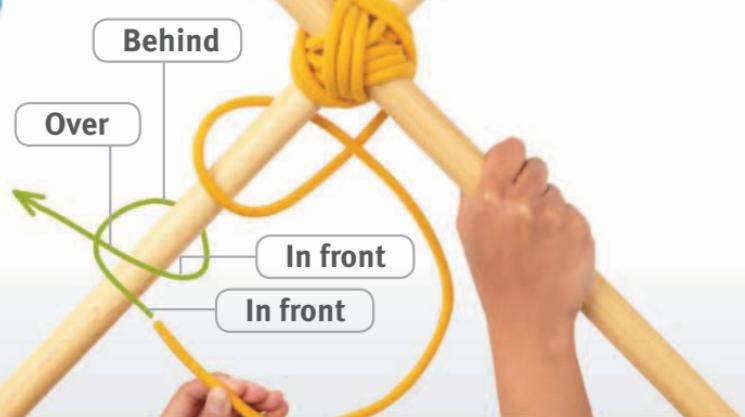
5



6



7



8





BEST FOR ...

Gardening

There are several uses for knots around the garden, from simple jobs like tying a plant to a support, to bigger tasks such as lashing canes together to make a trellis or fixing a swing to a tree.

Constrictor Knot

» pp.109–10

 Good for fixing a hose in position if you do not have a hose clip.

 Can also be used to draw together a bundle of objects such as logs.

 Difficult to untie once it has been put under strain—it may need to be cut.



Similar knots:
 » pp.105–06
 Clove Hitch
 » pp.114–16
 Boa Knot

Sheer Lashing

» pp.222–23

 The perfect knot for tying two canes together to make a support for a plant.

 Can also be used with thinner line to tie a sapling to a support post.



Similar knots:
 » pp.211–14
 Square Lashing
 » pp.215–17
 Diagonal Lashing

Round Turn and Two Half Hitches » pp.180–81

- ✓ Useful for tying a line to a ring or post.
- ✓ Can also be used to tie a swing to a tree branch.
- ✗ If used for a swing, padding may need to be placed under the rope to protect the tree.



Similar knots:
 » pp.182–83
Buntline Hitch
 » pp.184–85
Fisherman's Bend

Square Lashing

» pp.211–14

- ✓ Good for making support frames for vegetables such as beans or tomatoes.
- ✓ Can also be used to make a trellis.
- ✓ Add frapping turns to make the knot more secure.



Similar knots:
 » pp.215–17
Diagonal Lashing
 » pp.222–23
Sheer Lashing



Timber Hitch

» p.111–13

✓ A good hitch for tying up bundles of branches, because its tightening action increases with strain.

✓ Can be finished with a half hitch for extra security when dragging larger loads, or transporting a bundle over a long distance.



Similar knots:
» pp.109–10
Constrictor Knot

Sheet Bend

» pp.140–41

✓ Best used for joining ropes together because it is quick and easy to tie, and unlikely to untie accidentally.

✗ A Double Sheet Bend is required when joining ropes of different diameters.



Similar knots:
» pp.105–06
Clove Hitch
» pp.144–45
Double Sheet Bend
» pp.157–59
Fisherman's Knot





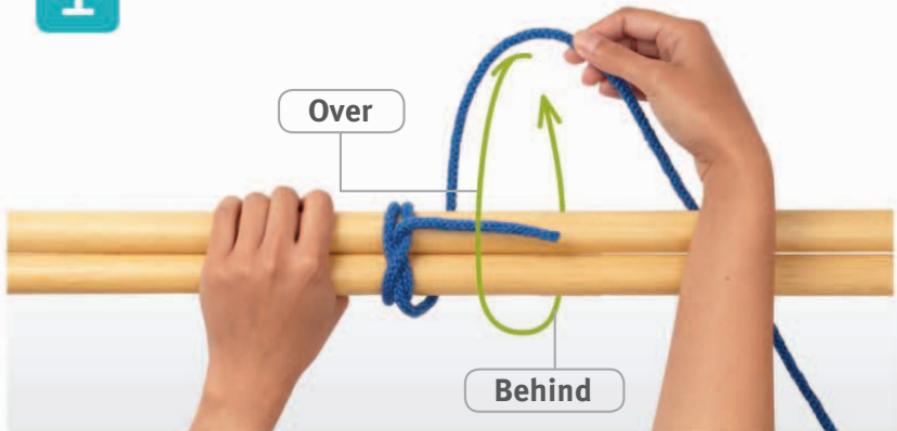
Sheer Lashing

- Used for lashing together adjacent poles.
- Also used to reinforce a weak pole.
- Tighten by making two turns across the lashing (frapping turns).
- Start and finish with a Clove Hitch (see pp.105–06).
- Ensure the first Clove Hitch is tied around both poles.

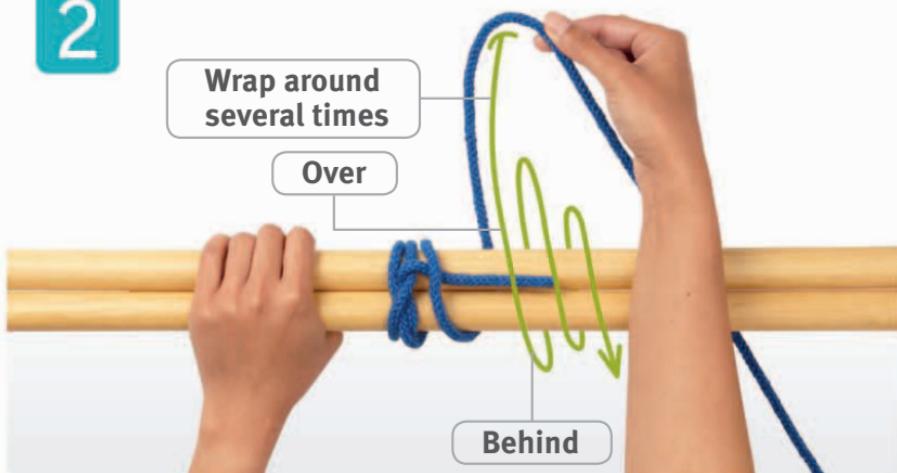


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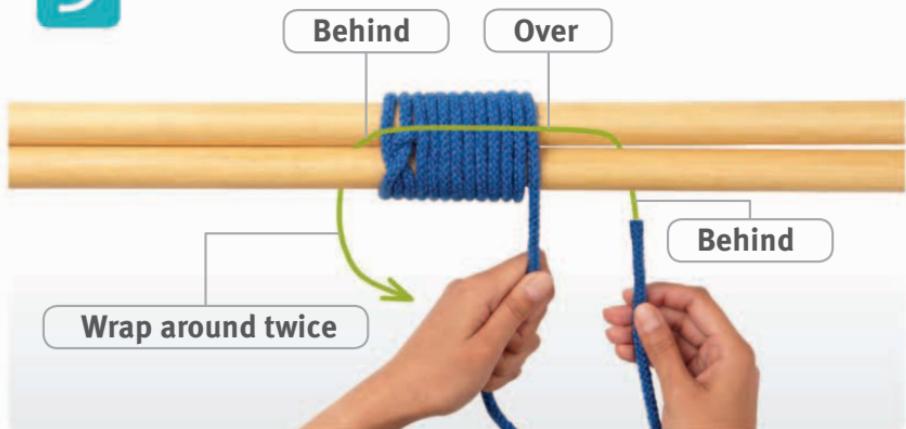
TIE A CLOVE HITCH (»pp.105–06)



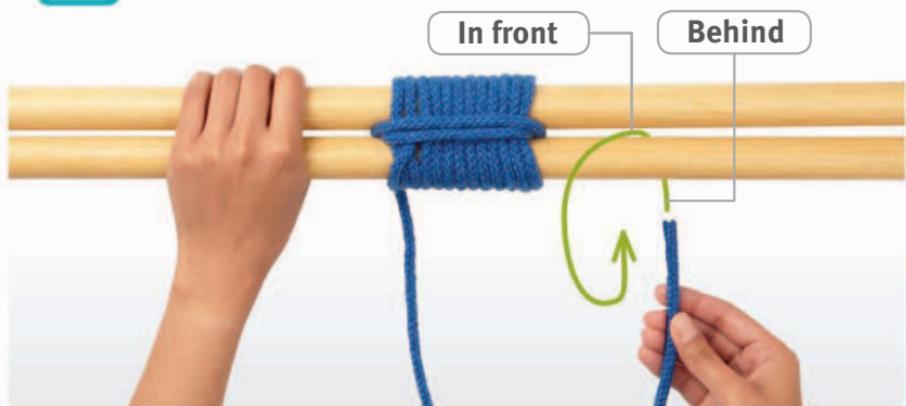
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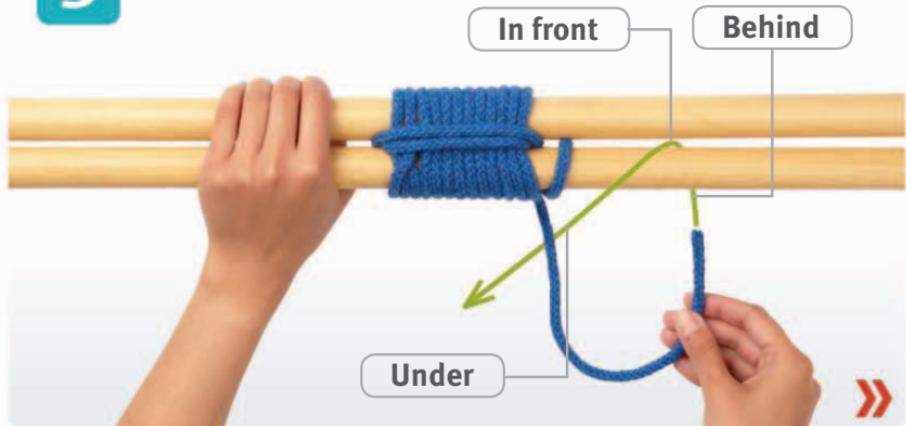
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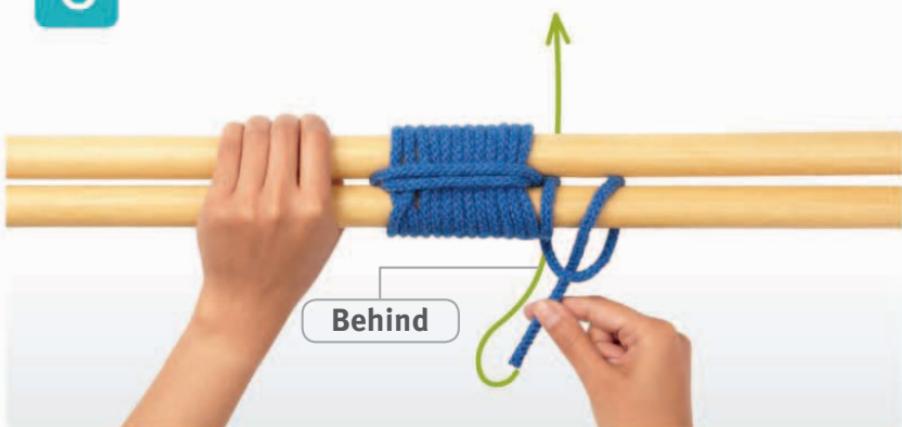
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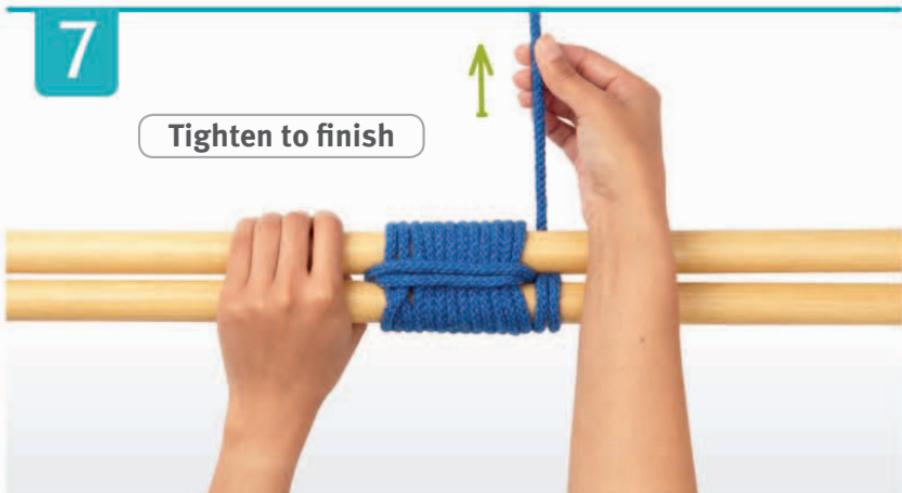


6



7

Tighten to finish



A-Frame Lashing

- Follows the same process as a Sheer Lashing (see pp.222–24).
- Can be used to form the legs of a rope bridge.
- Make the turns looser, so the poles can be pulled into an "A" shape.



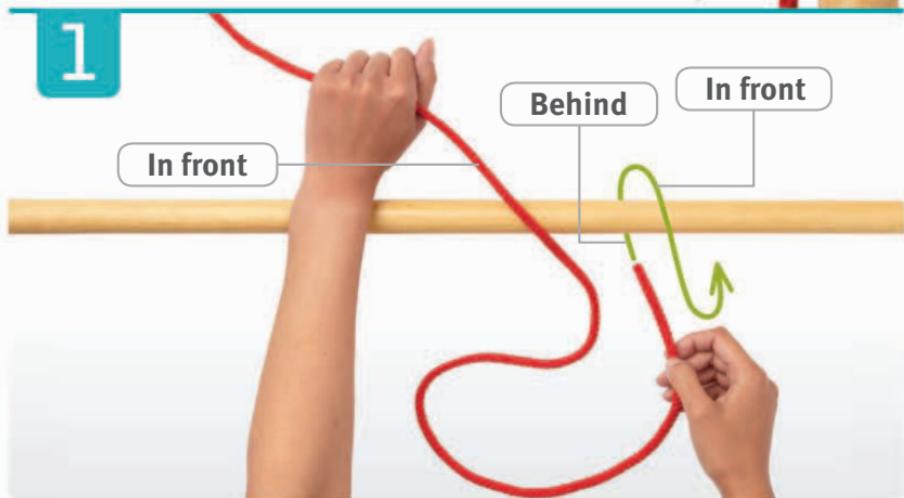


Icicle Hitch

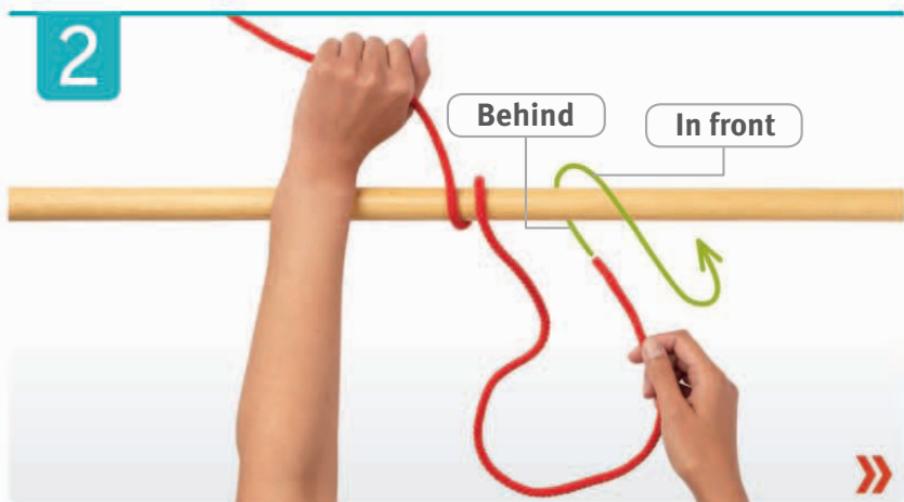
- More grip than the Rolling Hitch (see pp.176–77).
- Good for use on slippery surfaces.
- For additional grip, add extra turns at the start of the knot.
- Ensure that the first series of turns are locked under the diagonal turn.
- For increased security, hold the line with your hand as strain is applied.



1

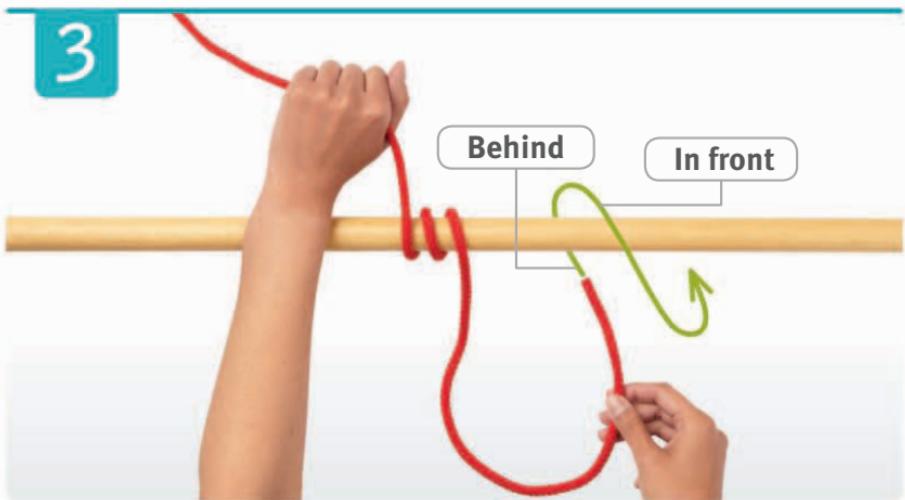


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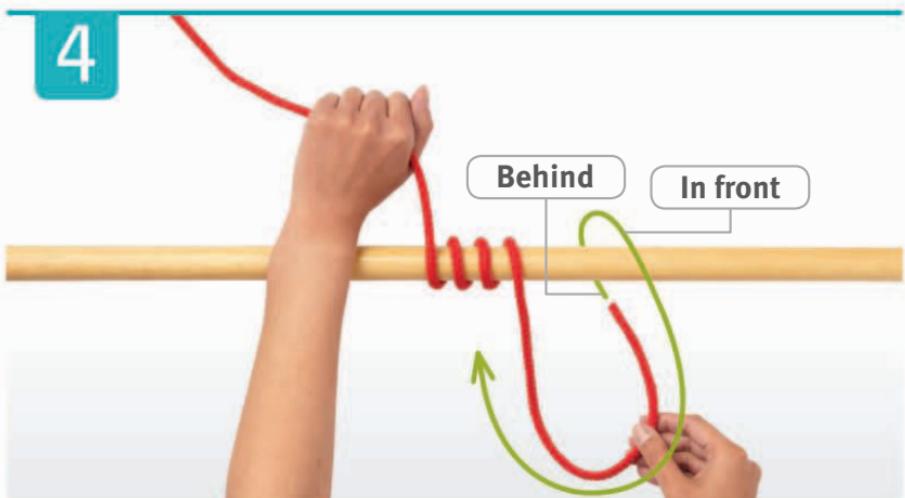


226 HITCHES

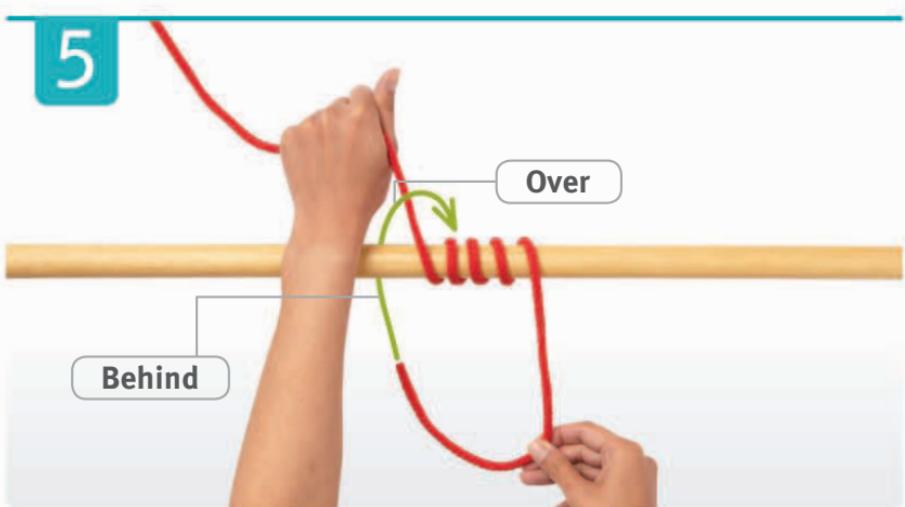
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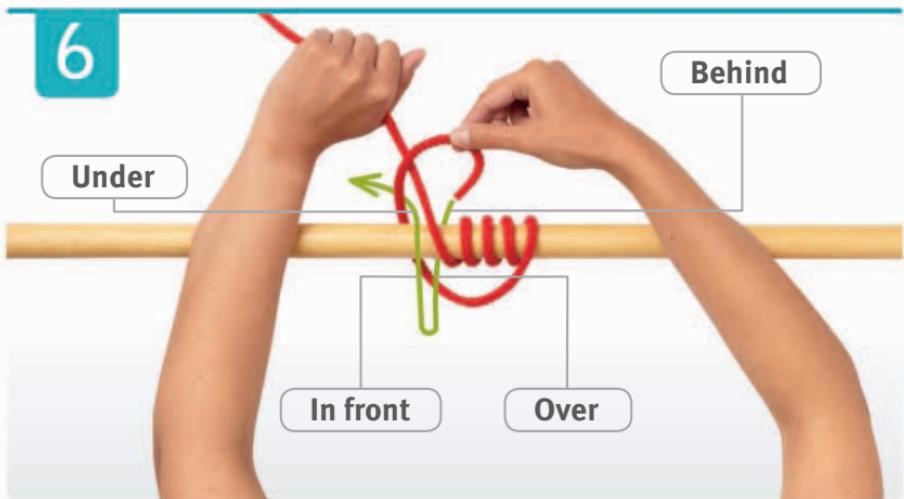
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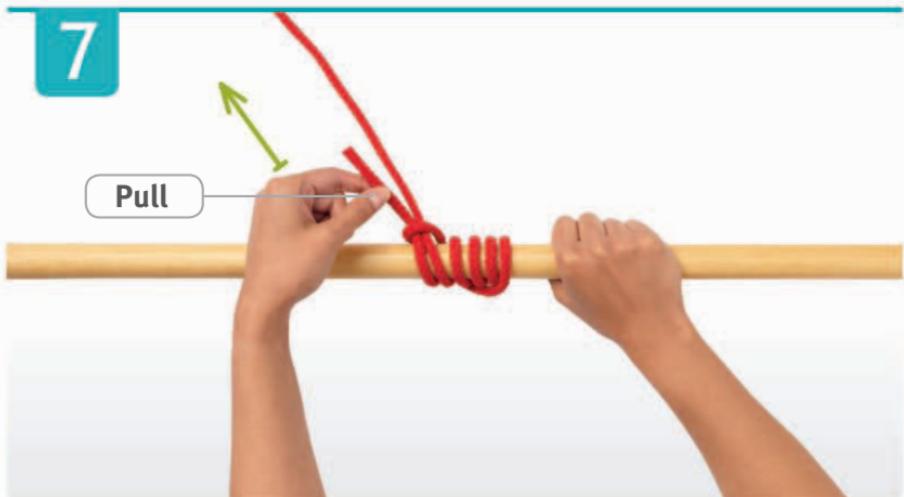
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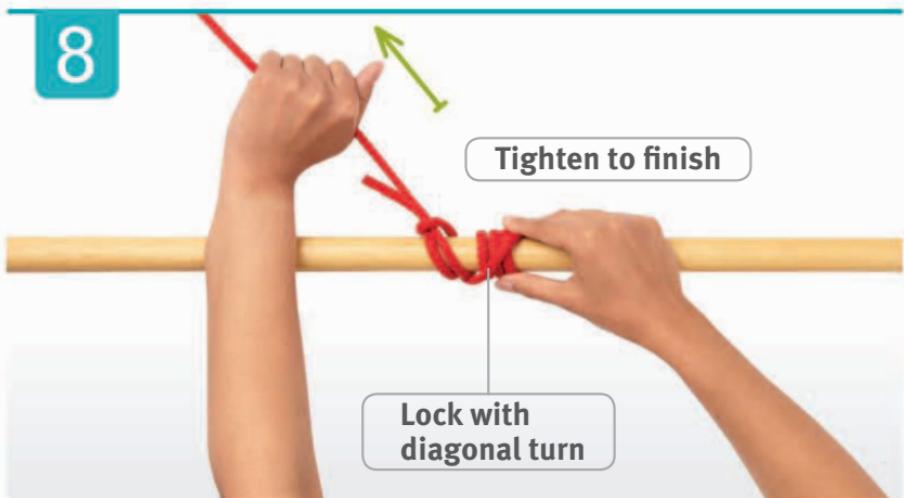
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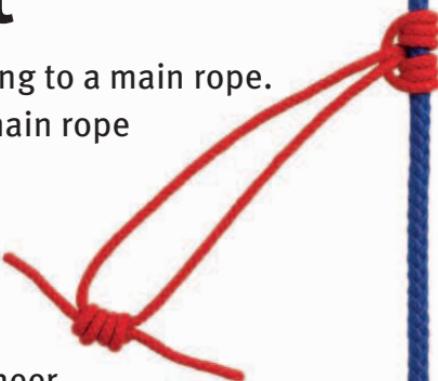
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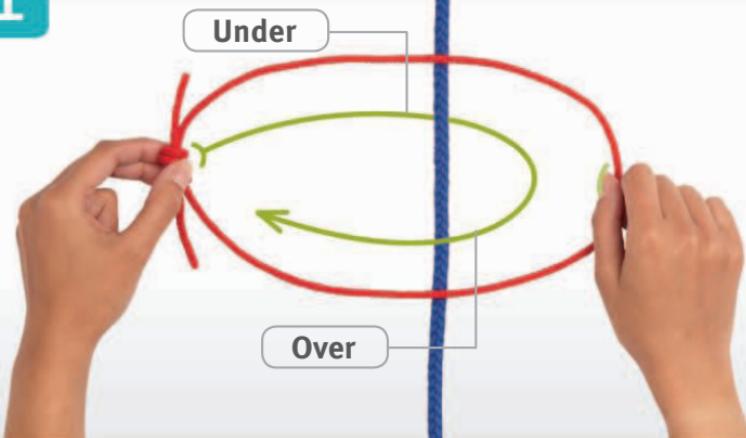
Prusik Knot

- Used to attach a climbing sling to a main rope.
- Will slide up and down the main rope when strain is removed.
- Sling should be half the diameter of the main rope at most.
- Created in 1931 by Dr. Carl Prusik, an Austrian mountaineer.

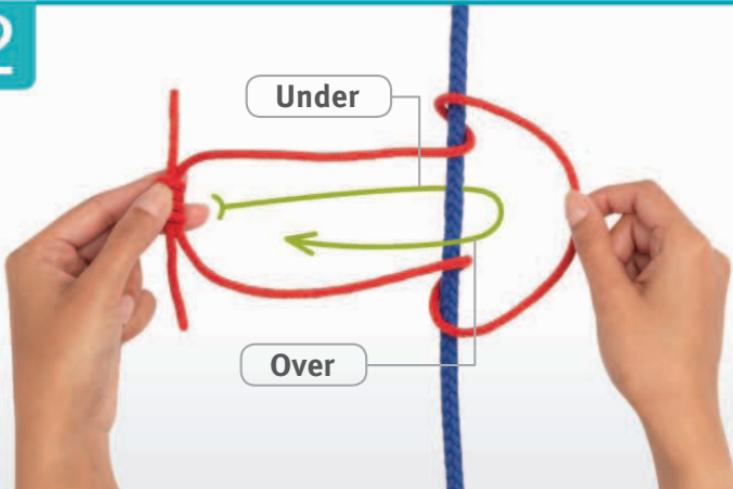


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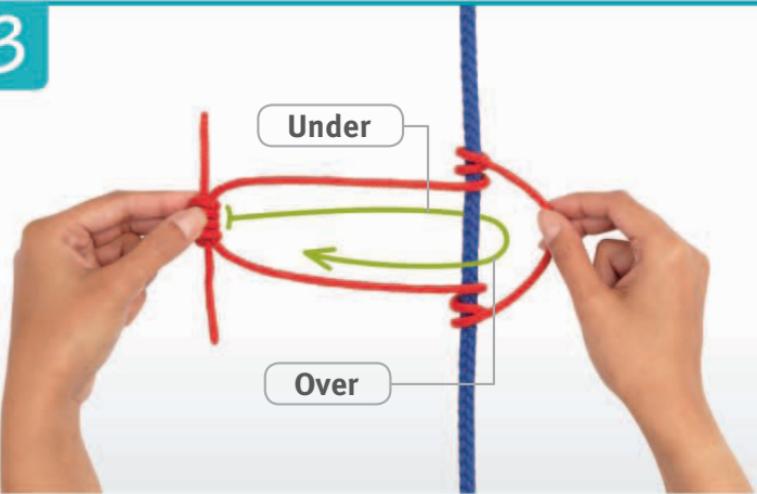
FORM A SLING WITH A DOUBLE FISHERMAN'S KNOT (»pp.160–63)



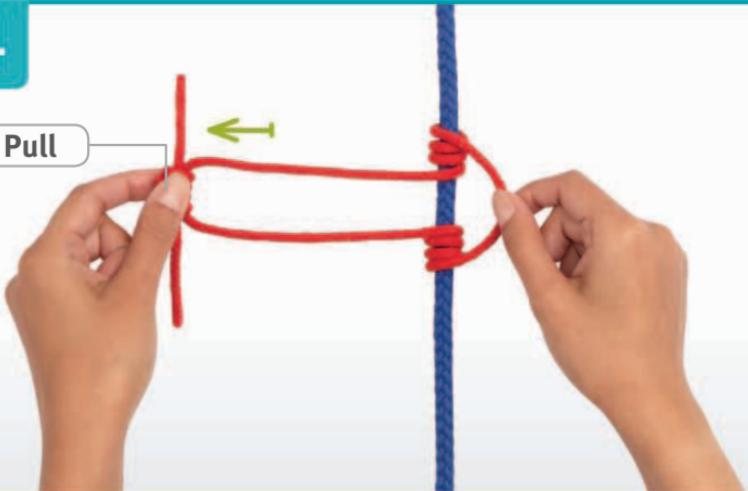
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3



4



5

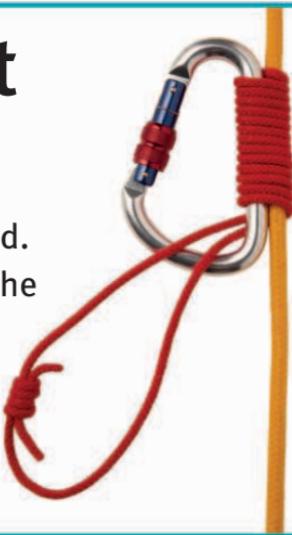
Tighten to finish





Bachmann Knot

- Used by climbers to ascend a fixed rope.
- Grips the rope tightly when loaded.
- Strain should only be applied to the sling, not the carabiner.
- Use the carabiner to move up and down the rope when there is no strain on the sling.



1

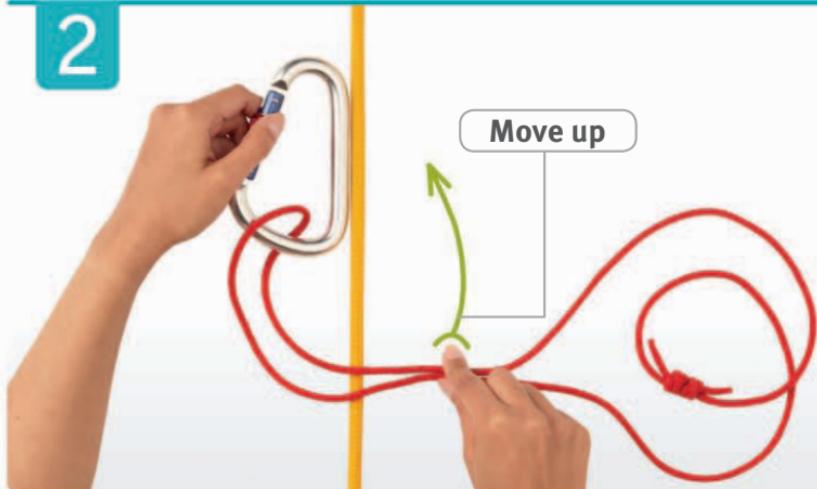
FORM A SLING WITH A DOUBLE FISHERMAN'S KNOT (pp.160–63)

Place in carabiner



2

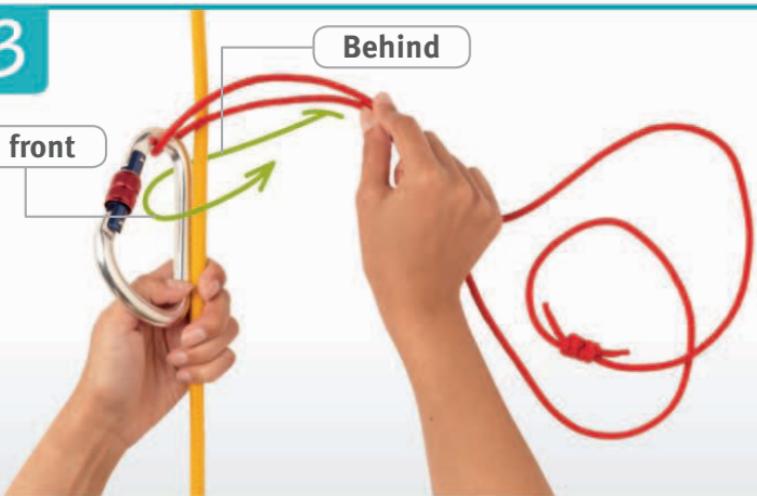
Move up



3

In front

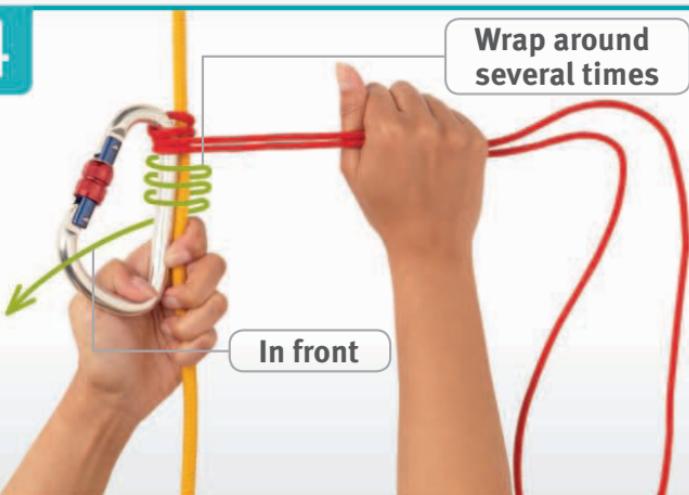
Behind



4

In front

Wrap around several times



5

Tighten to finish





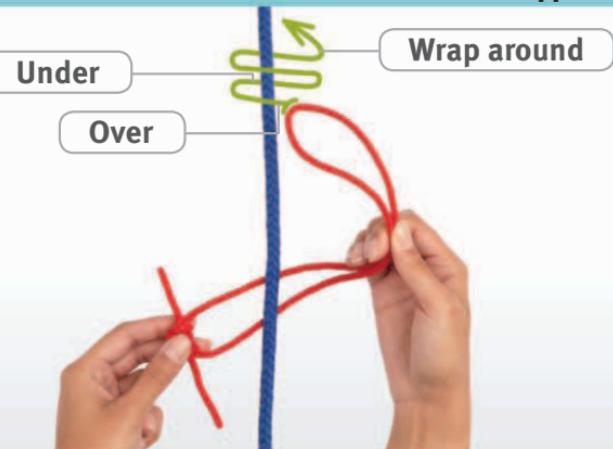
Klemheist Knot

- A variation of the Prusik Knot (see pp.228–29) that can be used for moving up or down a climbing rope.
- Soft tubular climbing tape can be used to form the sling.
- The rope used to form the sling should be at least half the diameter of the main rope.

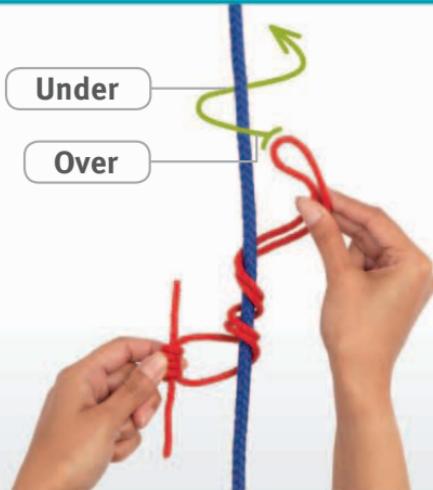


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FORM A SLING WITH A DOUBLE FISHERMAN'S KNOT (►pp.160–63)



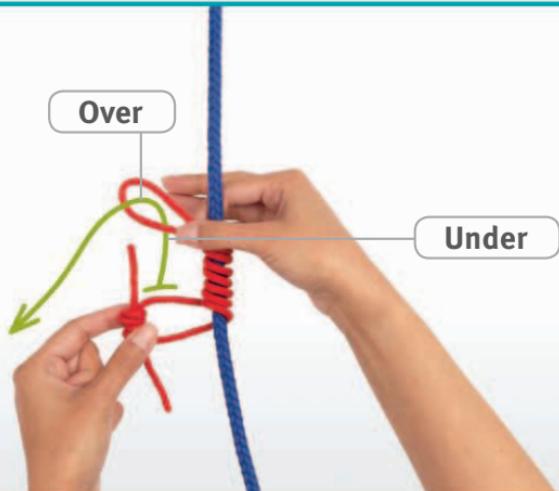
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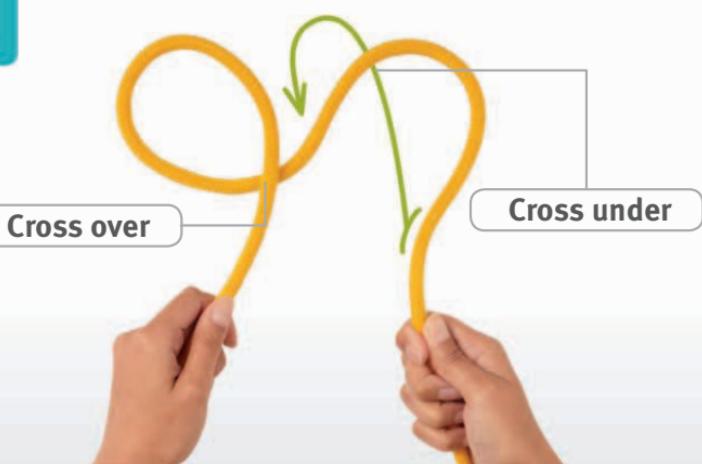
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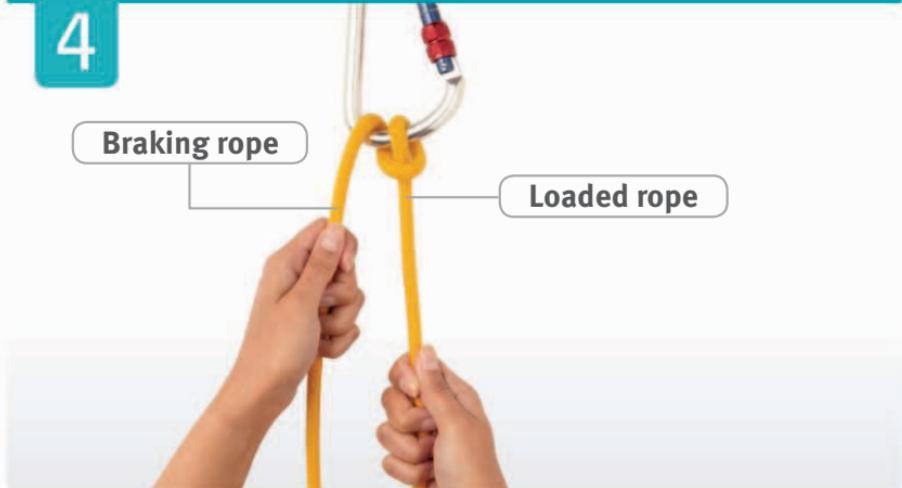
Italian Hitch

- A sliding hitch used in climbing and abseiling to control a descent.
- Pull on the loaded rope (rope that takes the strain) to cause the knot to slip.
- Pull on the braking rope to control the speed of the slip.
- The braking rope should not be confused with the loaded rope.

**1****2**

3

Place into carabiner



4

Braking rope

Loaded rope

Reversed Italian Hitch

- In the Reversed Italian Hitch, the loaded rope and the braking rope are reversed.
- The braking rope becomes the loaded rope, and vice versa.

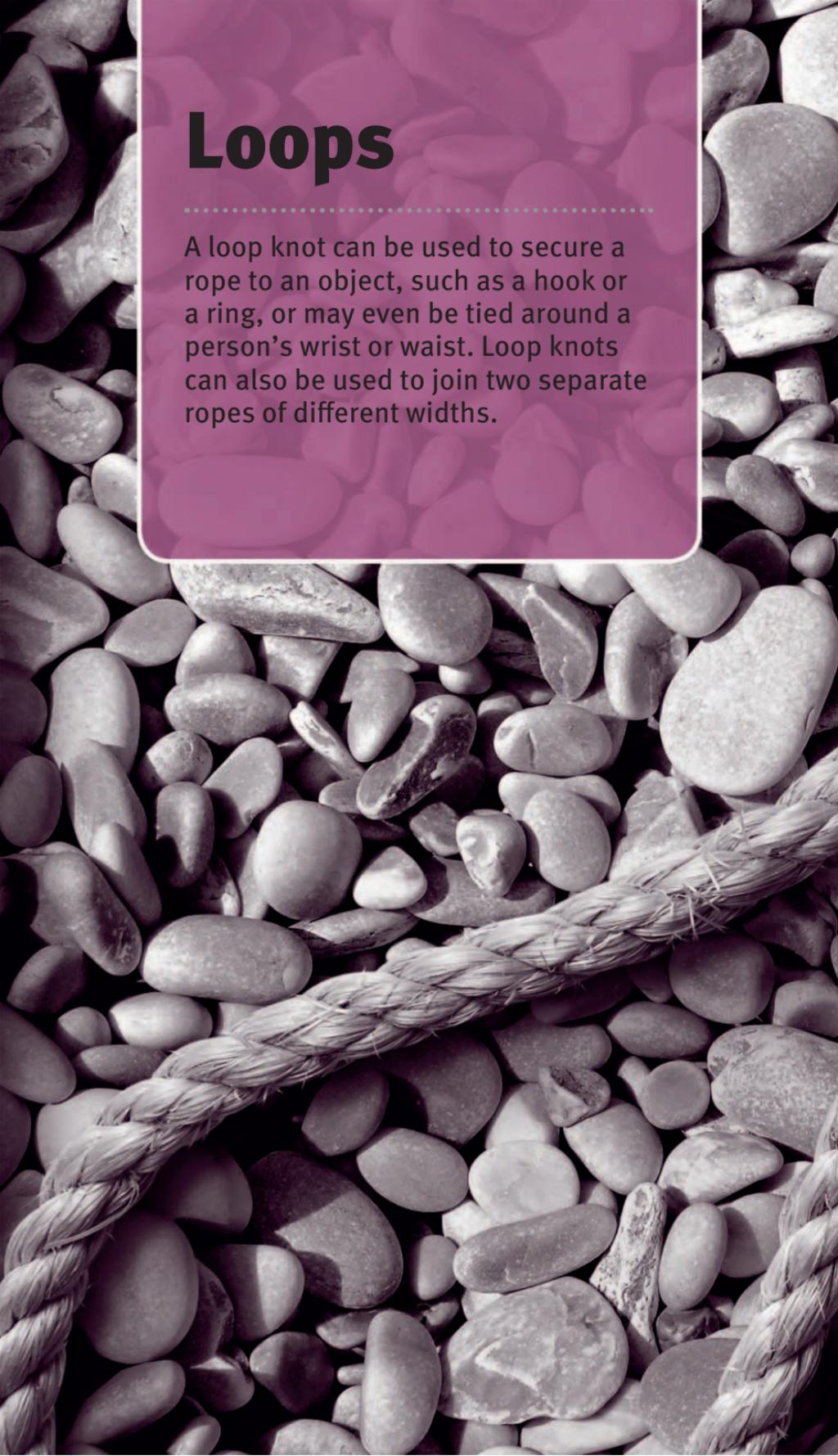
Braking rope

Loaded rope



Loops

A loop knot can be used to secure a rope to an object, such as a hook or a ring, or may even be tied around a person's wrist or waist. Loop knots can also be used to join two separate ropes of different widths.

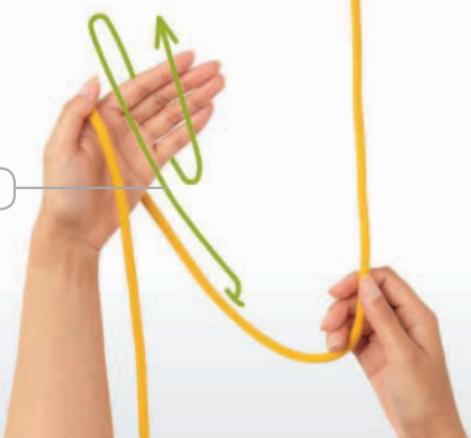
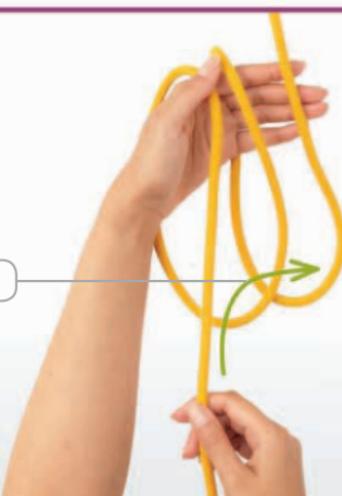




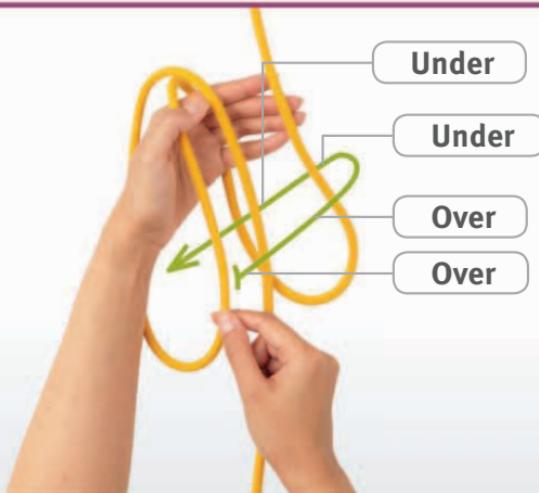


Alpine Butterfly

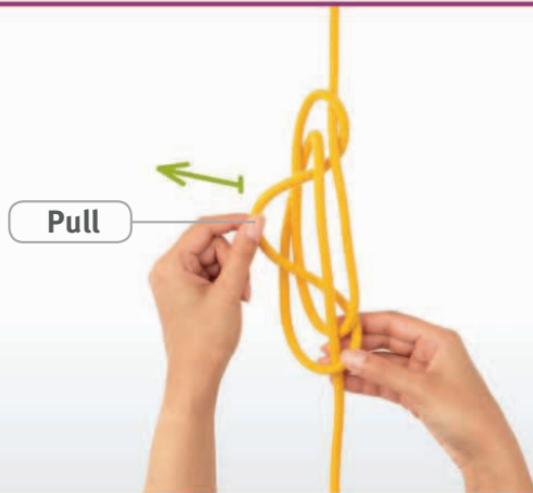
- Used by climbers to secure themselves to the middle of a rope.
- Will take strain in either direction.
- Can be tied quickly.

**1****Wrap around****2****Over**

3



4



5

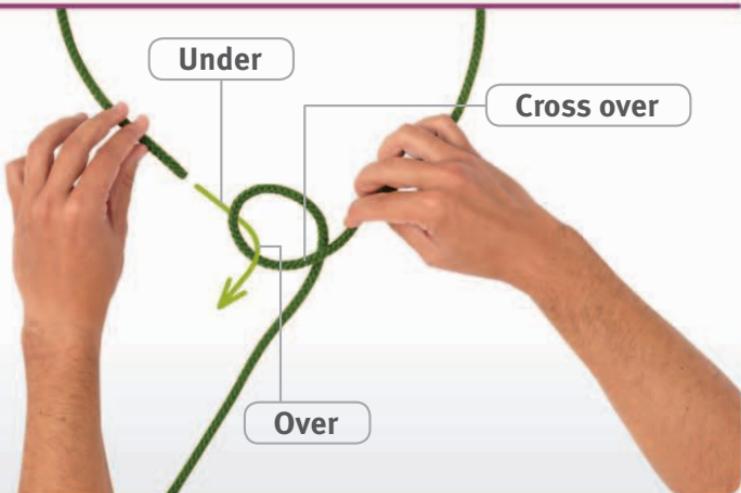
Tighten to finish



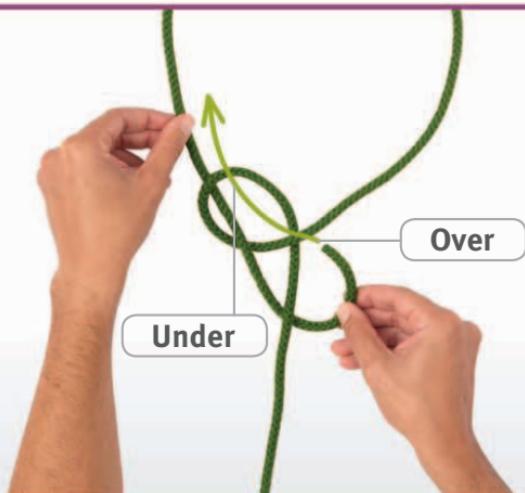


Bowline

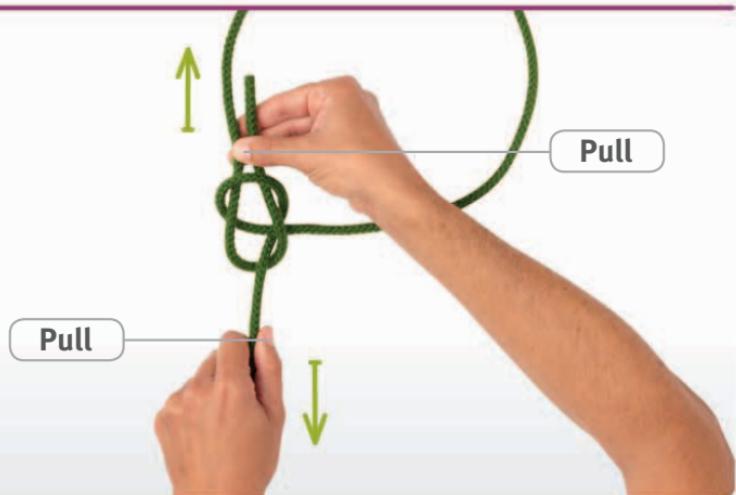
- A widely used, general-purpose loop knot.
- Easy to tie and untie.
- Ensure that the finished knot has a good tail.
- Can be tied in two ways (*see pp.242–44*)
—use this method when the standing part is free.

**1****2**

3



4



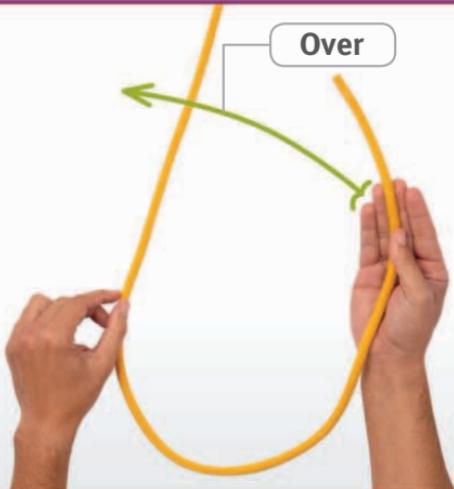
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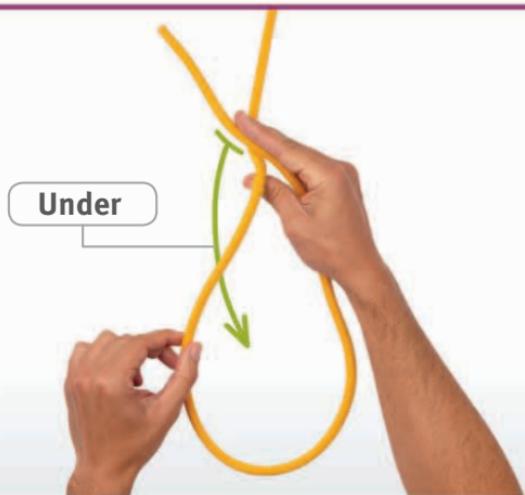


Bowline—Second Method

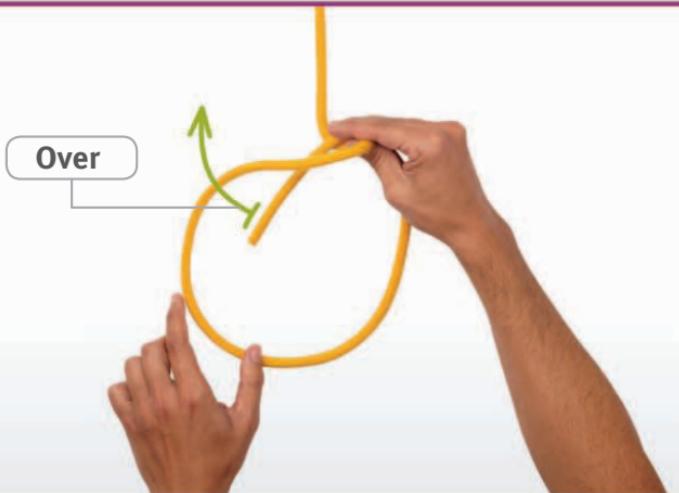
- Used to tie a loop around the waist for activities such as sailing and climbing.
- Ensure that the loop has a good tail (short end).
- Best method for tying a Bowline (*see pp.240–41*) if the standing end of the rope is fixed.

**1****2**

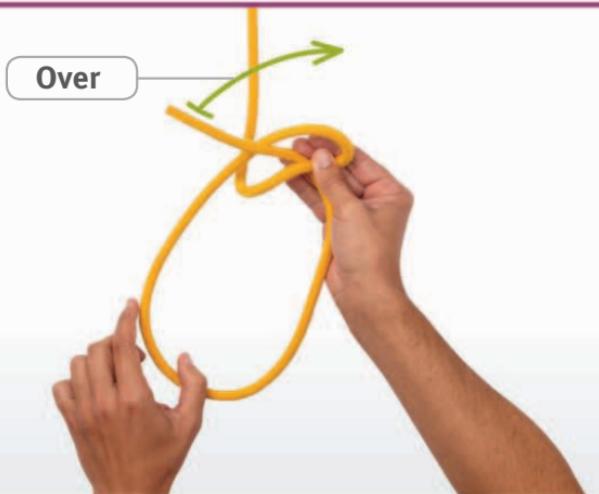
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4



5



244 LOOPS

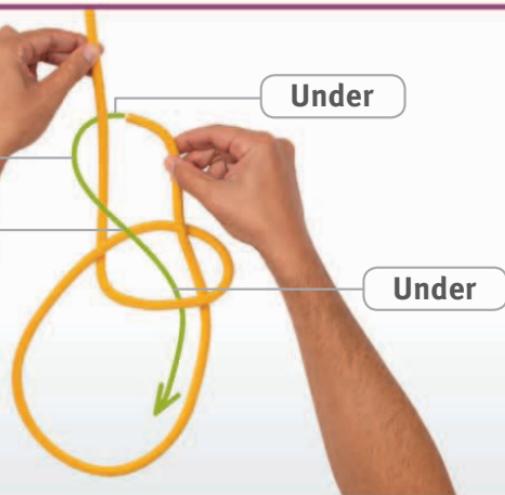
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Over

Over

Under

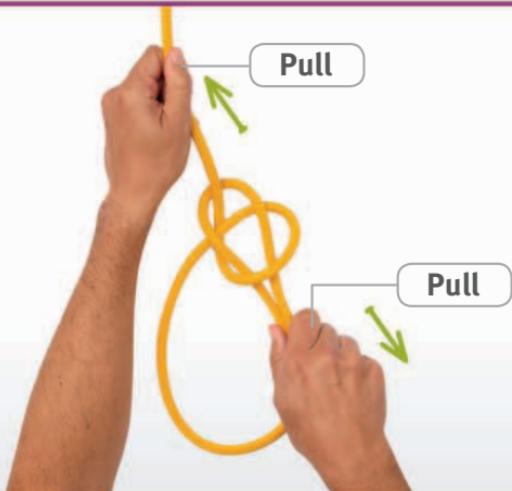
Under



7

Pull

Pull



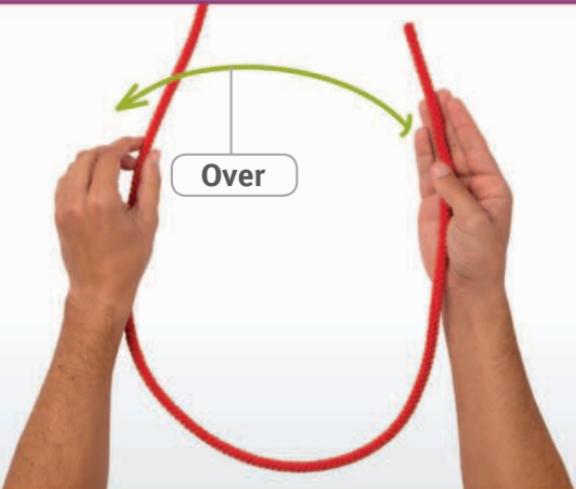
8

Tighten to finish



Bowline with Two Turns

- A more secure version of a Bowline (see pp.240–43) tied with an extra turn.
- Ensure that the finished knot has a good tail (working end).

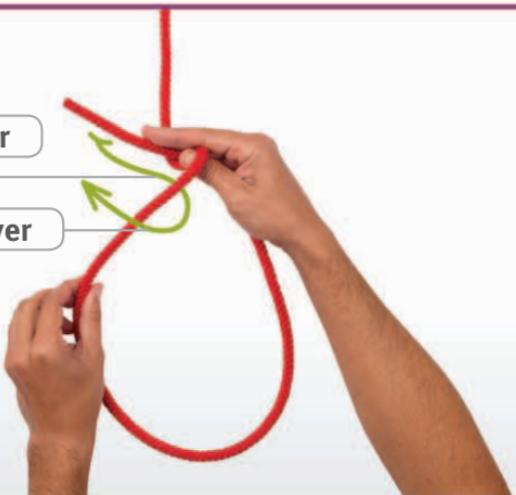
**1****2**

246 LOOPS

3

Under

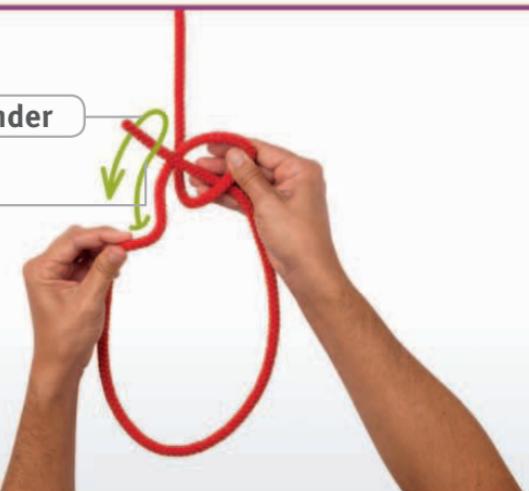
Over



4

Under

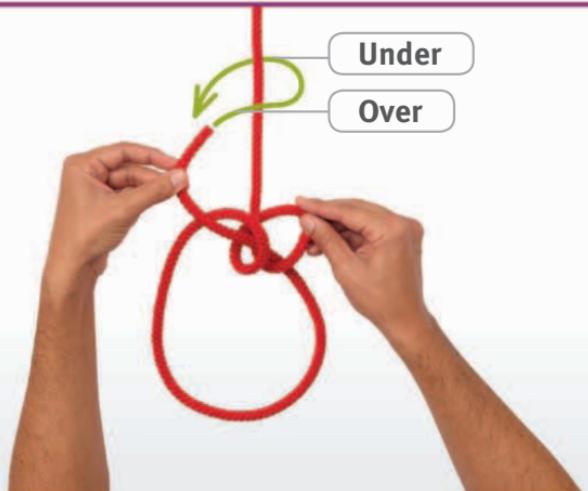
Over



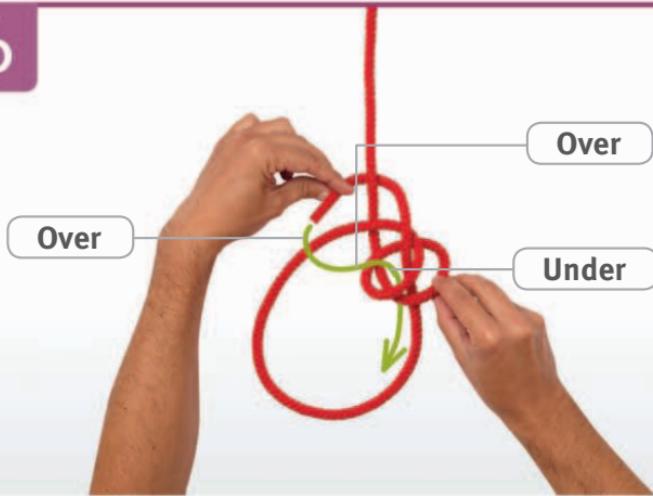
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Under

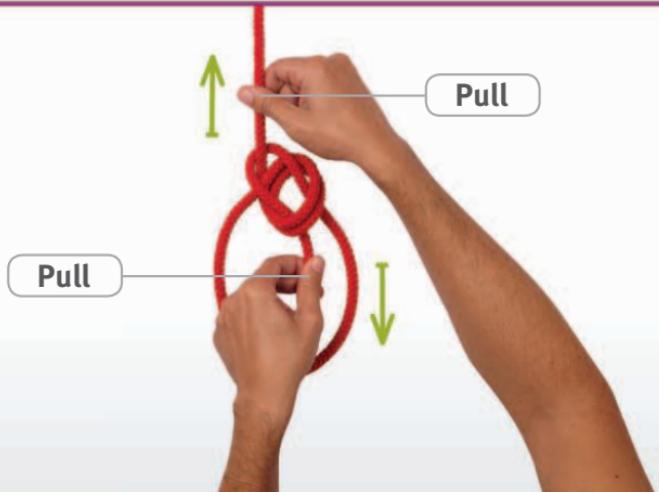
Over



6



7



8





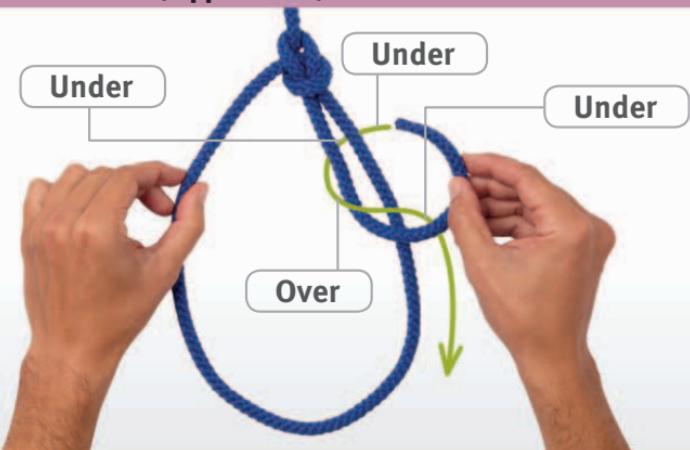
Bowline with Stopper

- A secure version of the Bowline (see pp.240–43) that is popular with climbers.
- Working end is tied around the loop using the Overhand Knot (see pp.28–29).



1

TIE A BOWLINE (»pp.240–43)



2

Tighten to finish





Figure-Eight Loop

- A popular climber's loop that can take a moderate amount of strain.
- Distinctive shape makes it easy to check if the knot is secure.
- Can be tied in fine nylon.
- Also known as the Double Figure-Eight Knot.



1

Cross under

Form bight



2

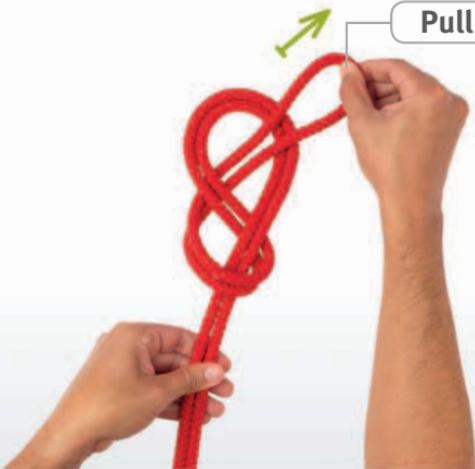
Under

Over



250 LOOPS

3



4



5





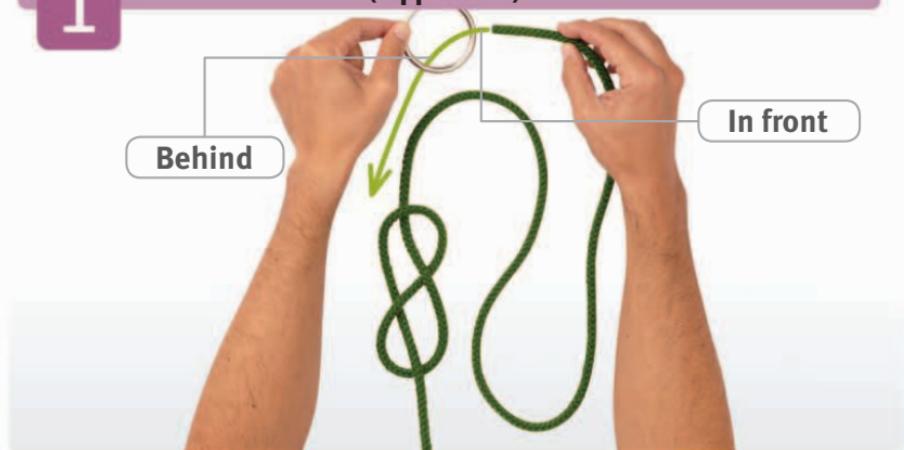
Threaded Figure-Eight Loop

- A Figure-Eight Loop (see pp.249–50) that can be threaded through a ring.
- Used for attaching climbing rope to a harness.
- The finished knot should be neat and snug.
- Not as easy to untie as the Bowline (see pp.240–41).

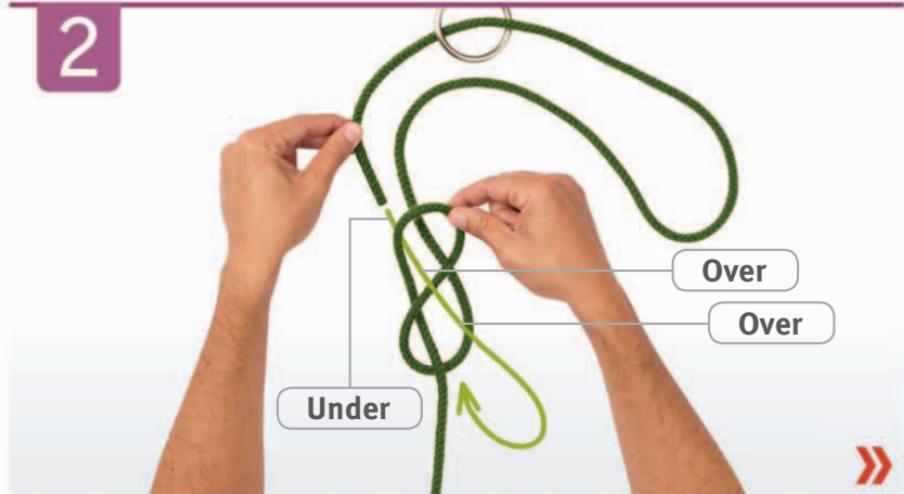


1

TIE A FIGURE-EIGHT (»pp.38–39)

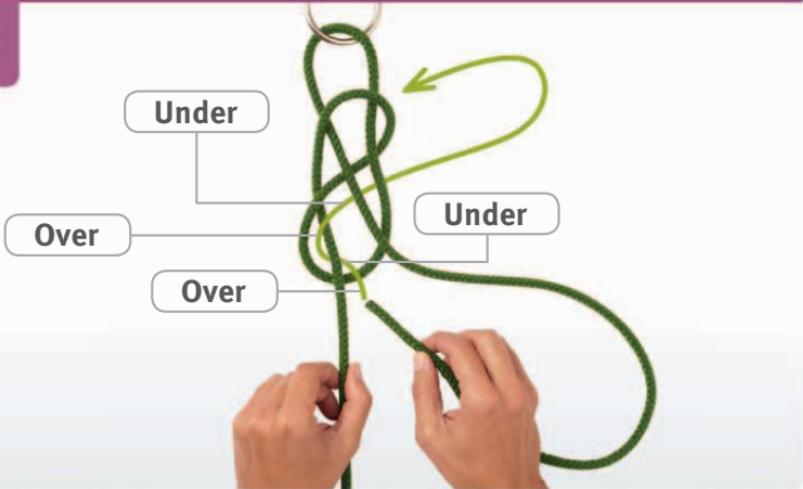


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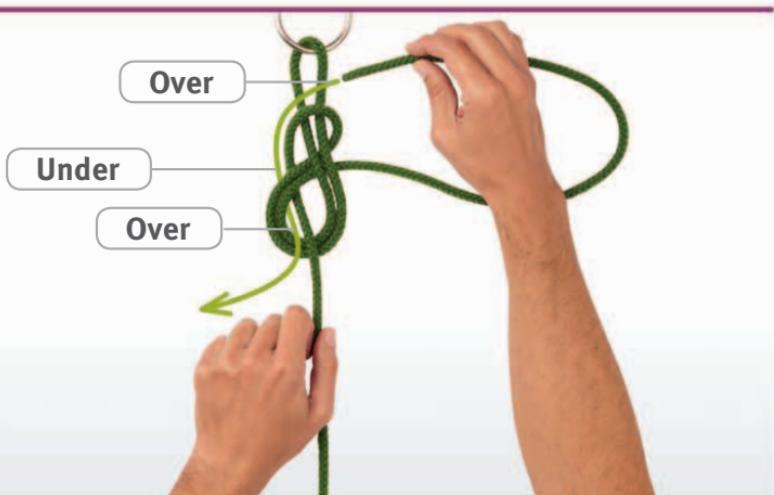


252 LOOPS

3



4



5

Tighten to finish

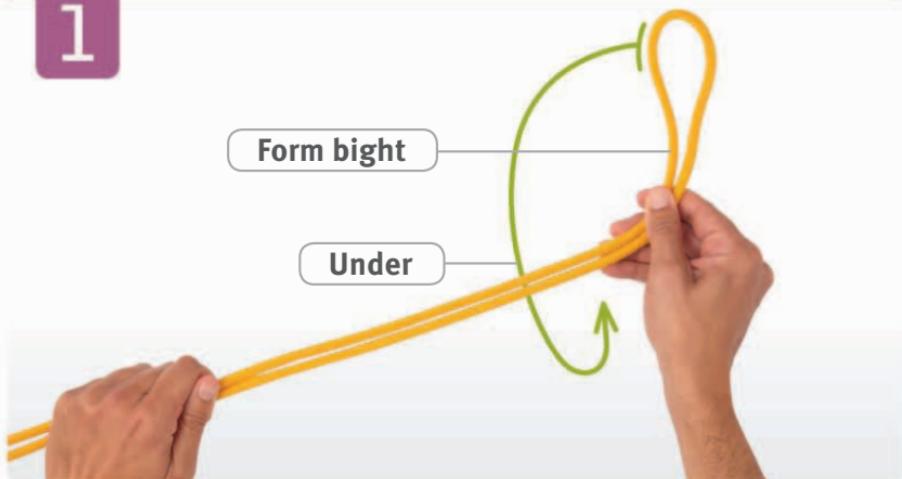


Overhand Loop

- A simple method for creating a fixed loop.
- Made from an Overhand Knot (*see pp.28–29*) tied in the bight.
- Difficult to untie.



1

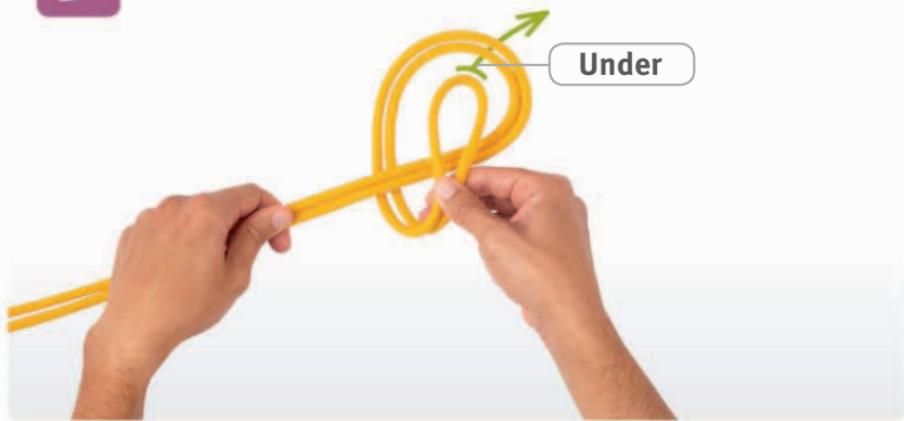


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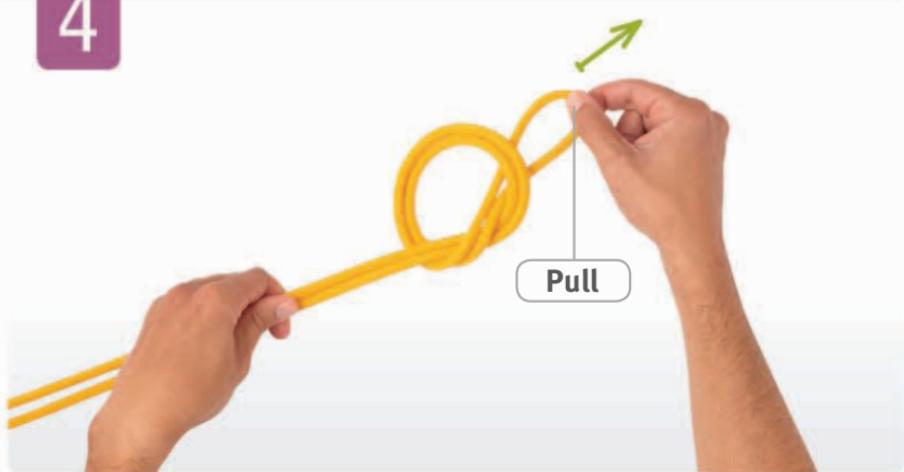


254 LOOPS

3



4



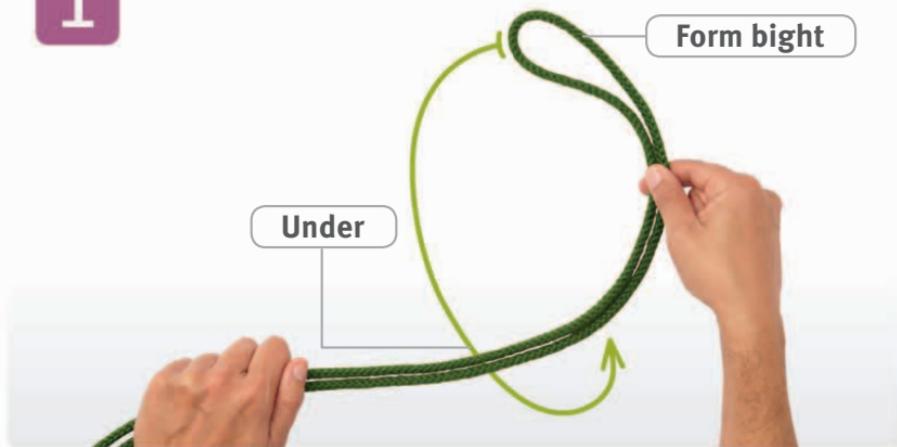
5



Double Overhand Loop



- A loop knot suitable for all types of thin ropes and cords, such as fishing line.
- Tied using the same method as the Double Overhand Knot (see pp.32–33), but with a doubled length of rope.
- Can be difficult to untie.

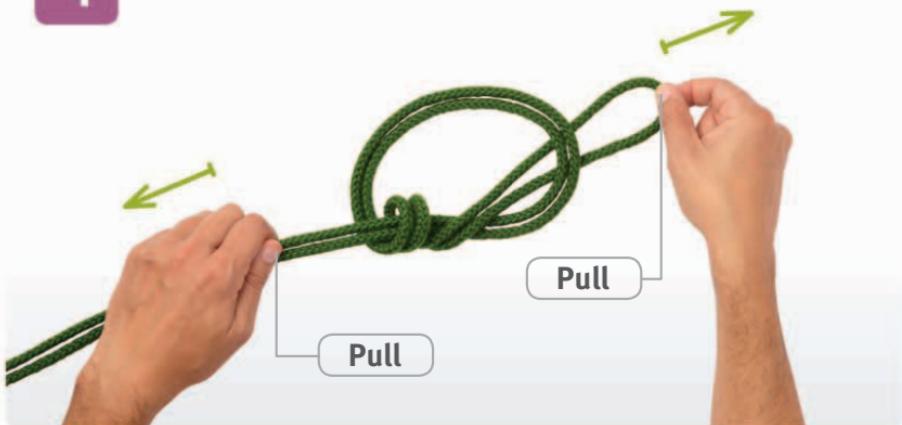
1**2**

256 LOOPS

3



4



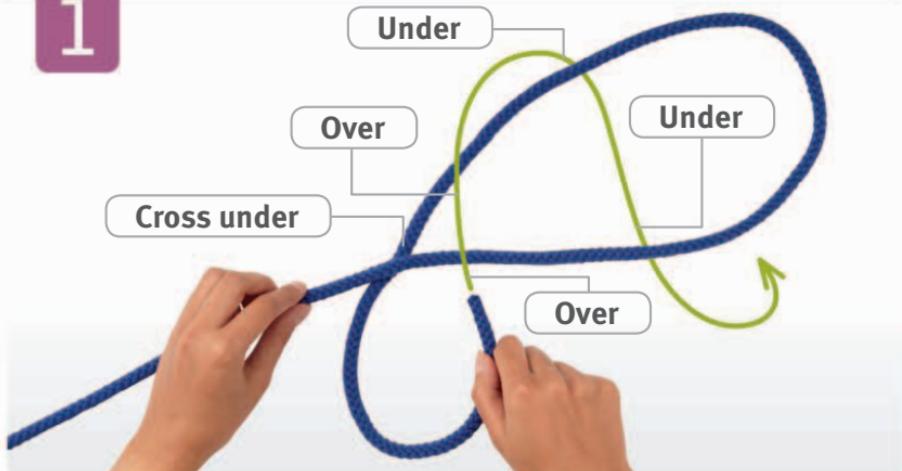
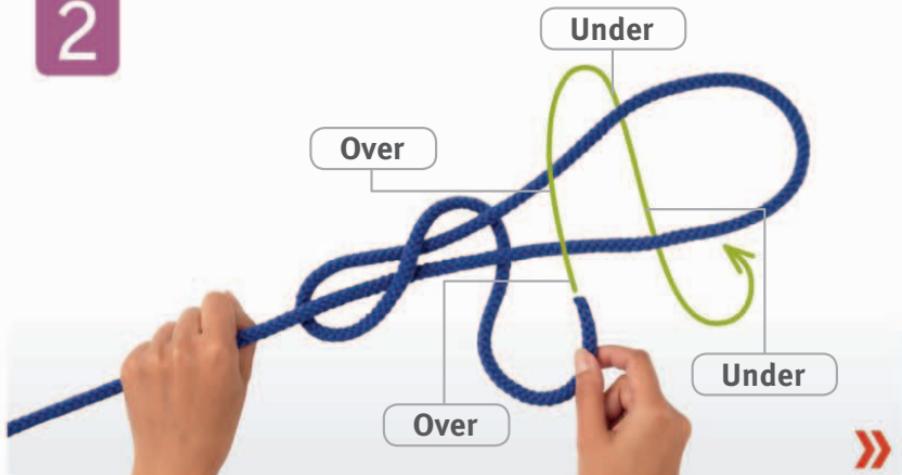
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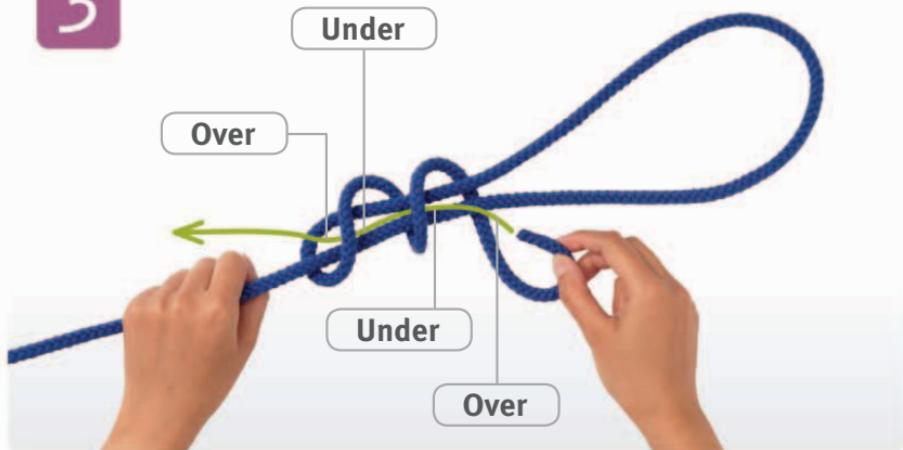
Double Overhand Sliding Loop

- Good for attaching a fishing line to a hook or a cord to a pair of glasses.
- Work the knot into a neat shape to ensure that it slides easily.

**1****2**

258 LOOPS

3



4



5

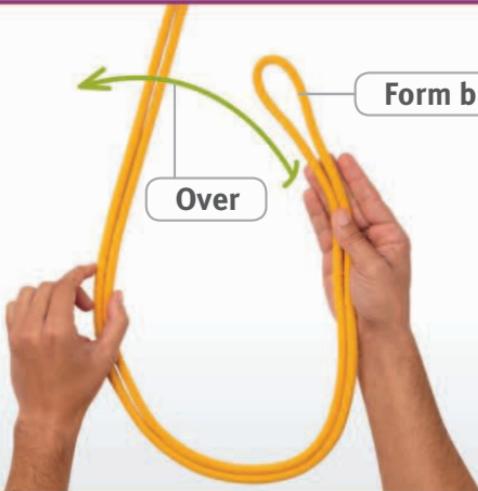


Bowline on the Bight

- A secure, double loop knot that can take strain.
- Each of the two fixed loops can be used for separate functions.
- Quick to tie and easy to untie.
- Can be tied in the middle of the rope.



1



2

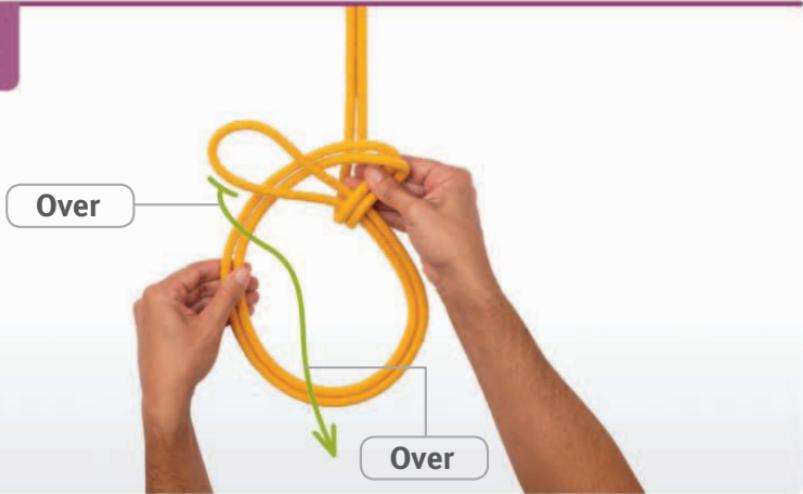


260 LOOPS

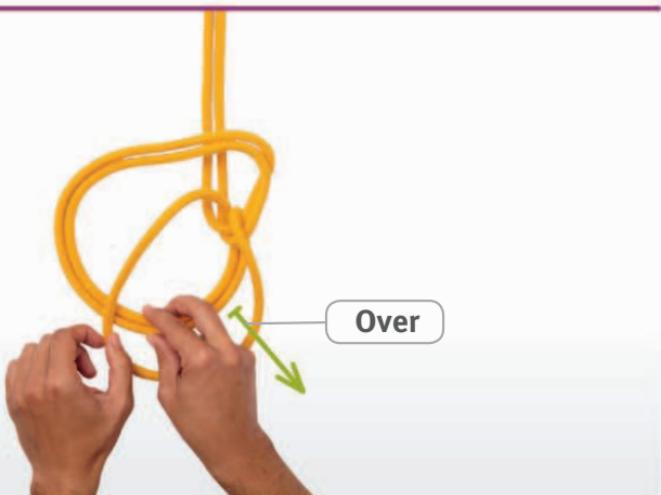
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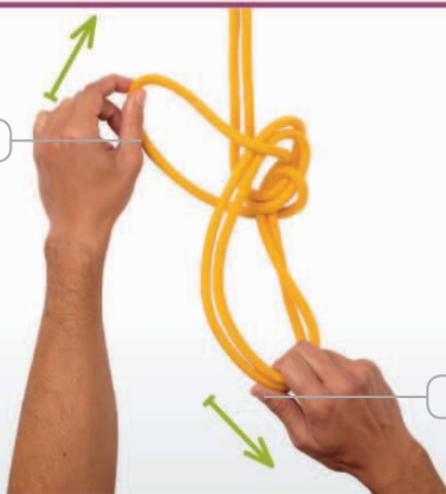


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6

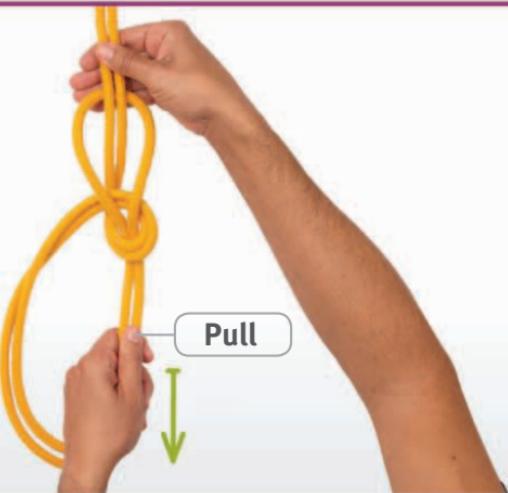
Pull



Pull

7

Pull



8

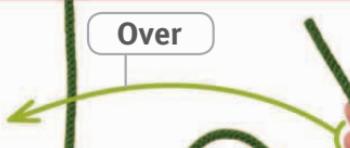
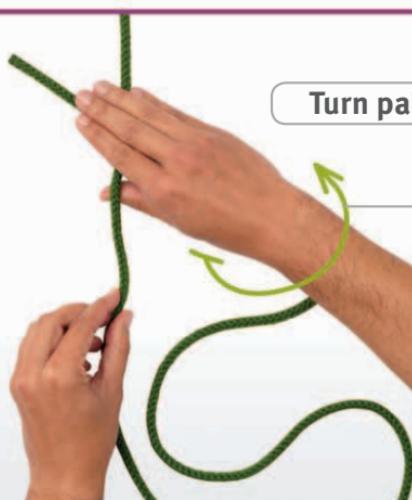
Tighten to finish



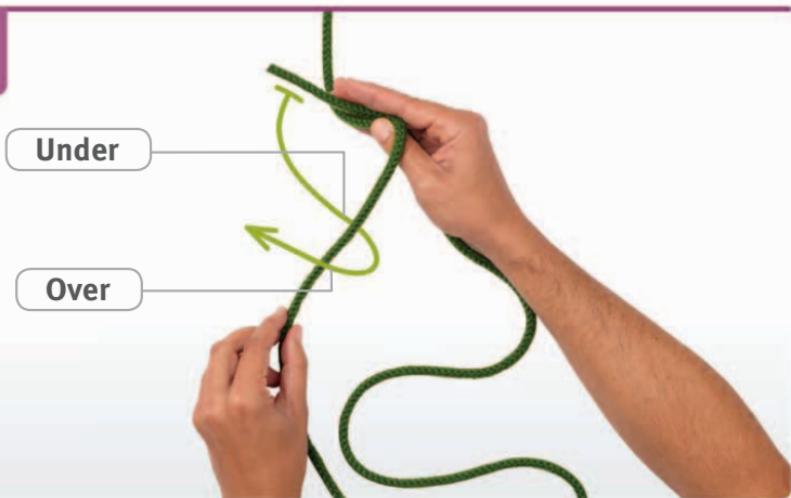


Portuguese Bowline

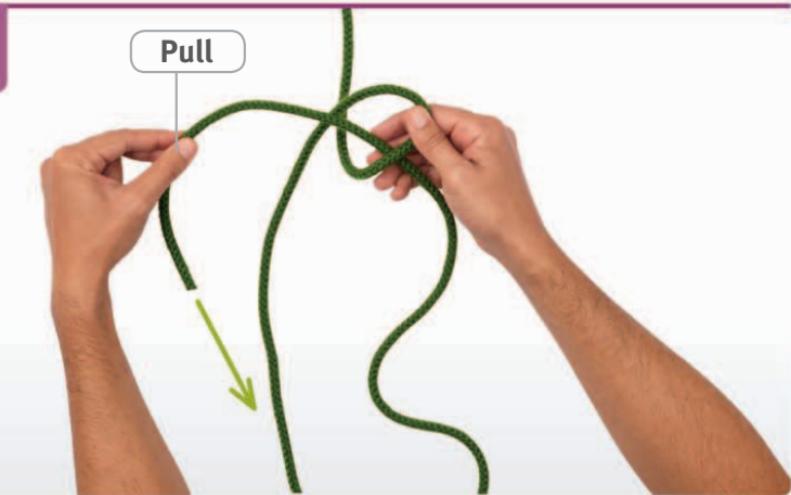
- Used to tie two adjustable loops quickly.
- Equal strain must be placed on both loops to prevent them from changing size while in use.

**1****2****Turn palm to face body**

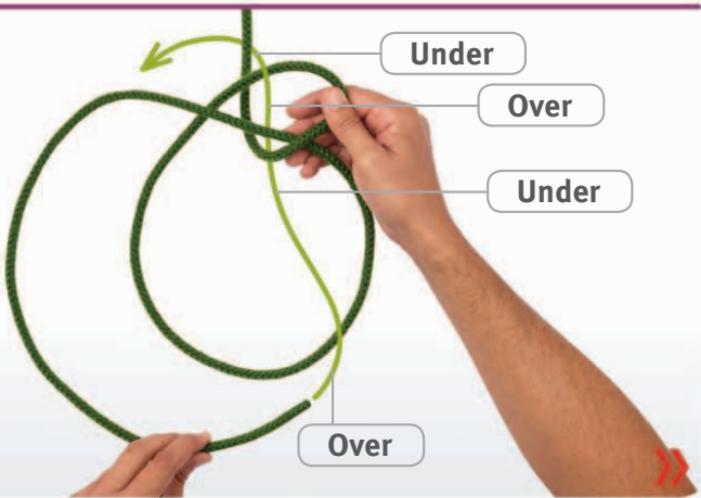
3



4



5



264 LOOPS

6

Over

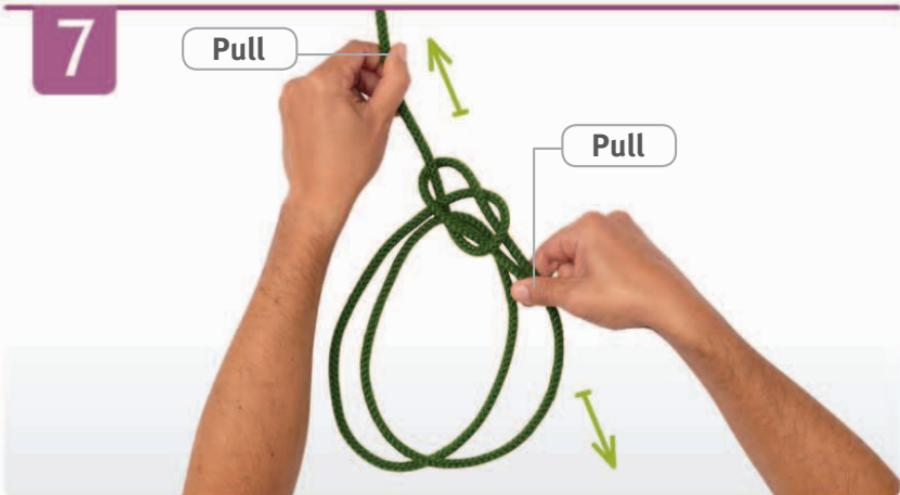
Under



7

Pull

Pull



8

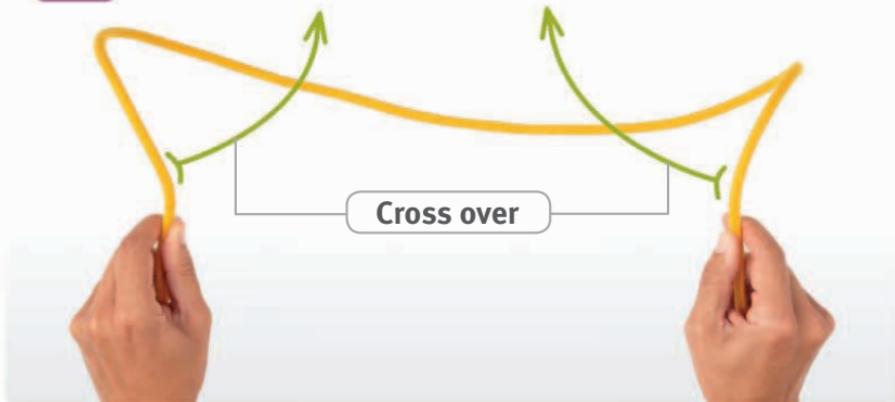
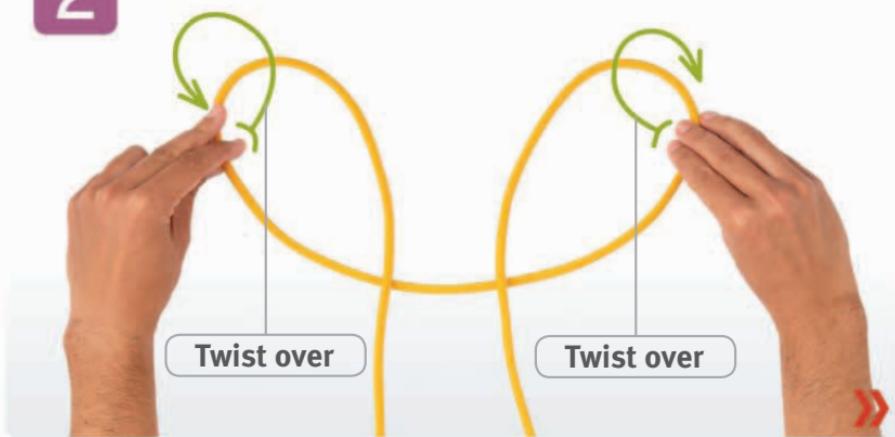
Tighten to finish





Spanish Bowline

- A variation of the Bowline (see pp.240–43), this knot forms two adjustable loops that lock into position.
- Can be tied in the middle of the rope.
- Place equal strain on both loops.

**1****2**

3



4

Grab and pull through



5

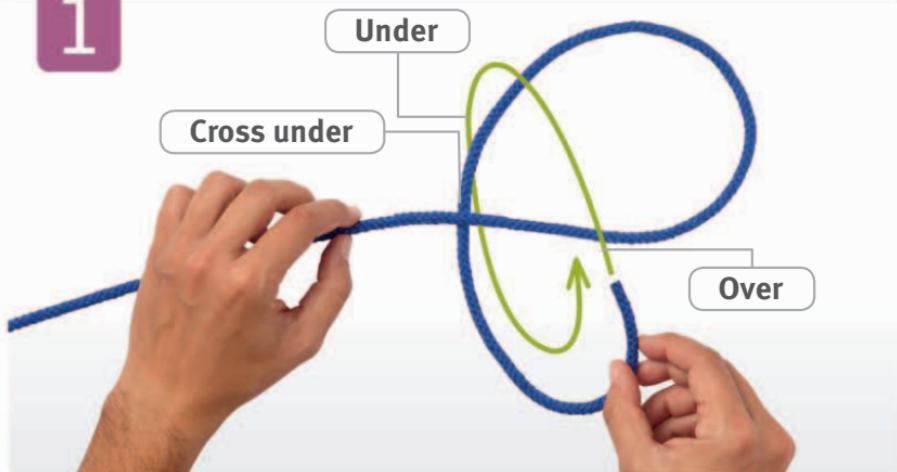
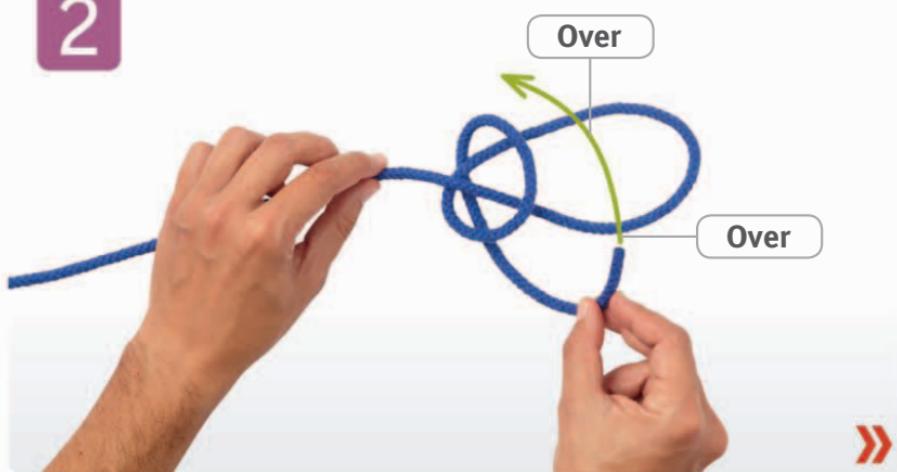
Tighten to finish





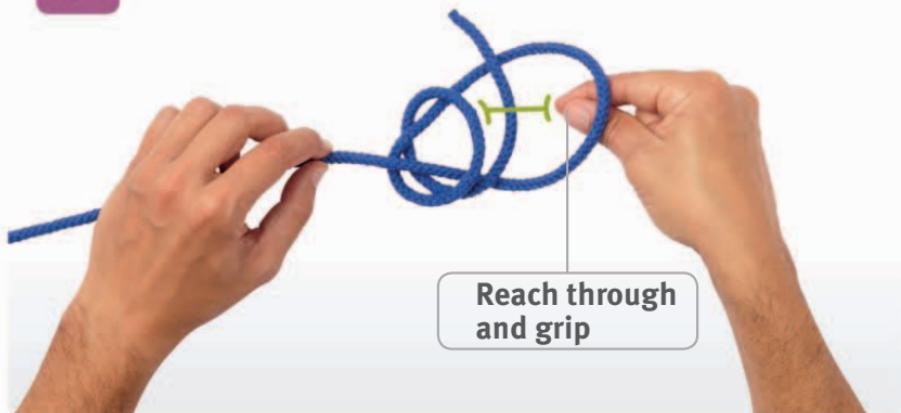
Angler's Loop

- Ideal for making a fixed loop in thin lines and ropes.
- Also works well with elasticized cord (shock cord).
- Quick to tie.
- Not suitable for thick ropes as it can be difficult to untie.

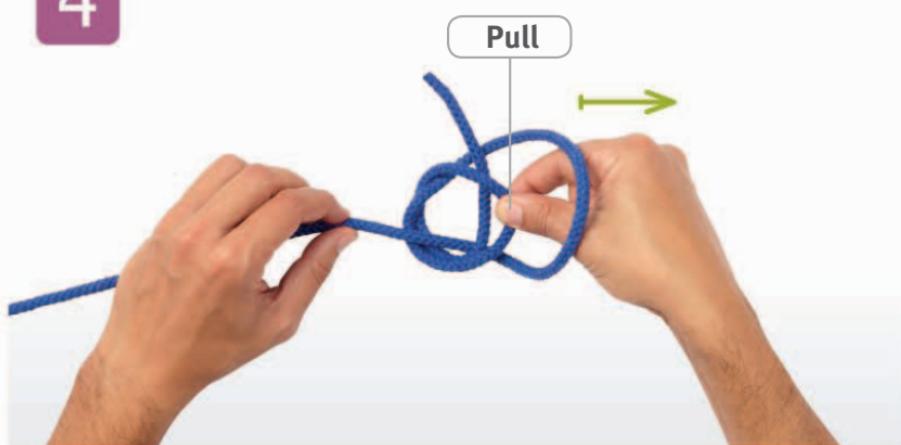
**1****2**

268 LOOPS

3



4



5

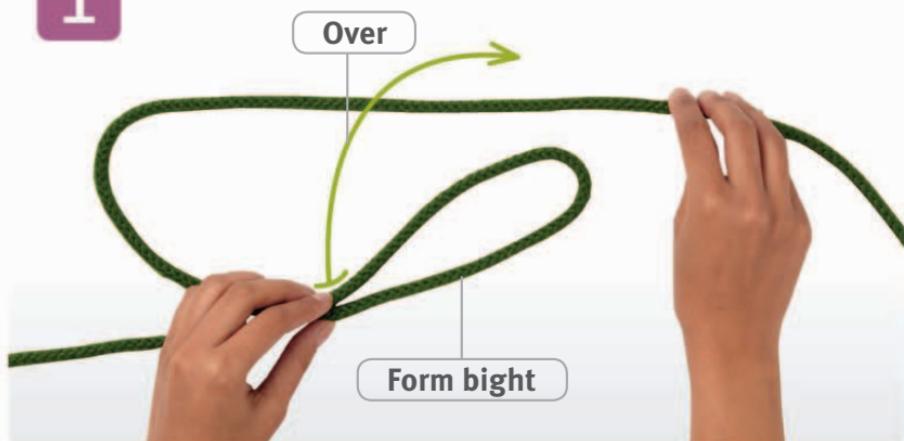
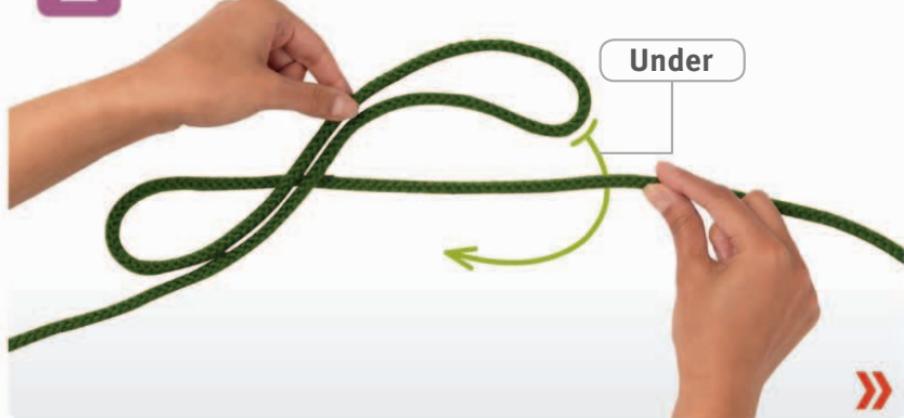
Tighten to finish





Single Figure-Eight Loop on the Bight

- Can be tied in the middle of the rope.
- Quick to tie and reasonably easy to untie.
- Creates a loop that can only be pulled in one direction.

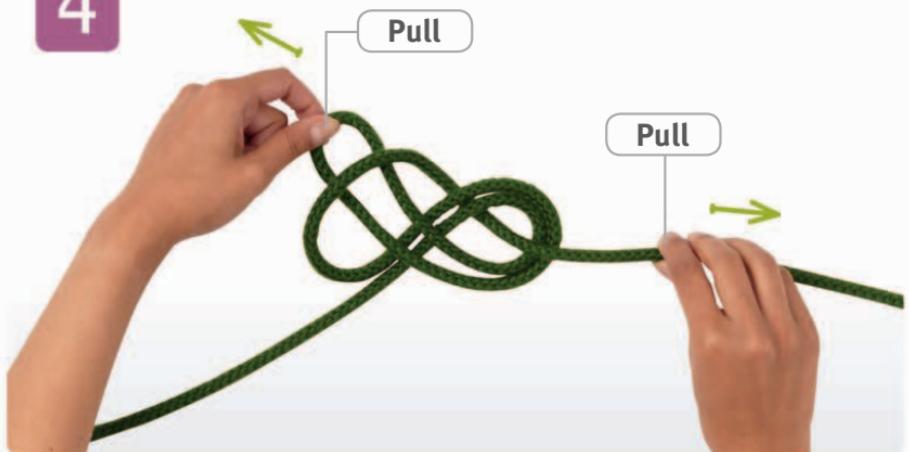
**1****2**

270 LOOPS

3



4



5



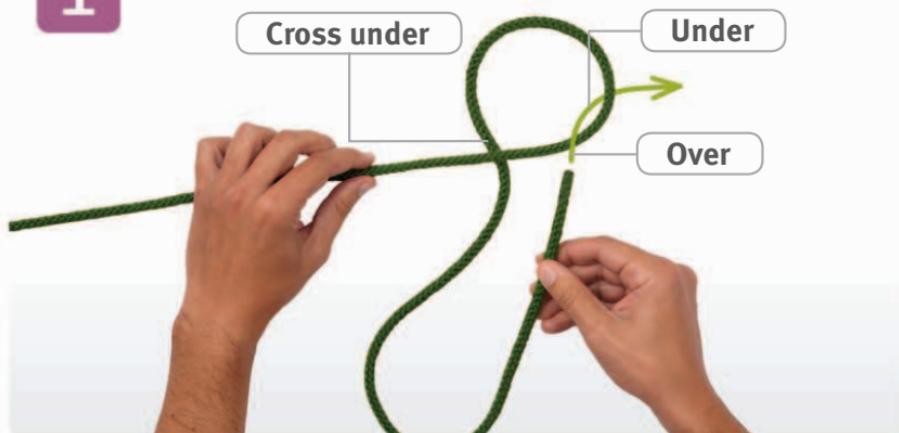


Englishman's Loop

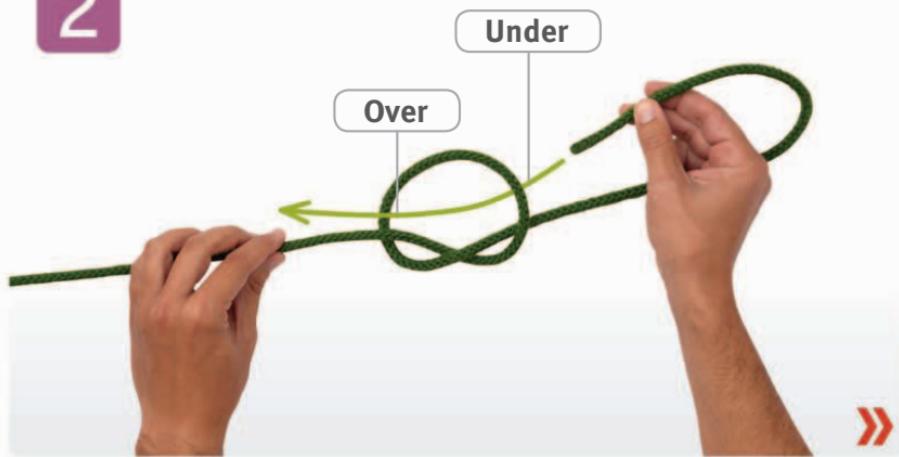
- Used to form a fixed loop.
- Based on two Overhand Knots (see pp.28–29).
- Similar to the Fisherman's Knot (see pp.157–59).



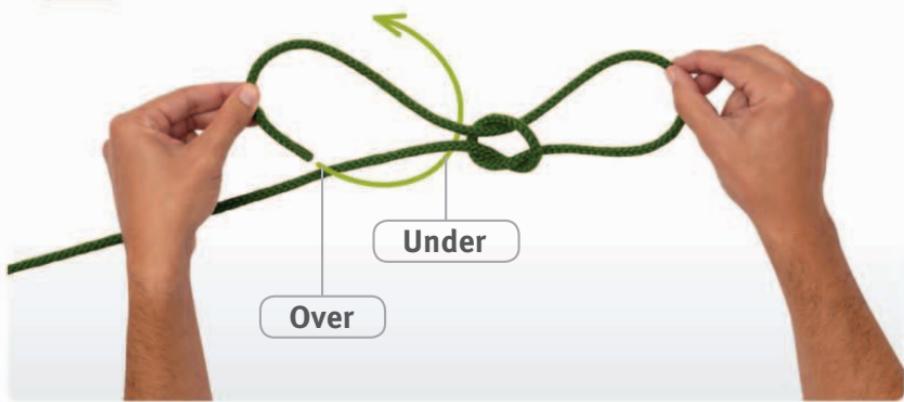
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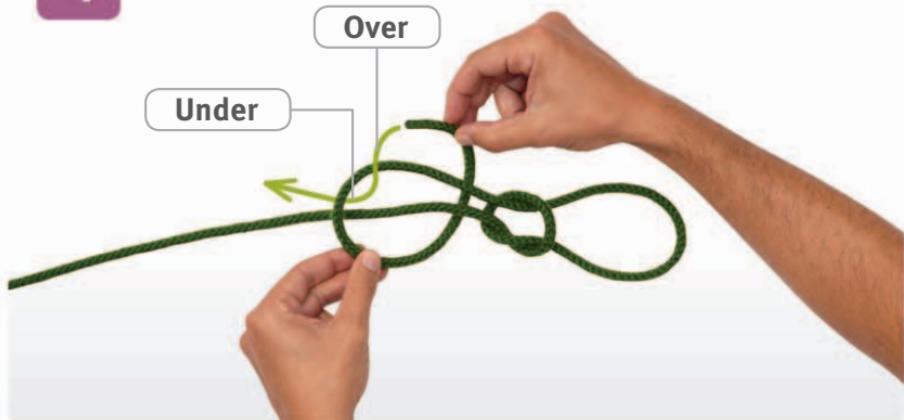
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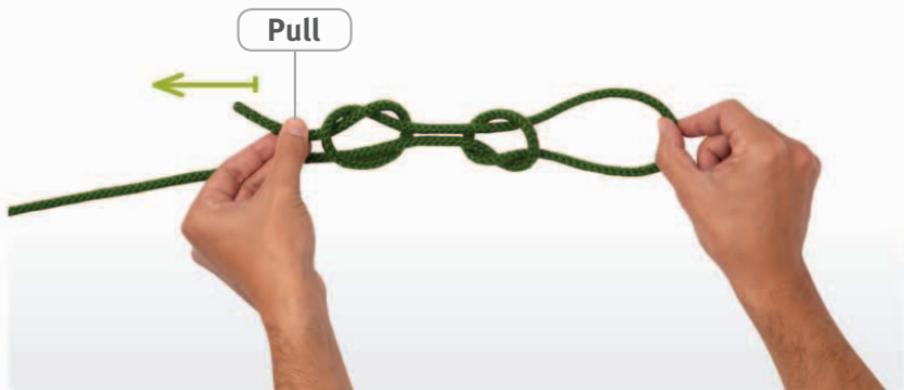
3



4



5



6

Bring knots together

Pull

Pull



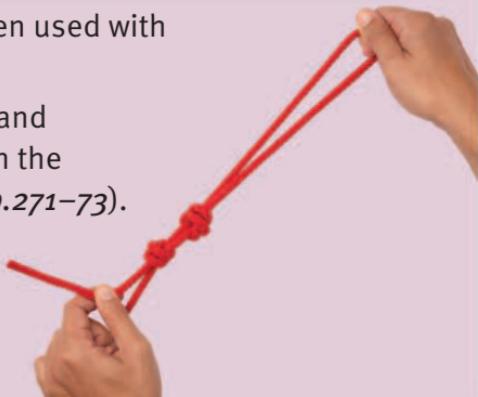
7

Tighten to finish



Double Englishman's Loop

- Provides extra security when used with a very slippery line.
- Simply double each Overhand Knot (see pp.28–29) tied in the Englishman's Loop (see pp.271–73).
- Use only with thin line and cords.





BEST FOR ...

Fishing

Being able to secure a line to a hook is a fundamental angling skill. It is important to remember that some fishing knots can only be used with lines of a certain thickness and material.

Palomar Knot

» pp.209–10

- ✓ The strongest knot for tying a fishing line to a hook—can take a great deal of strain.
- ✓ Will work with even the most slippery nylon line.
- ✓ Moistening the line will give a neater finish to the knot.



Similar knots:
 » pp.205–06
Snelling a Hook
 » pp.207–08
Clinch Knot

Blood Knot

» p.168–71

- ✓ Commonly used by anglers to join together two thin pieces of nylon line.
- ✓ Can take a great deal of strain.
- ✓ Moistening the line will help draw the knot tight.



Similar knots:
 » pp.157–59
Fisherman's Knot
 » pp.160–63 **Double Fisherman's Knot**

Figure-Eight Loop » pp.249–50

✓ A knot that is quick to tie—even with the finest fishing line.

✓ Favored by anglers because it is easy to tie and extremely strong.

✗ Difficult to untie, especially when wet.



Similar knots:
 » pp.253–54
 Overhand Loop
 » pp.255–58
 Double Overhand Loop

Snelling a Hook

» pp.205–06

✓ A strong, neat method for tying line to a hook.

✓ Works on spade-ended hooks (hooks without an eye) as well as eyed hooks.

✓ Moistening the line will help to draw the knot tight.



Similar knots:
 » p.207–08
 Clinch Knot
 » p.208
 Improved Clinch Knot

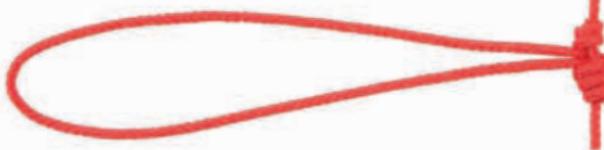


Blood Dropper Knot

» pp.278–79

✓ A loop that allows another lure or bait to be added with a short length of line.

✓ The loop is angled away from the line, helping prevent tangles.



Similar knots:

» pp.160–63

Double

Fisherman's

Knot

» p.168–71

Blood Knot

Bimini Twist » pp.280–82

✓ A knot that makes a long strong loop in all types of fishing line.

✓ Will not slip if it has been tied correctly.

✗ Needs two people and a good deal of practice to make successfully.



Similar knots:

» pp.255–58

Double

Overhand Loop

» pp.269–70

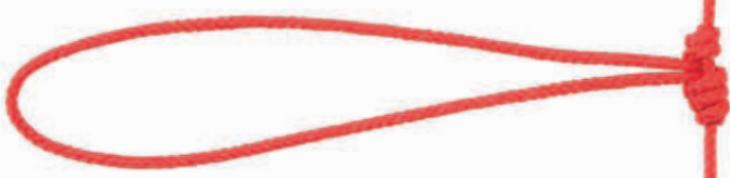
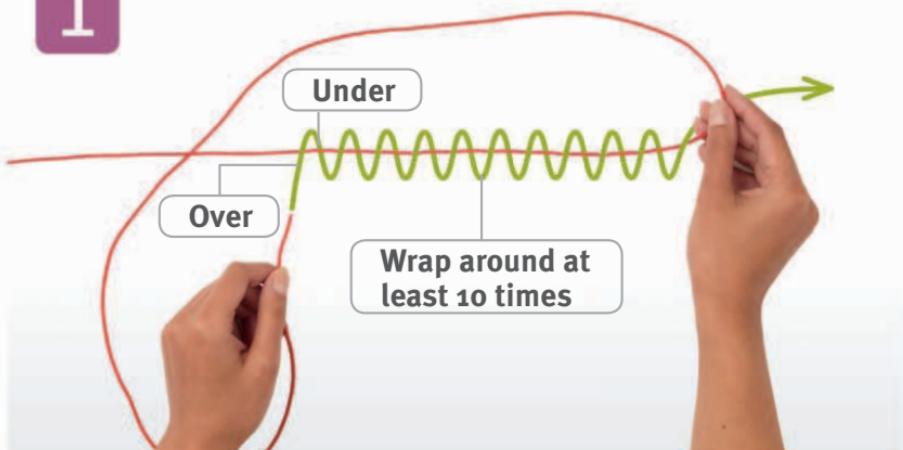
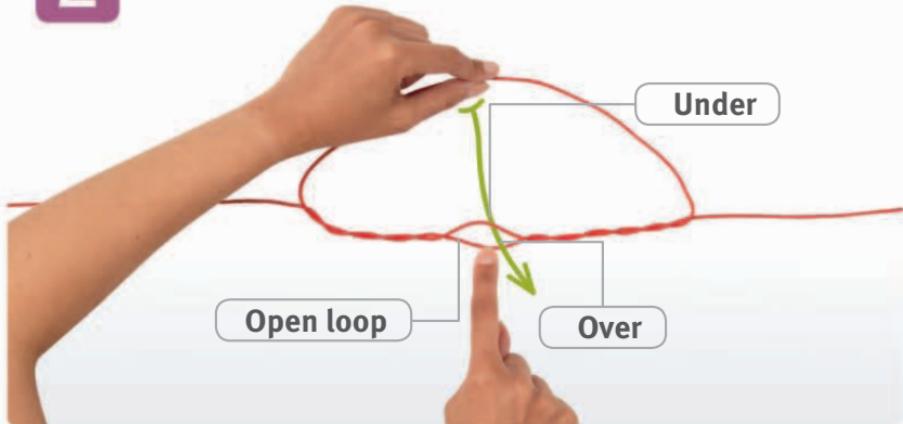
Single Figure-Eight Loop on the Bight



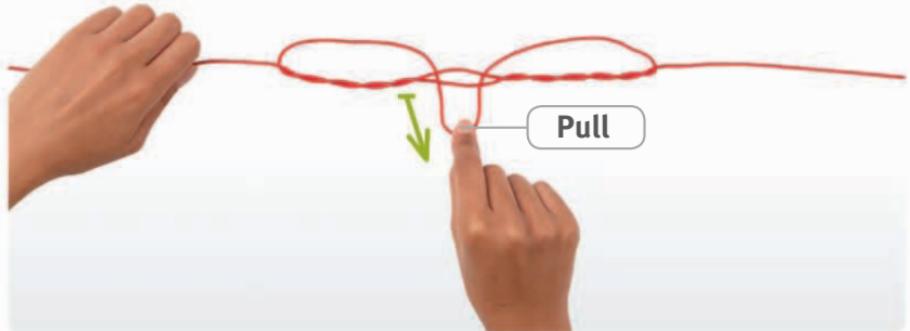


Blood Dropper Knot

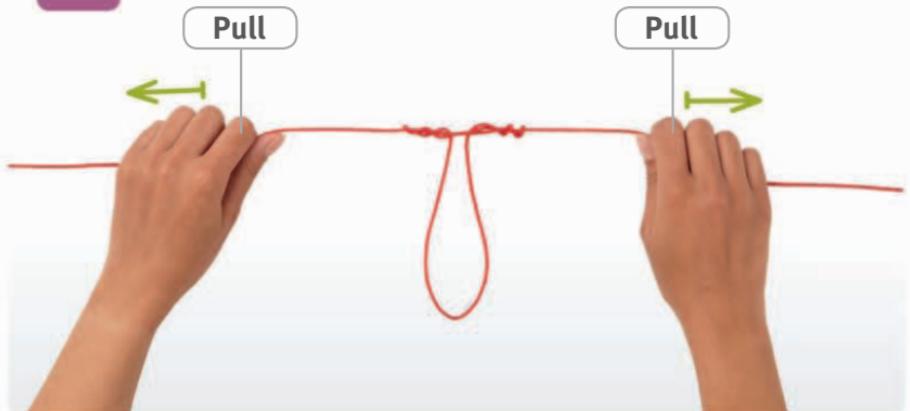
- Makes a loop at the side of a line for attaching a fishing fly or lure.
- Tied at the end of the line.
- Moisten line to help draw the knot tight.

**1****2**

3



4



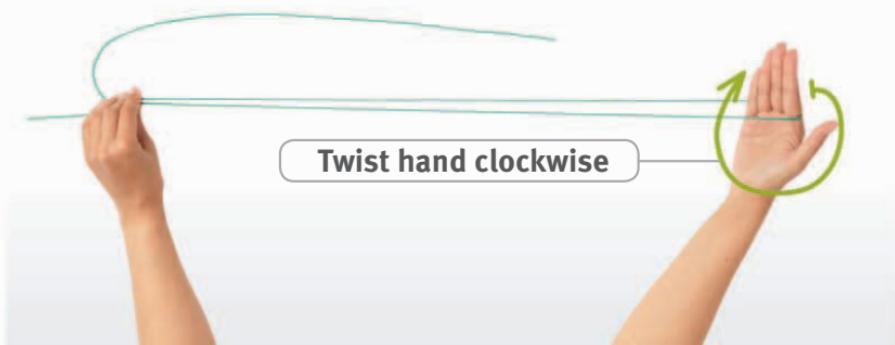
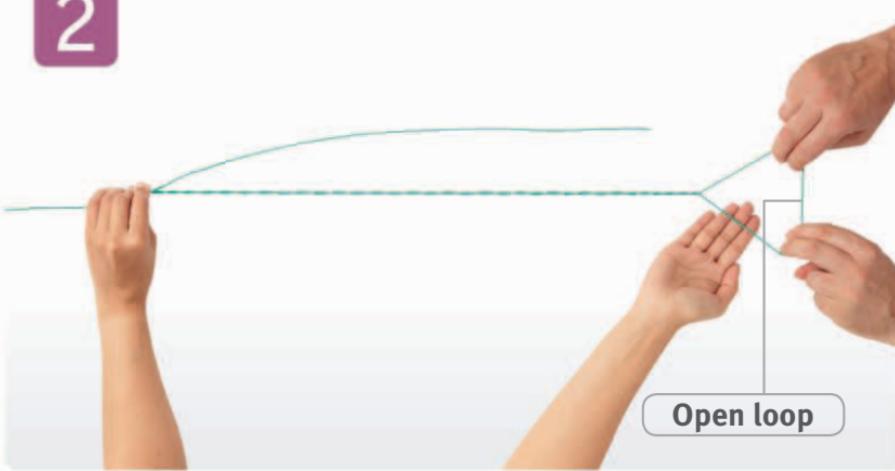
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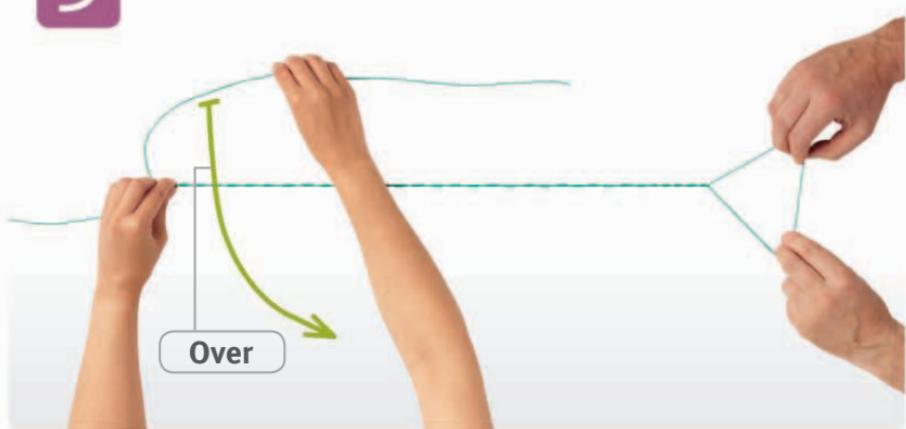


Bimini Twist

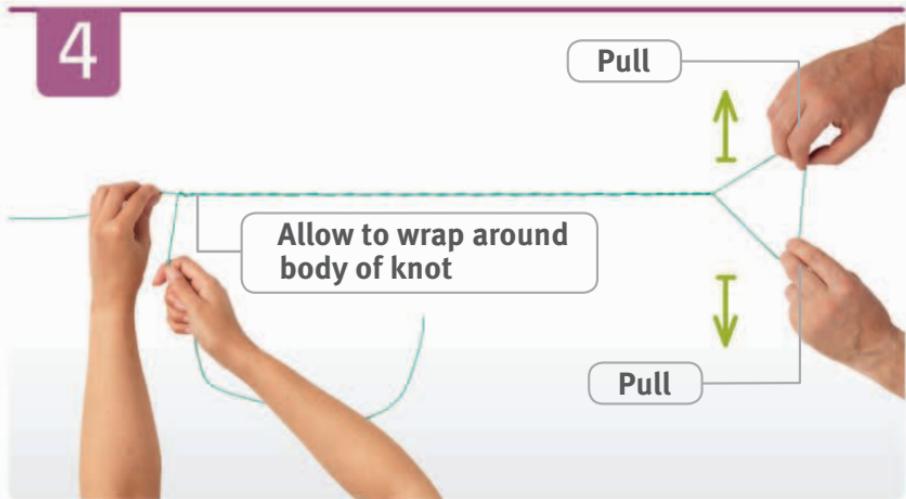
- Originally developed for use in big-game fishing.
- Suitable for both braided and monofilament fishing line.
- Forms a long, strong loop at the end of a fishing line.
- Needs practice and more than one person to tie.

**1****Double the line****2**

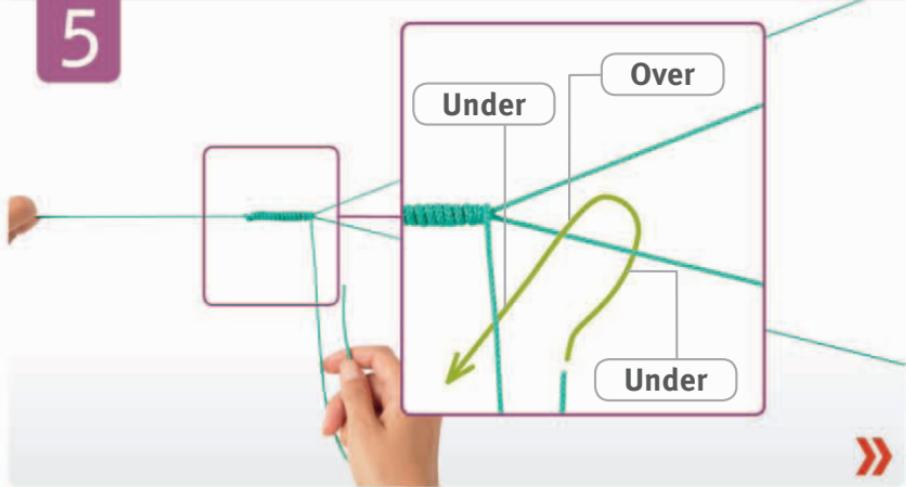
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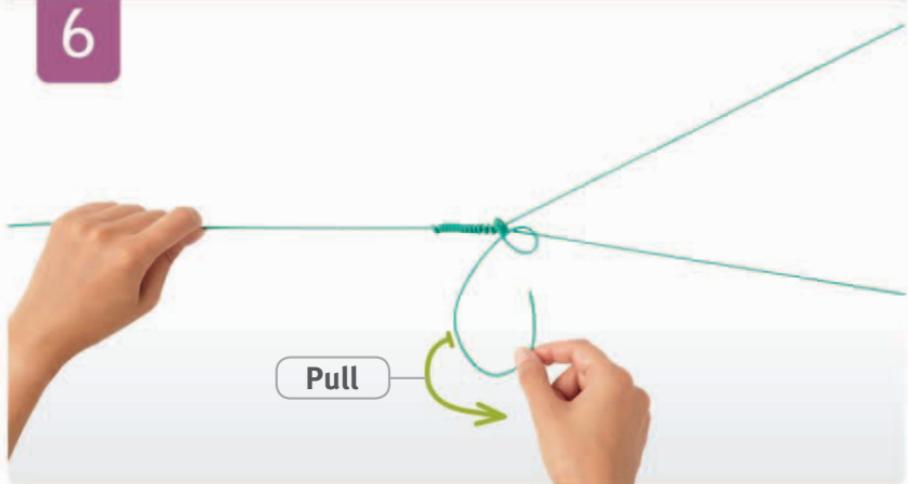
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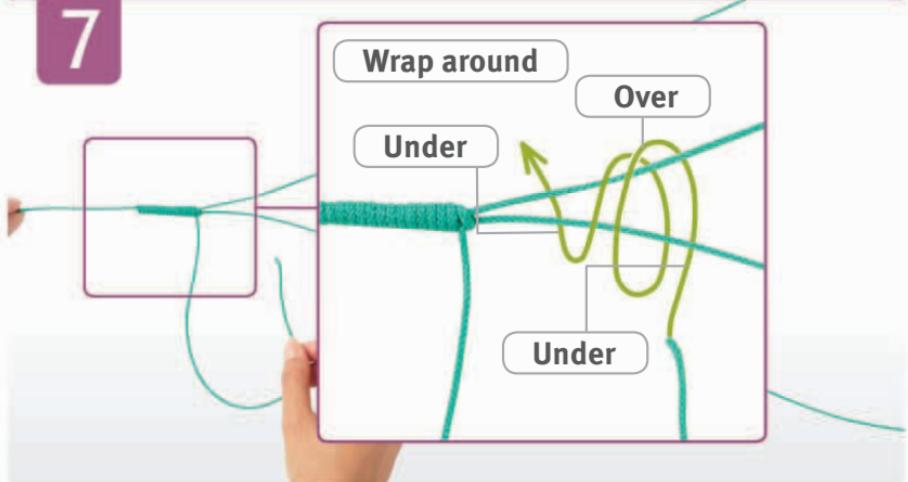
5



6



7



8

Tighten and trim to finish





Basic Net

- A widely used technique for making and mending nets.
- Use a netting needle (see p.19, p.284) to hold the line while you work.
- Use a gauge—a piece of wood roughly half the diameter of the mesh—to ensure even spacing.



1

TIE CLOVE HITCHES (»pp.140–41) AROUND A POLE

Under

Over

Load netting needle

2

Trap line
with finger

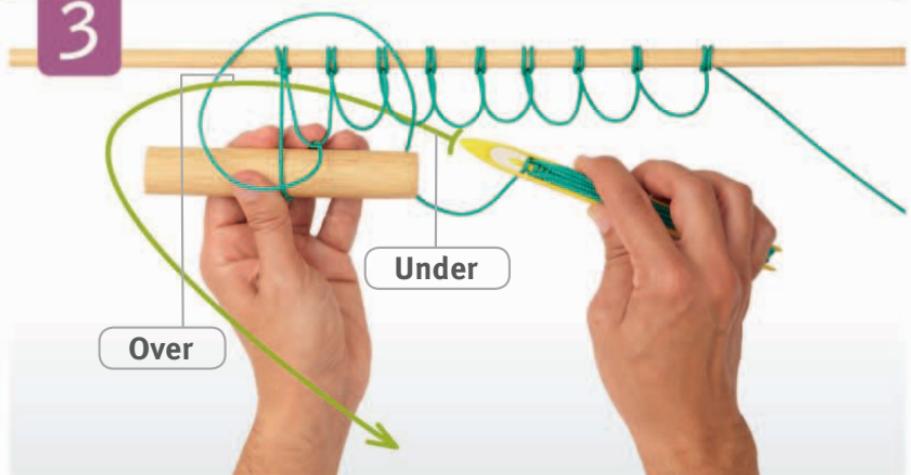
Over

Flip to make loop

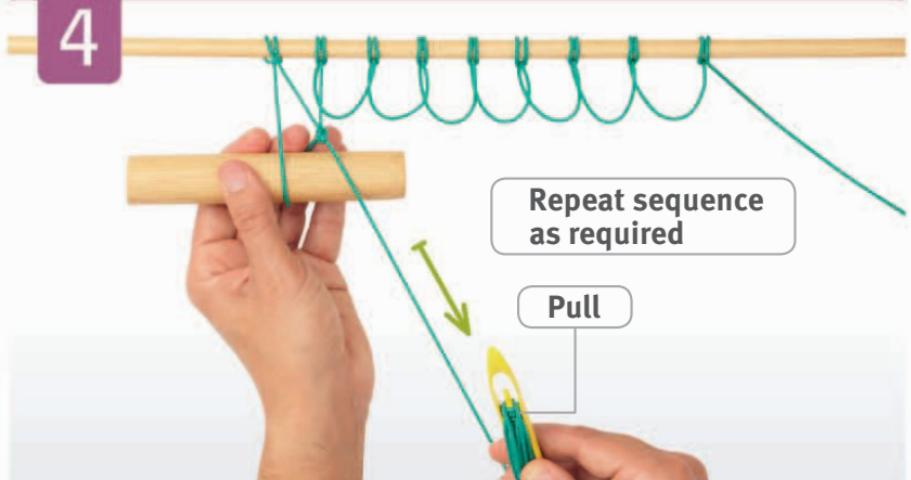


284 LOOPS

3

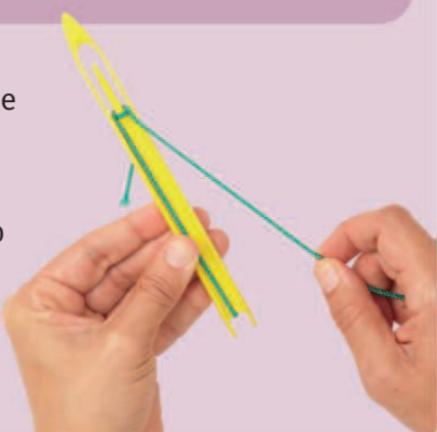


4



Loading a needle

- Tie a half hitch with the line around the spike in the middle of the needle.
- Pass the long end of the line under the needle and back up the other side.
- Loop the line around the spike and back under the needle; repeat until finished.



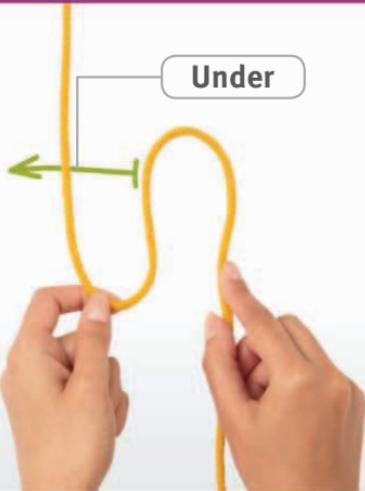


Cargo Net Knot

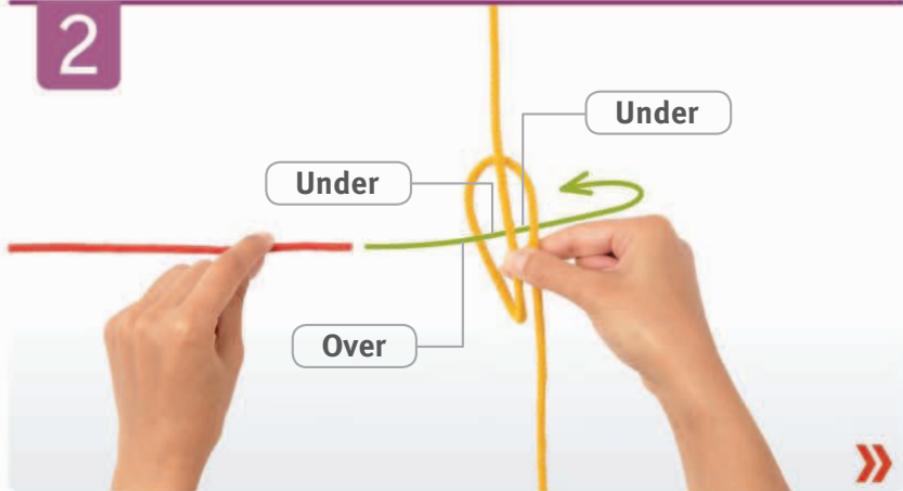
- Used to make a square net from heavy rope.
- Tied with one long rope and one shorter rope.
- Lay the long rope vertically and the short rope horizontally.



1



2

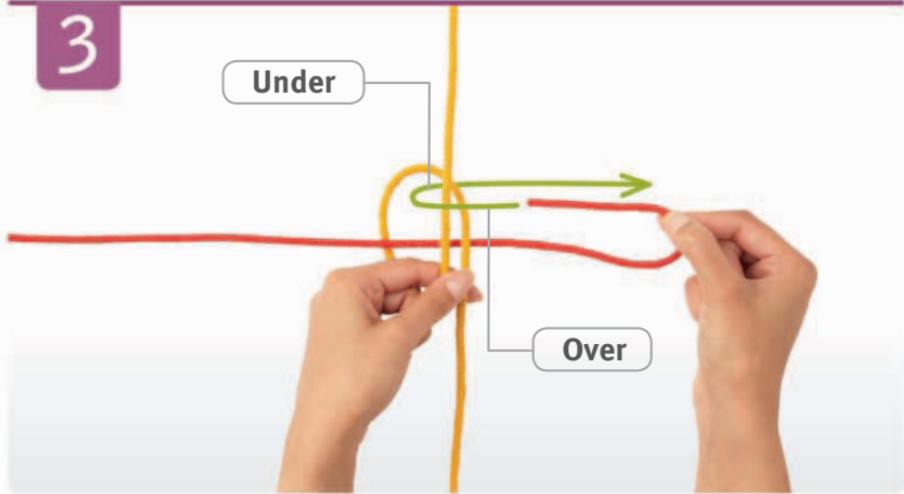


286 LOOPS

3

Under

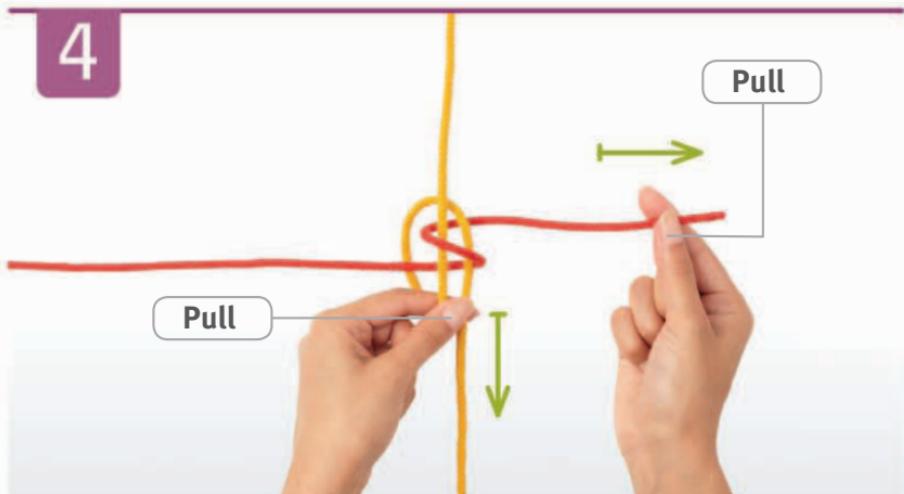
Over



4

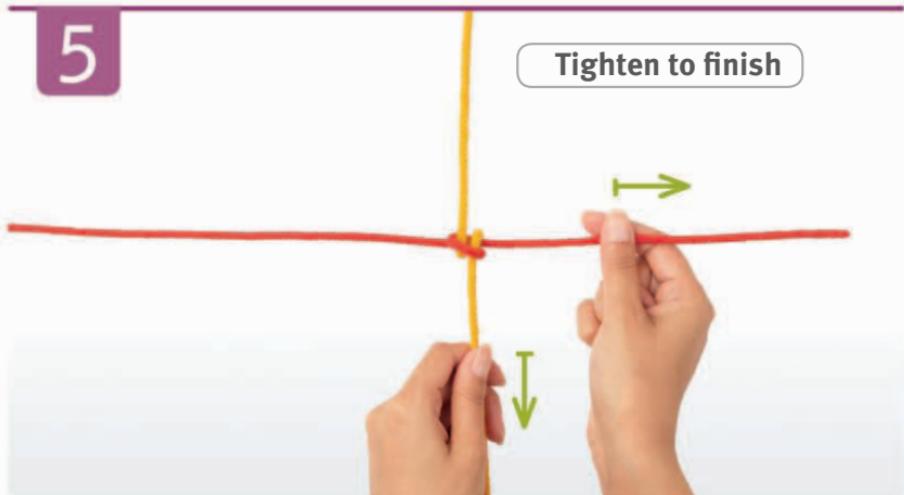
Pull

Pull



5

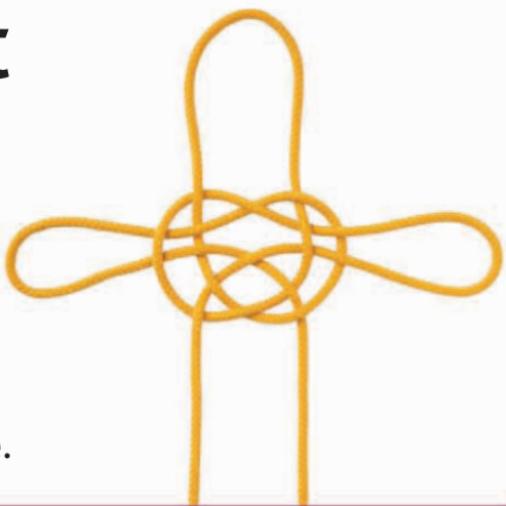
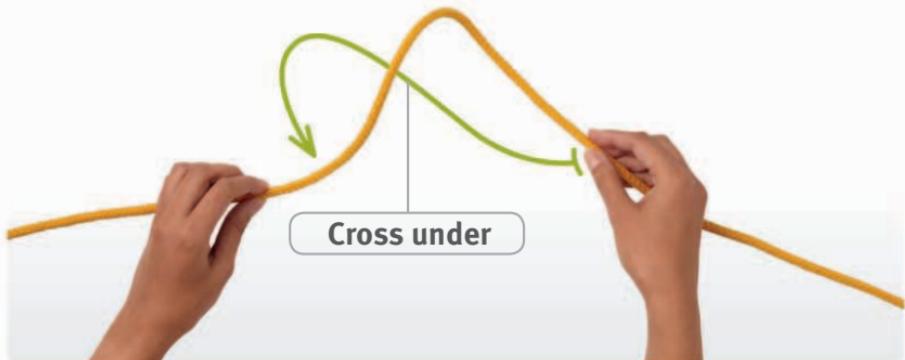
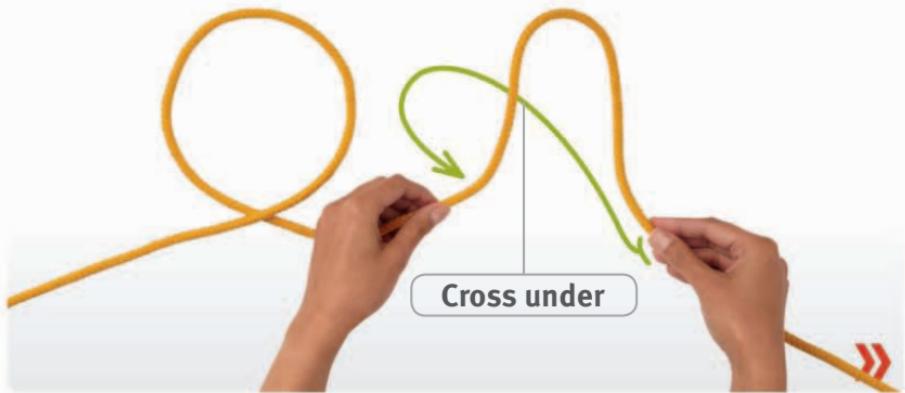
Tighten to finish





Jury Mast Knot

- A simple technique for tying a multiple loop knot.
- Not suitable for use in thick rope.
- Can be difficult to untie.

**1****2**

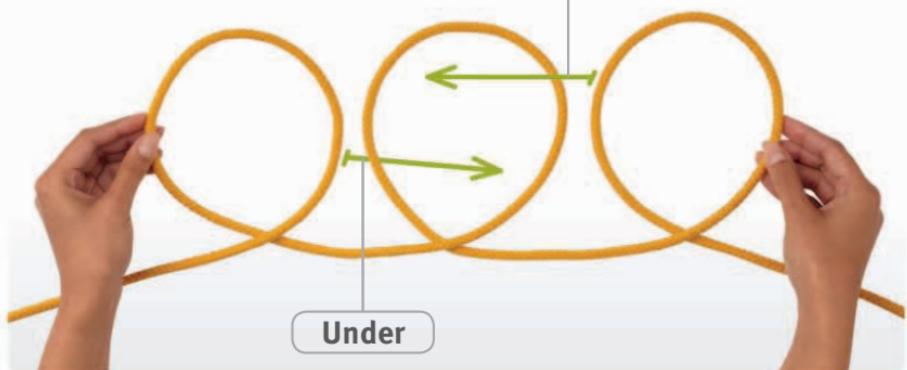
288 LOOPS

3



Cross under

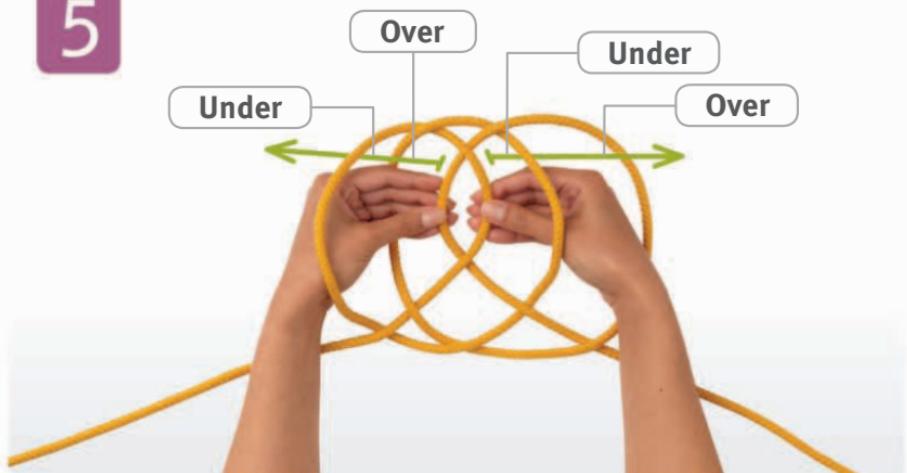
4



Over

Under

5



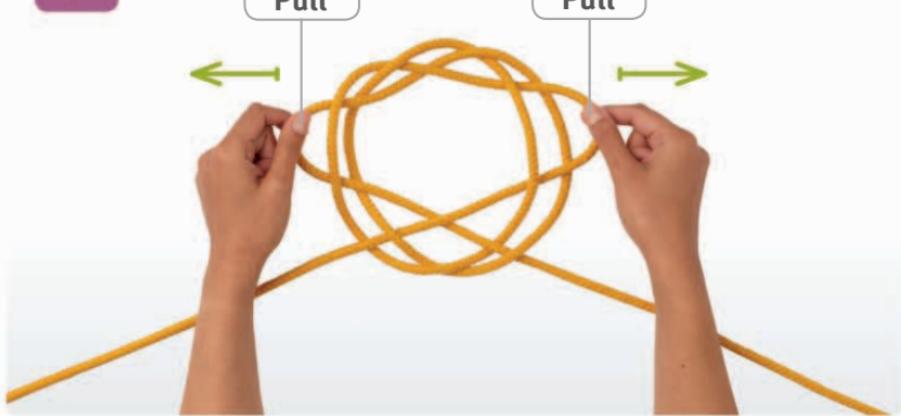
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Under

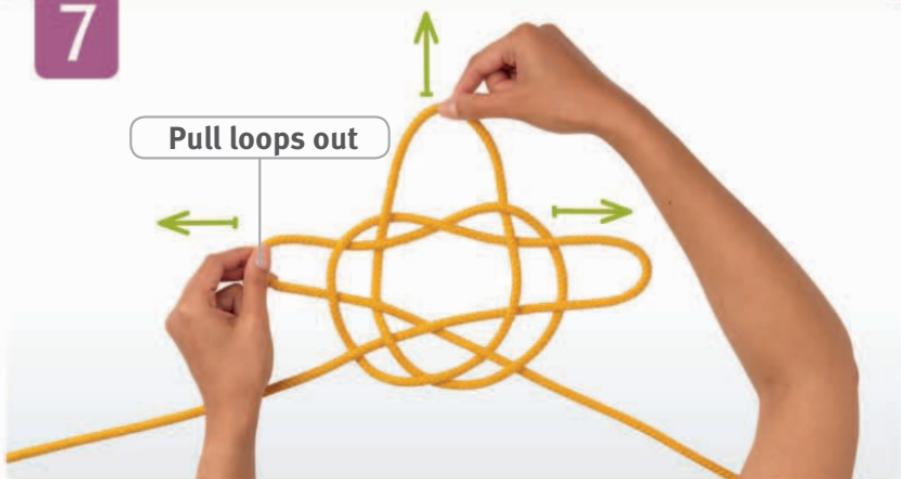
Under

Over

6



7

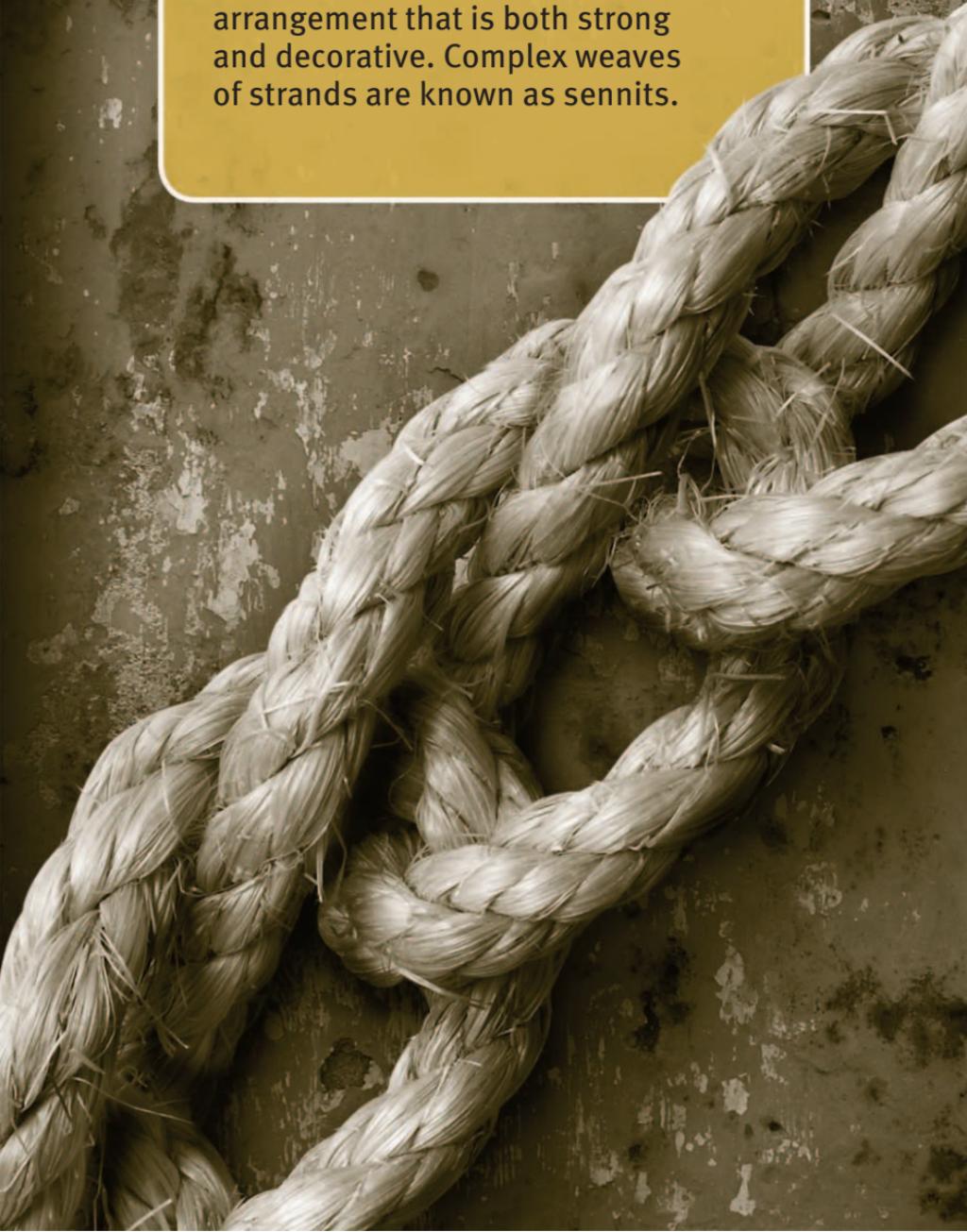


8



Braids and Sennits

A braid is used to interweave strands of rope or fine line into an arrangement that is both strong and decorative. Complex weaves of strands are known as sennits.

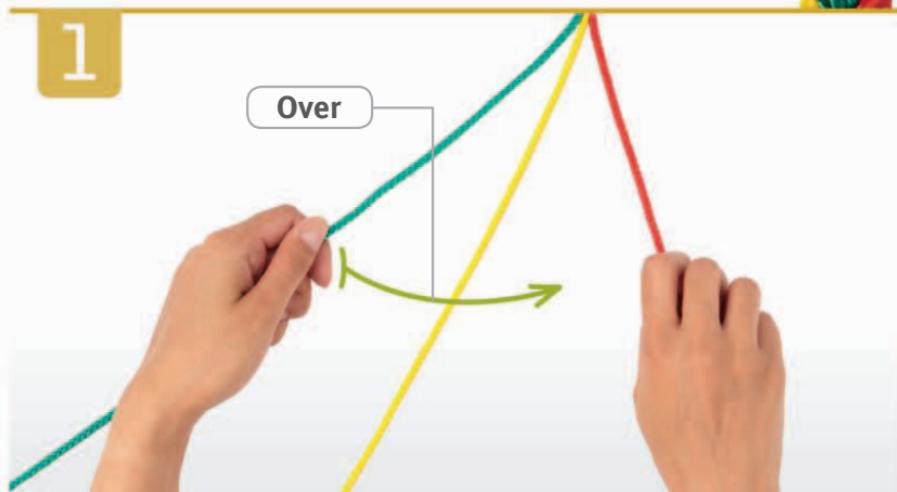
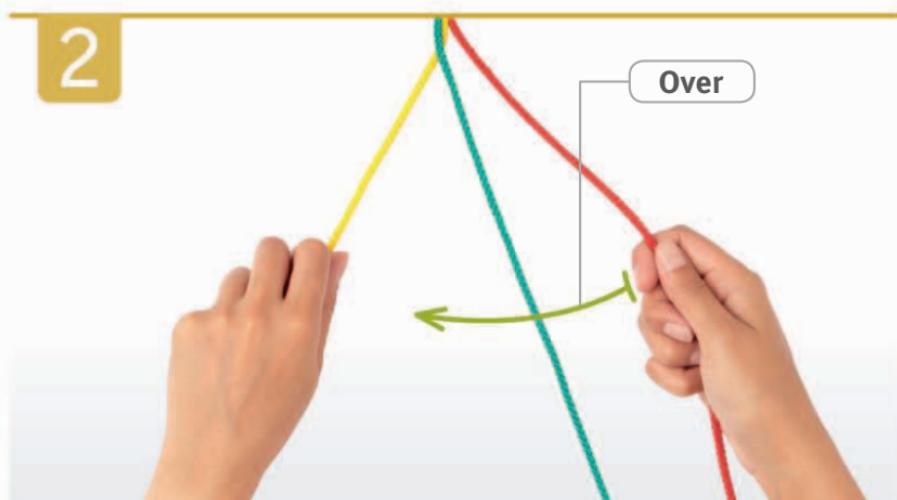






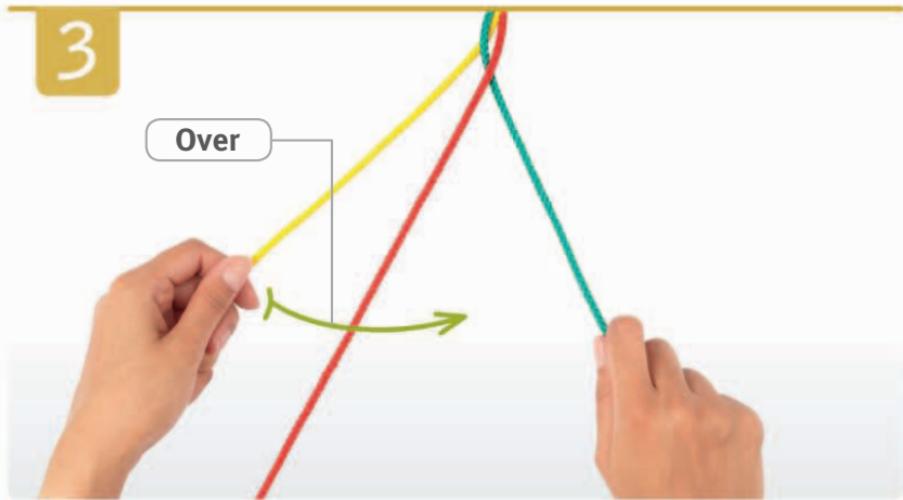
Three-Strand Flat Braid

- The simplest of braids.
- Bind one end of the strands together (see pp.374–75) before starting.
- Move alternate outer strands to the middle of the braid.
- Keep all the strands flat and tight as you braid.

**1****2**

3

Over



4

Repeat sequence
as required

Over



5

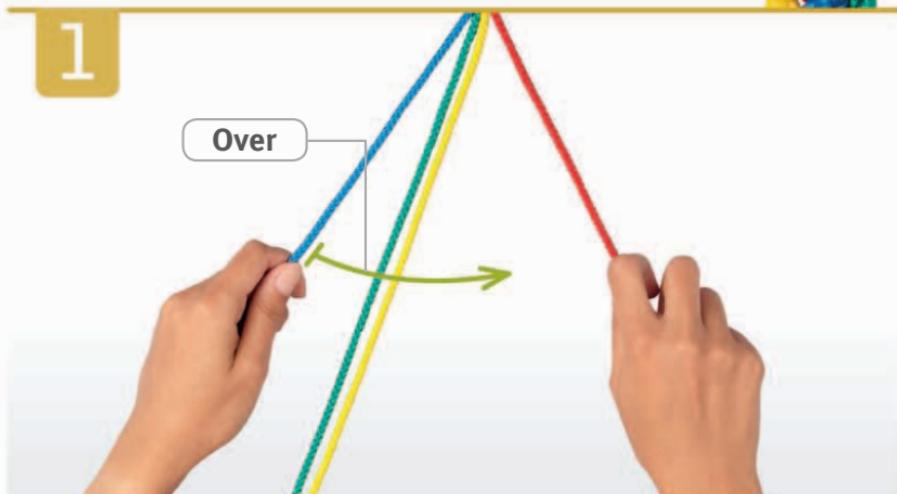
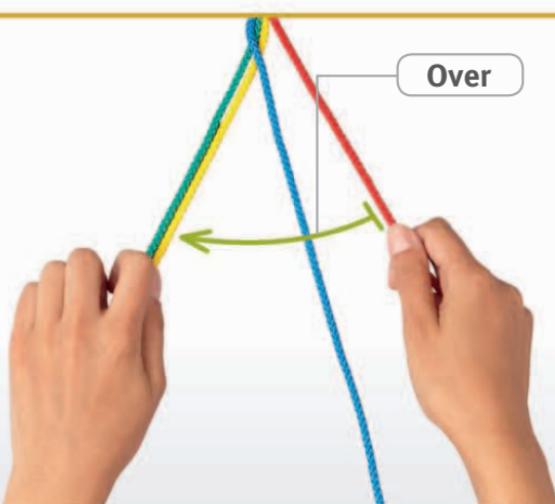
WHIP (»pp.374–75) STRANDS TOGETHER TO FINISH





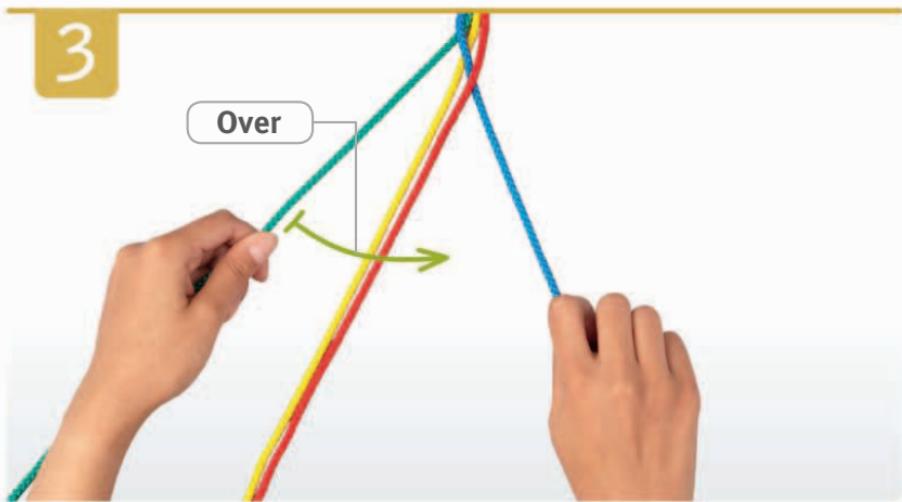
Four-Strand Flat Braid

- Forms an asymmetric flat braid.
- More decorative than the Three-Strand Flat Braid (see pp.292–93).
- Bind one end of the strands together (see pp.374–75) before starting.
- Keep all the strands flat and tight as you braid.

**1****Over****2****Over**

3

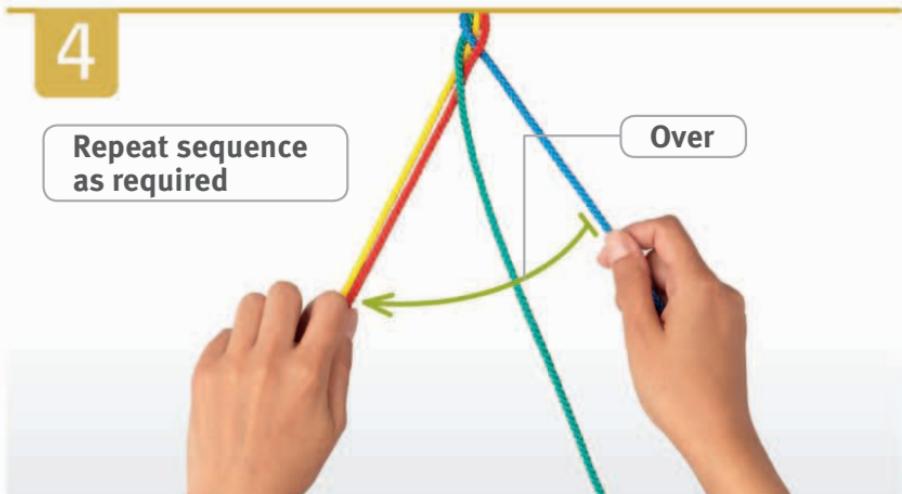
Over



4

Repeat sequence
as required

Over



5

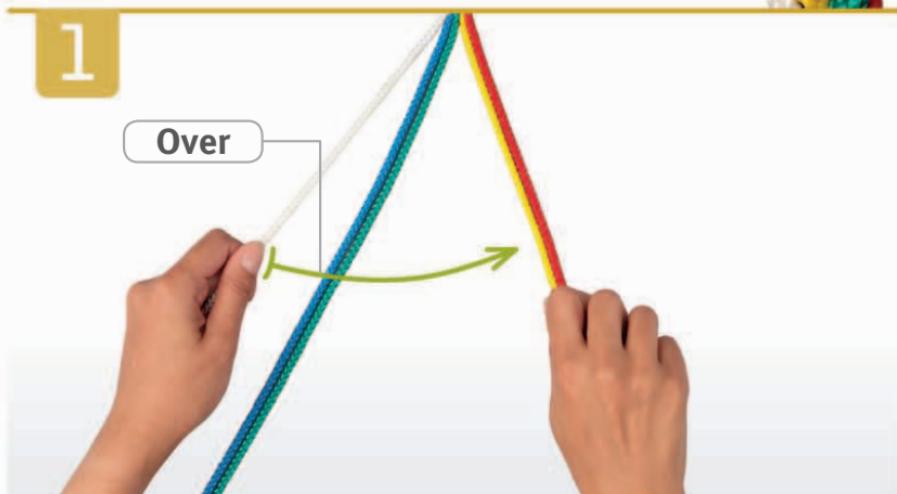
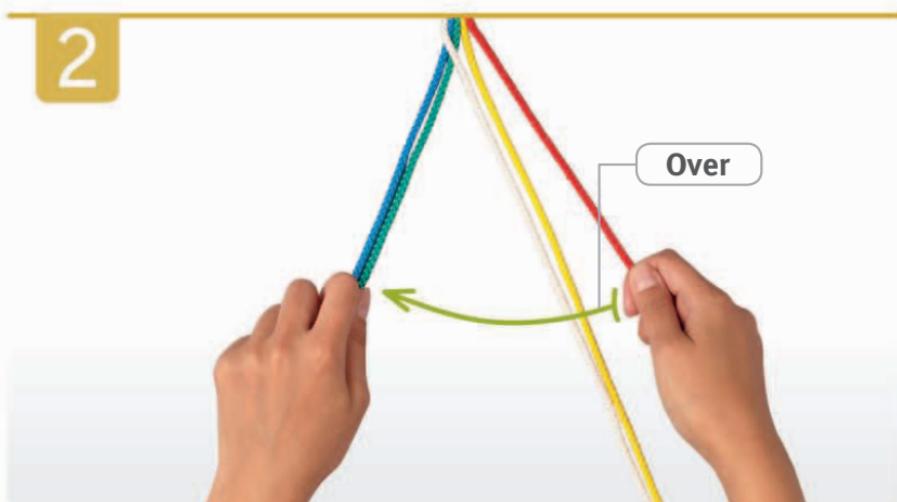
WHIP (»pp.374–75) STRANDS TOGETHER TO FINISH





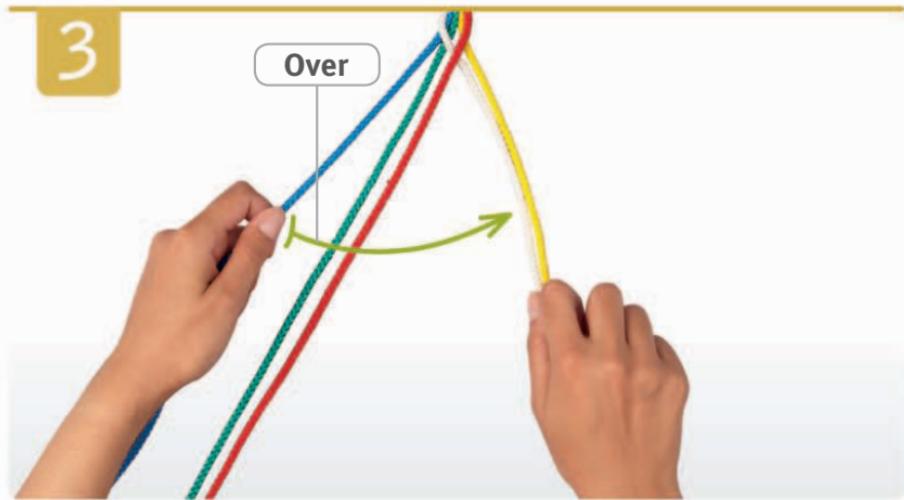
Five-Strand Flat Braid

- Move alternate outer strands to the middle of the braid.
- Bind one end of the strands together (see pp. 374–75) before starting.
- Keep all the strands flat and tight as you braid.

**1****2**

3

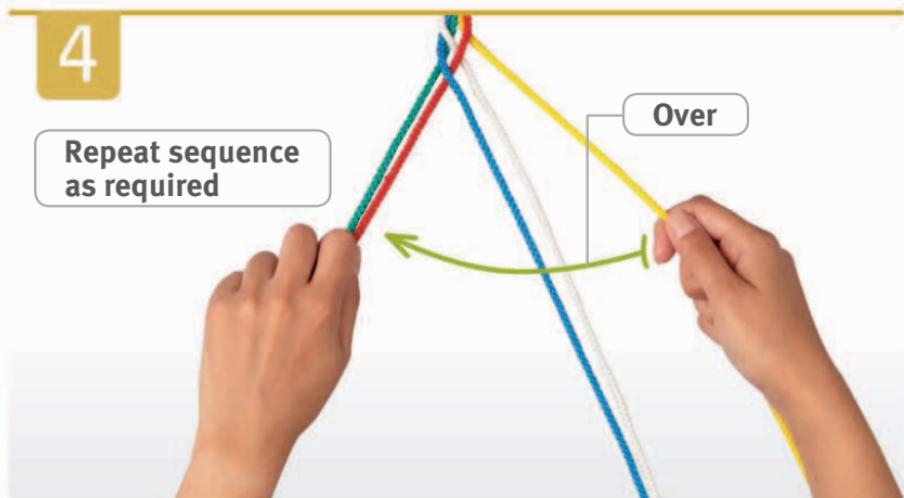
Over



4

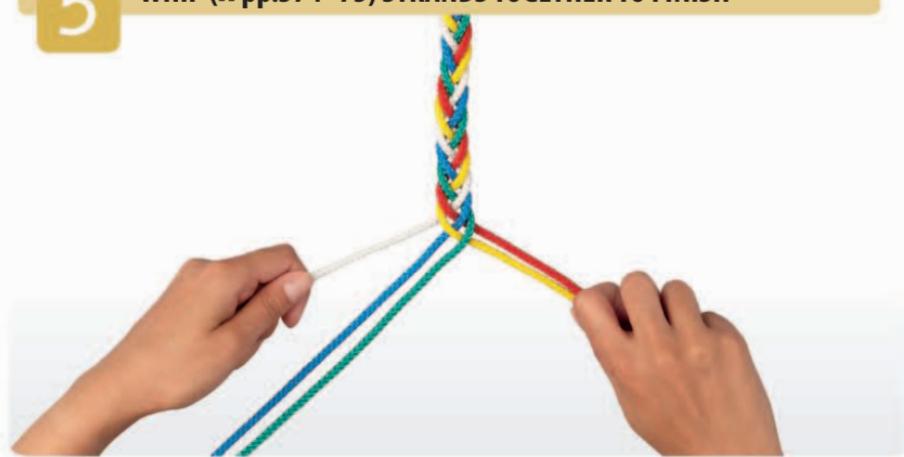
Repeat sequence
as required

Over



5

WHIP (»pp.374–75) STRANDS TOGETHER TO FINISH





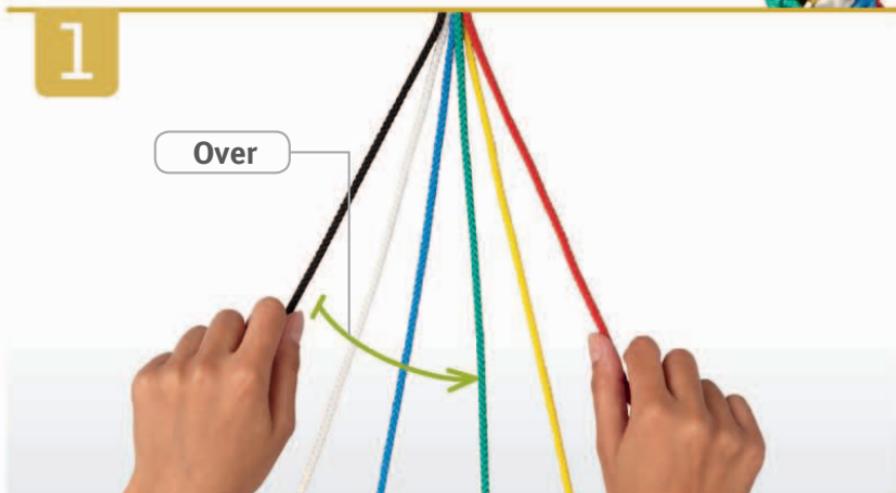
Six-Strand Flat Braid

- Forms a large, asymmetrical decorative braid.
- Bind one end of the strands together (see pp.374–75) before starting.
- Keep all the strands flat and tight as you braid.



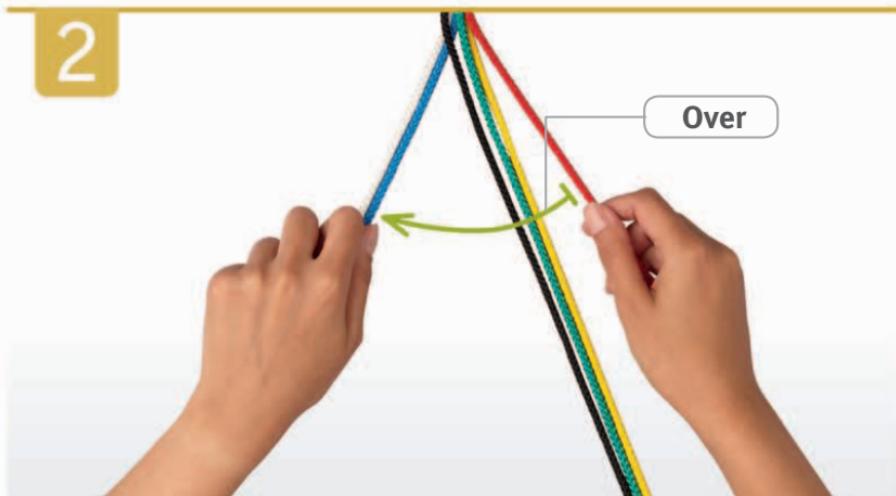
1

Over



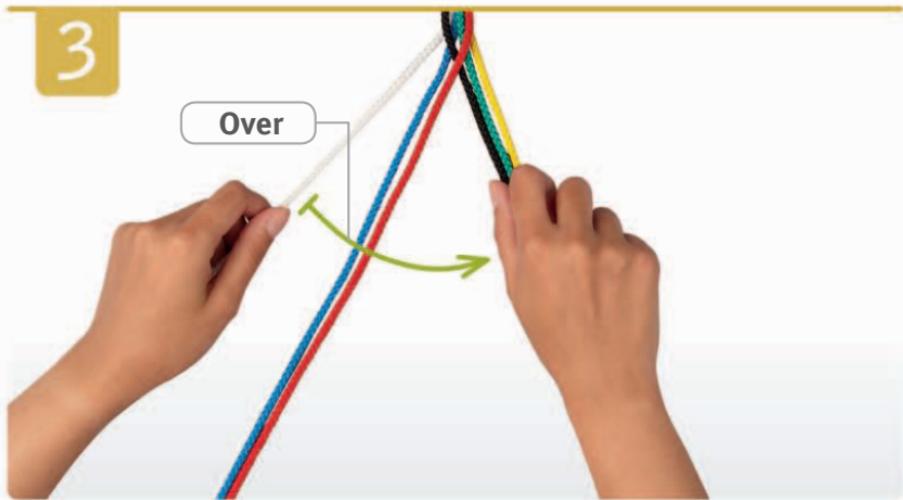
2

Over



3

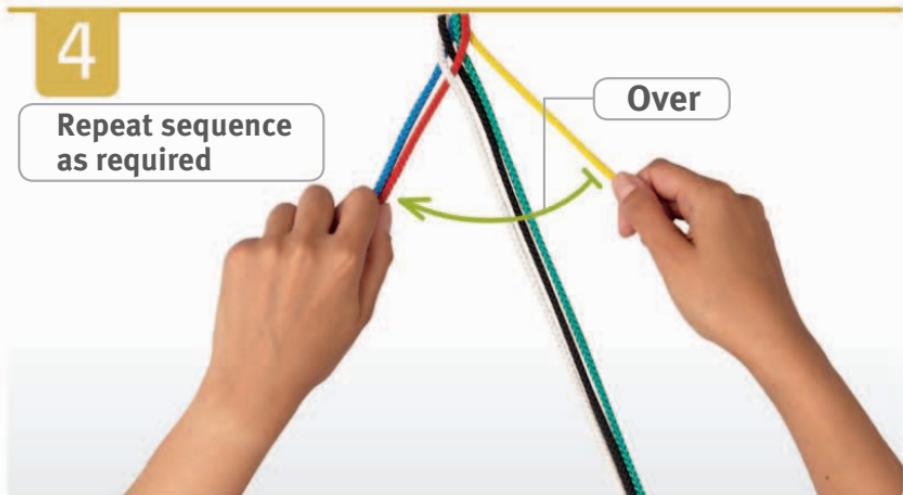
Over



4

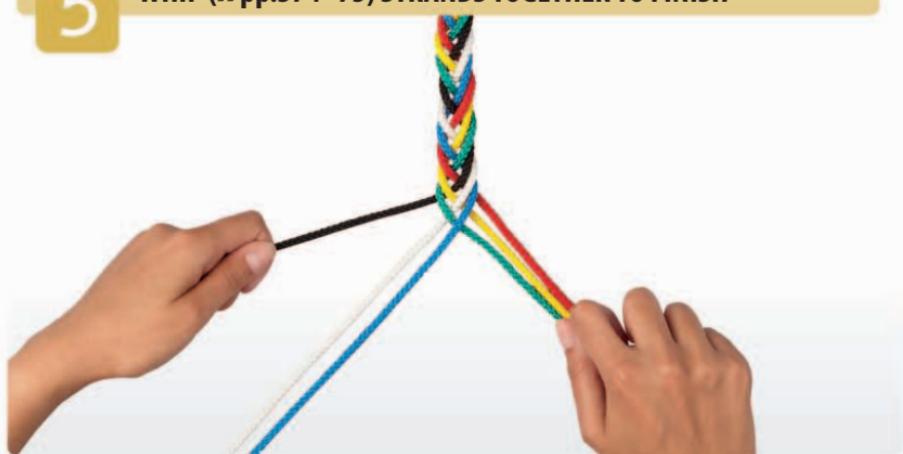
Repeat sequence
as required

Over



5

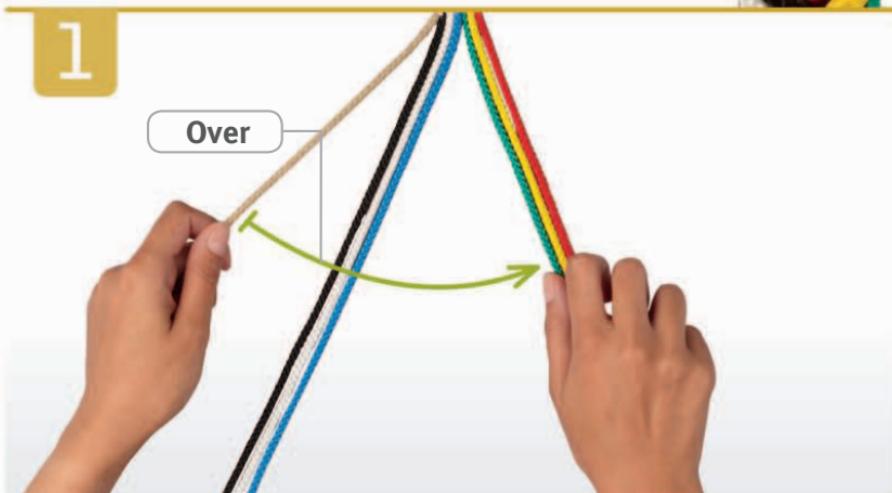
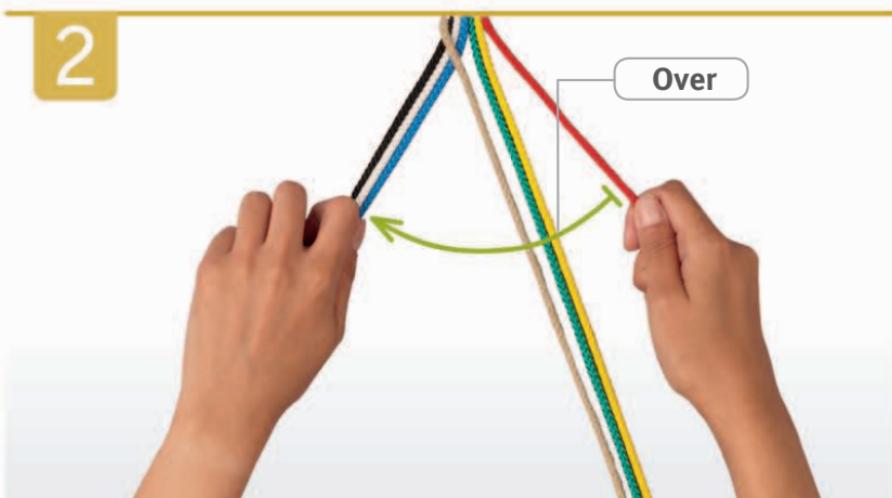
WHIP (»pp.374–75) STRANDS TOGETHER TO FINISH





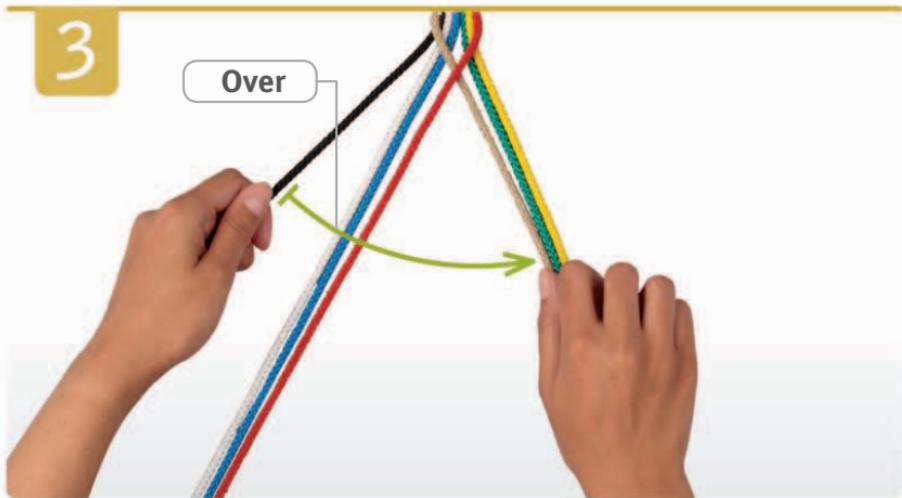
Seven-Strand Flat Braid

- Used to form a large decorative braid.
- The largest number of strands with which it is practical to make a braid.
- Bind one end of the strands together (see pp.374–75) before starting.
- Keep the strands flat and tight as you braid.

**1****Over****2****Over**

3

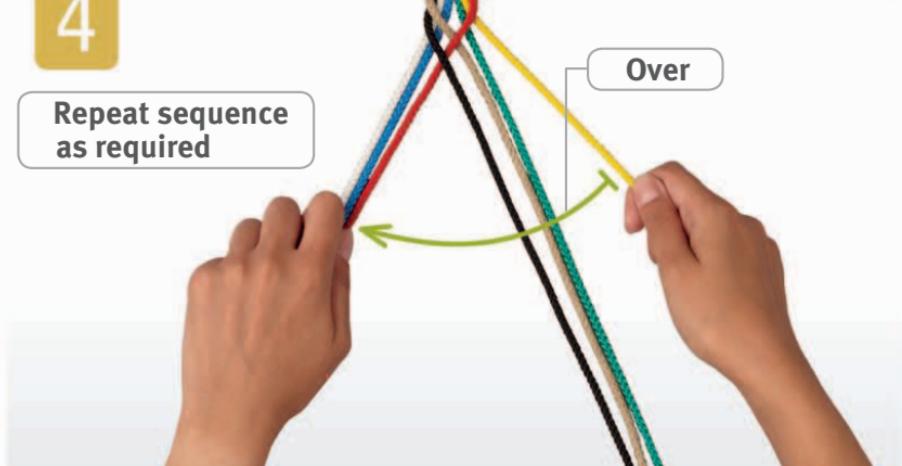
Over



4

Repeat sequence
as required

Over



5

WHIP (»pp.374–75) STRANDS TOGETHER TO FINISH





BEST FOR ... Gifts

There are a number of knots that are decorative as well as practical. They are ideal for making attractive and useful gifts.

Monkey's Fist » pp.49–53

✓ A decorative ball knot that is perfect for making a key fob. Seize (see pp.387–89) a loop on the end to attach the keys.

✓ Can also be turned into a doorstop—simply tie the knot with large rope, and place a weight in its center.



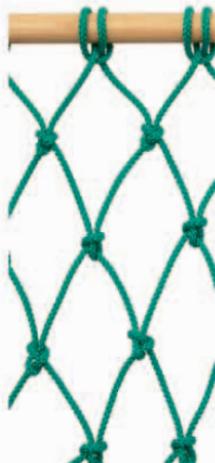
Similar knots:
» pp.62–71
Manrope Knot

Basic Net » pp.283–84

✓ Used to make a durable, lasting net.

✓ The finished net can be as large or small as you want, and may be used for storage or even as part of a hammock.

✗ Requires the use of a netting needle (see p.19).



Similar knots:
» pp.285–86
Cargo Net Knot

True Lover's Knot

» pp.80–81

✓ One of many knots used as a symbol of binding love between two people.

✓ Can be mounted in a frame to make a wedding present.

✓ The two Overhand Knots (see pp.28–29) are separate but interlinked.



Similar knots:
» pp.82–84
Sailor's Cross



Square Crown Sennit » pp.330–31

- ✓ Easily made into a bracelet or belt.
- ✓ Highly decorative, but relatively simple to make.
- ✓ A core can be added to the center of the sennit to create a key fob.



Similar knots:
» pp.327–29
Six-Strand Round Crowning

Turk's Head—Four-Lead Five-Bight

» pp.128–32

- ✓ Can be used to make a decorative napkin ring.
- ✓ Can also be flattened to make a small mat or coaster.
- ✓ The knot's structure can be stiffened by covering the inside of it with PVA glue.



Similar knots:
» pp.117–23
Turk's Head—Three-Lead Four-Bight

Oval Mat » pp.311–15

- ✓ Can be used to make a coaster, place mat, or doormat.
- ✓ Thinner rope is best for a coaster or table mat, thicker rope is needed for a doormat.
- ✓ The pattern can be doubled or tripled, as required.

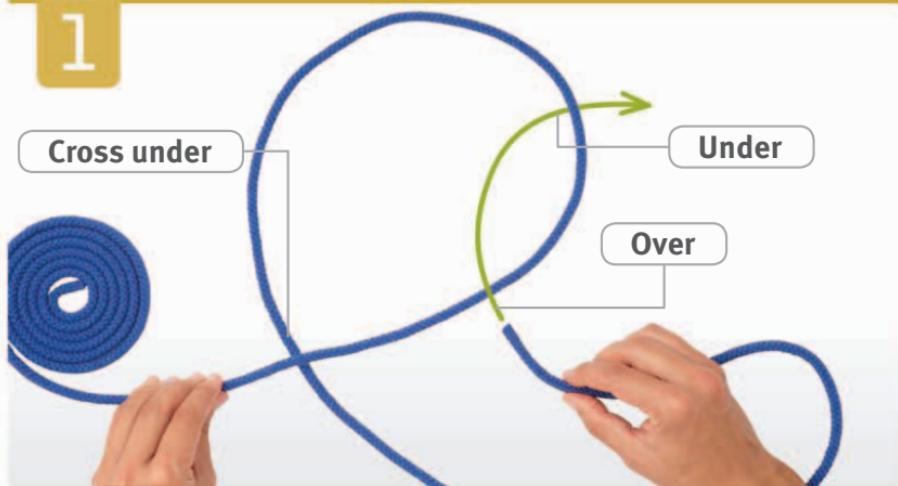


Similar knots:
» pp.306–10
Ocean-Braid Mat

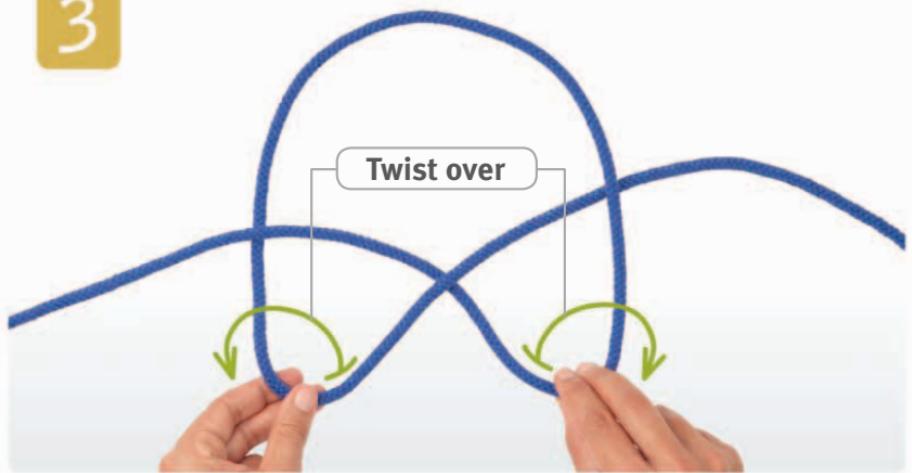


Ocean-Braid Mat

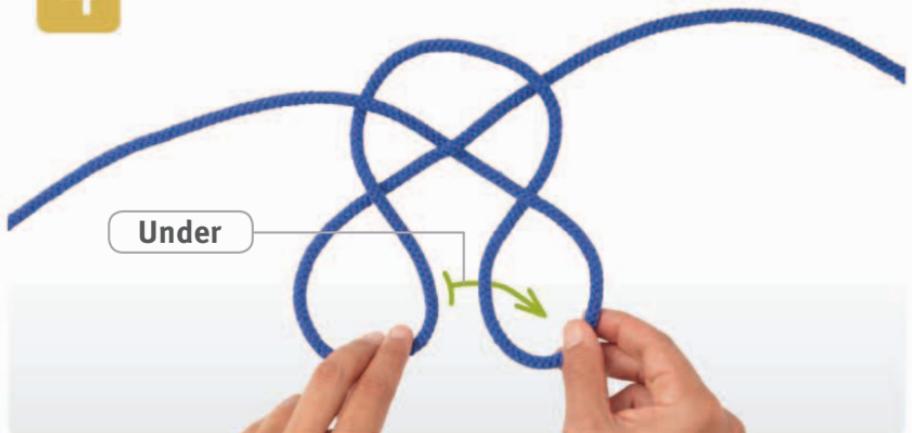
- Used to make a decorative mat.
- Tie loosely before working into a neat, taut final shape.
- Follow the pattern around two, three, four, or even five times to make a larger mat.

**1****2**

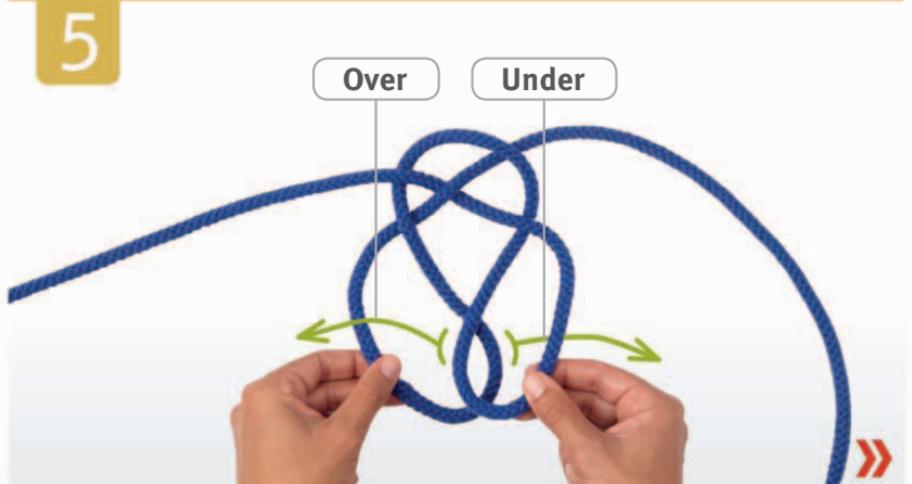
3



4



5

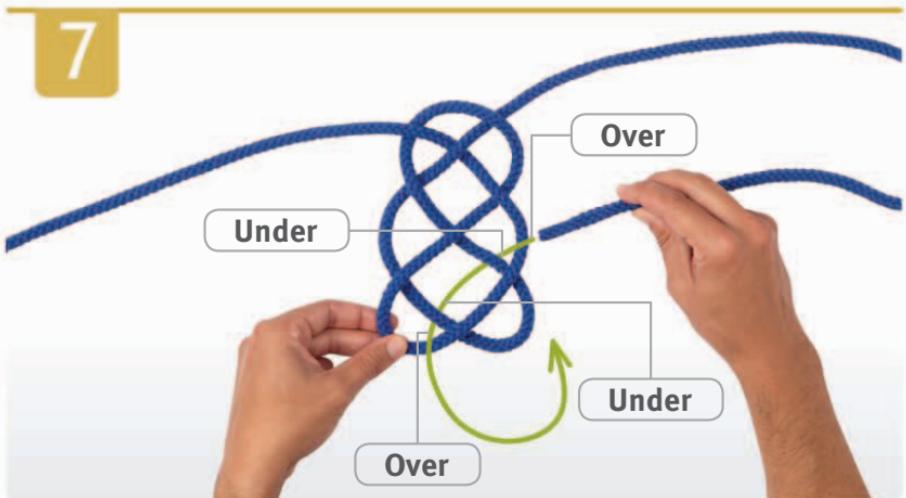


6

Make crossed strands even



7



8

Make crossed strands even

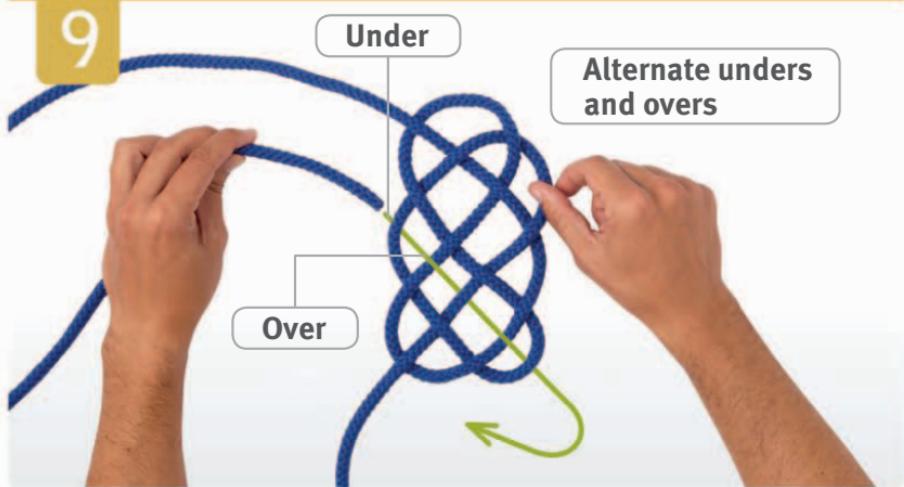


9

Under

Alternate unders
and overs

Over



10

Begin to double

Under

Alternate overs
and unders

Over

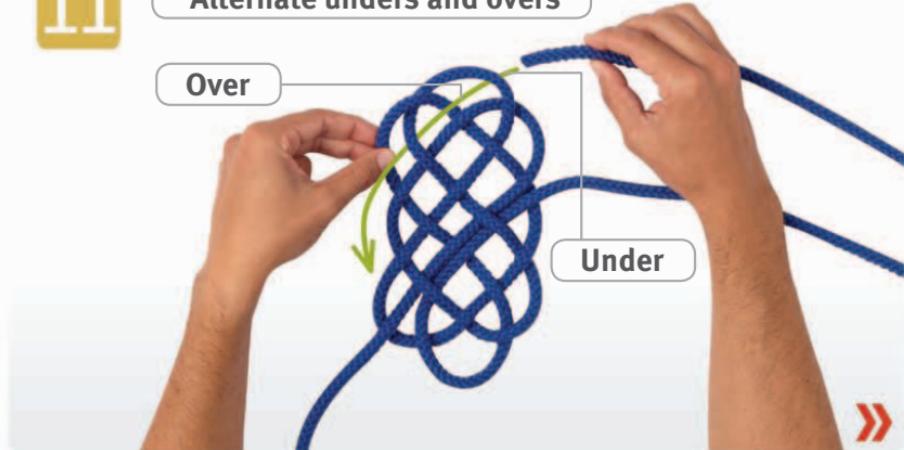


11

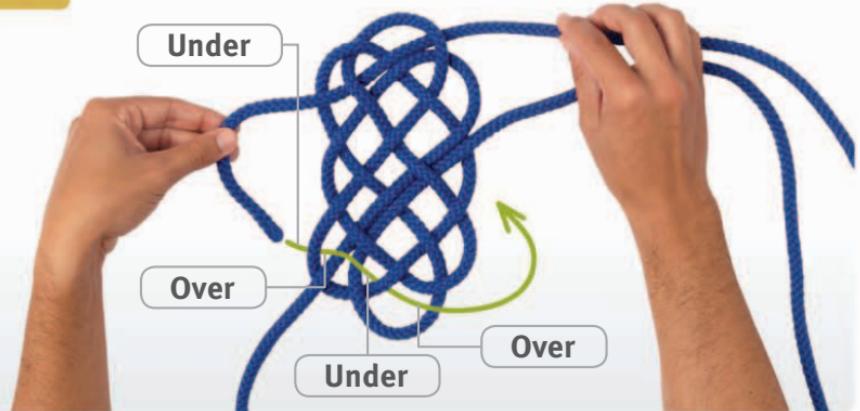
Alternate unders and overs

Over

Under

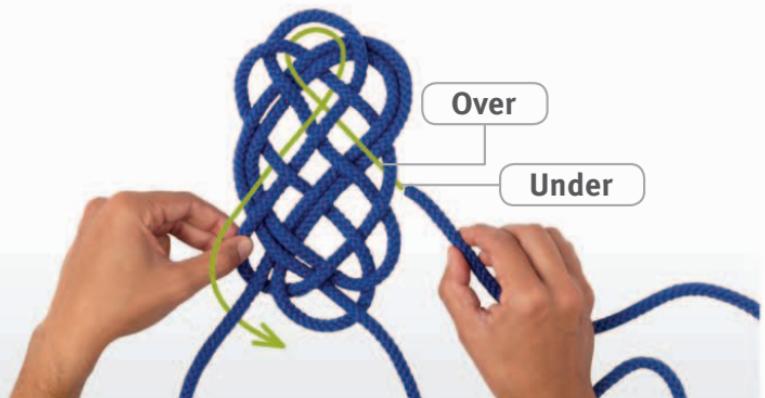


12



13

Alternate unders and overs



14

Follow around
again or trim
and tuck to finish



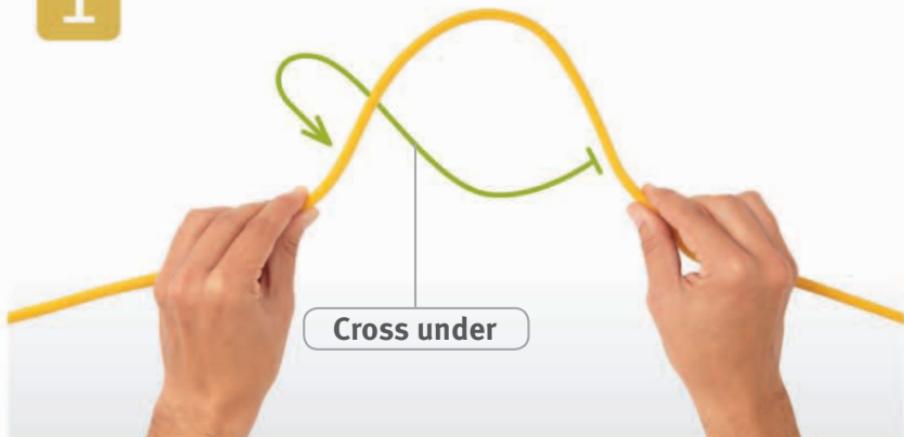


Oval Mat

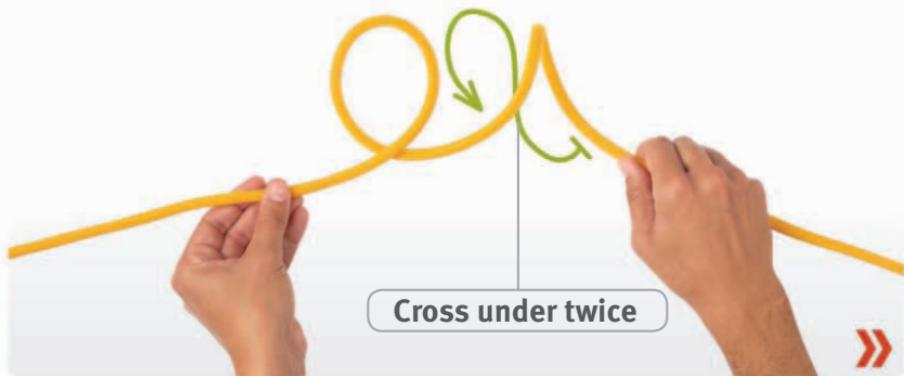
- Used to make a decorative mat.
- Use thin rope for a table mat and thick rope for a doormat.
- Pattern can be followed around three or more times.
- Requires a large amount of rope.



1



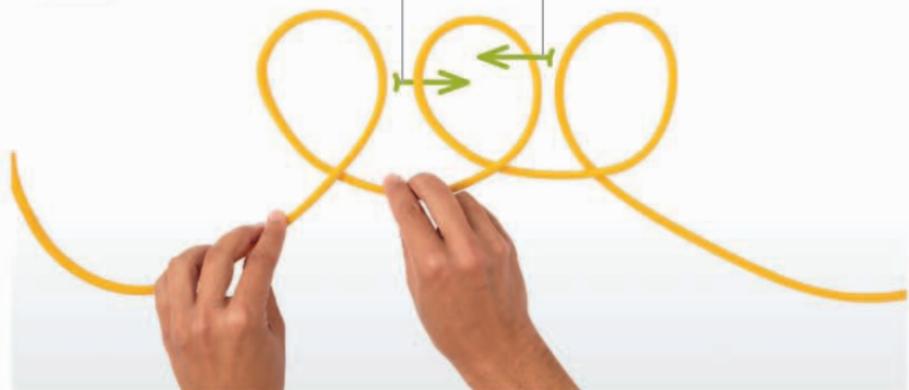
2



3

Under

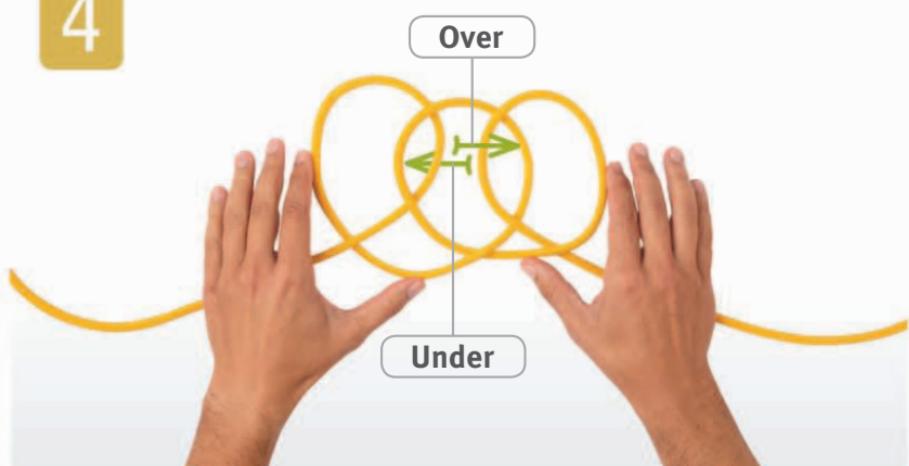
Over



4

Over

Under

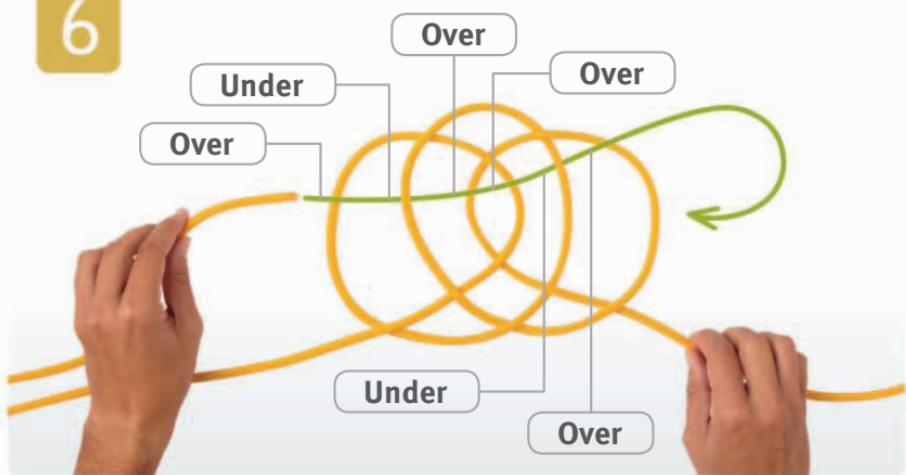


5

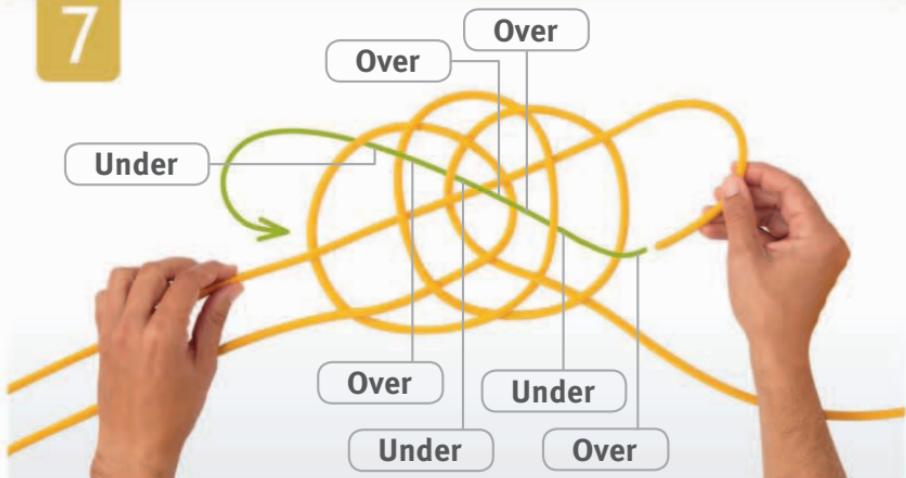
Arrange crossing turns



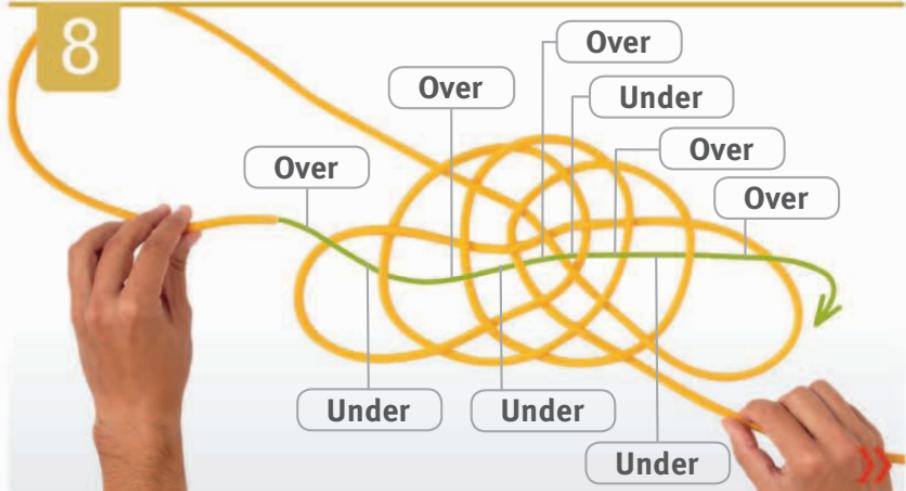
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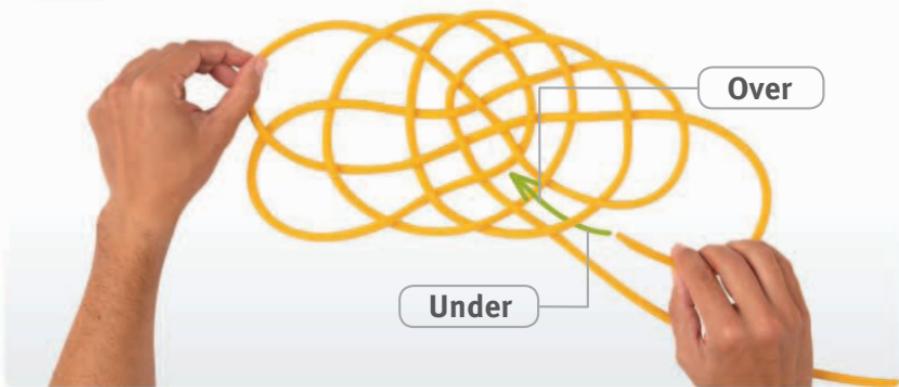
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8

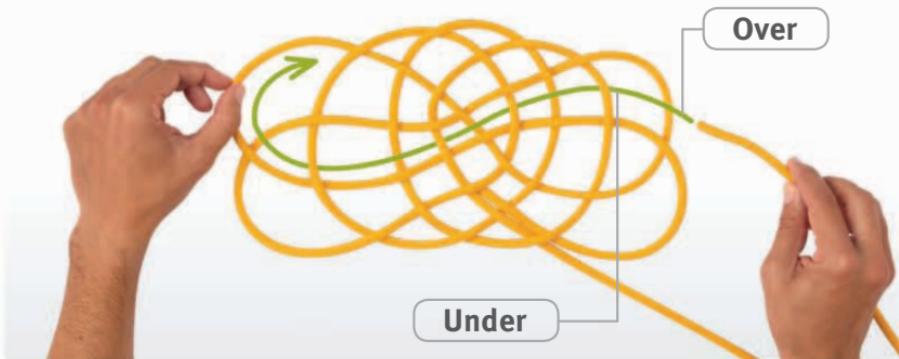


9



10

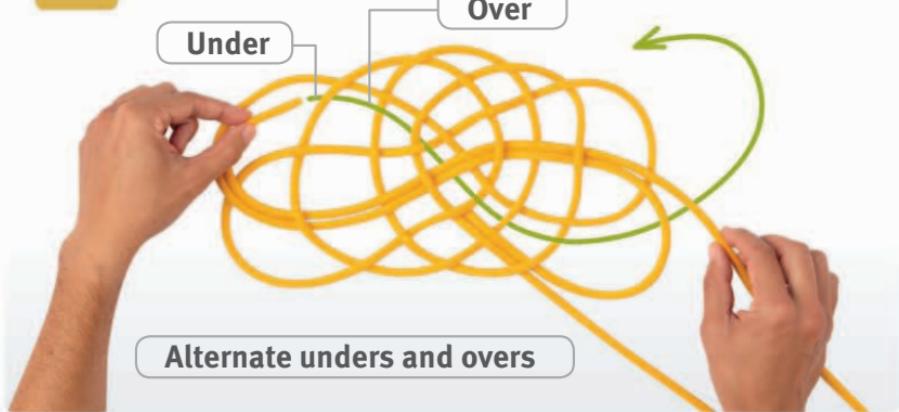
Start to double with long end, alternating overs and unders



11

Under

Over



12

Under

Over

Alternate overs and unders

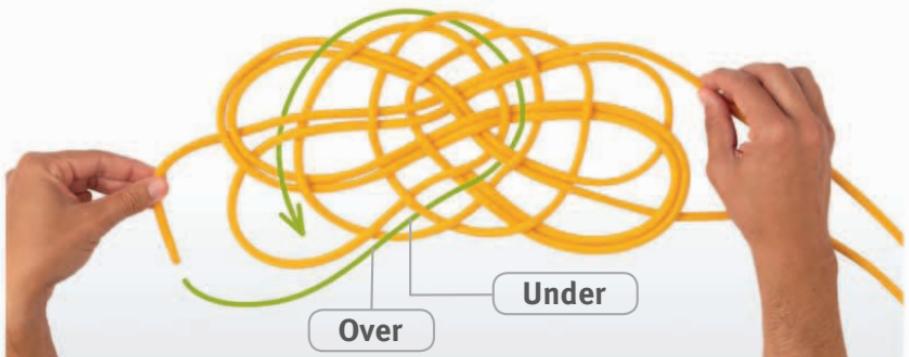


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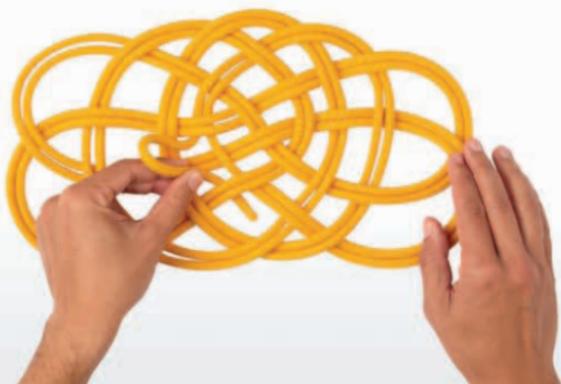
Alternate overs and unders

Over

Under



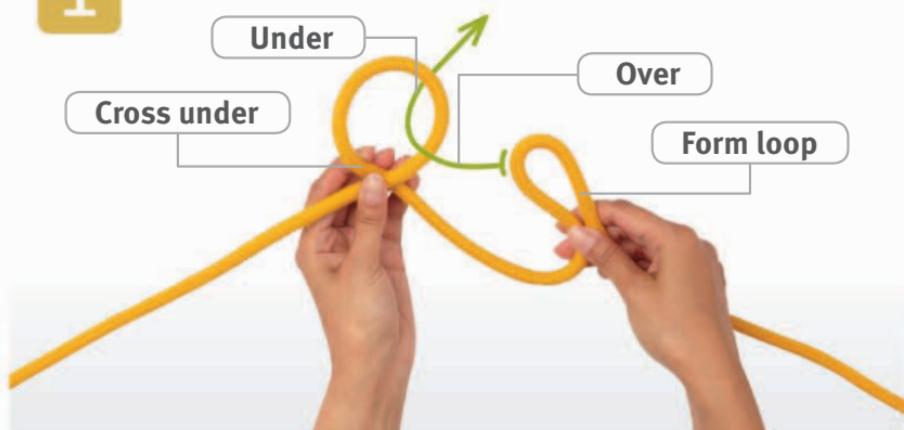
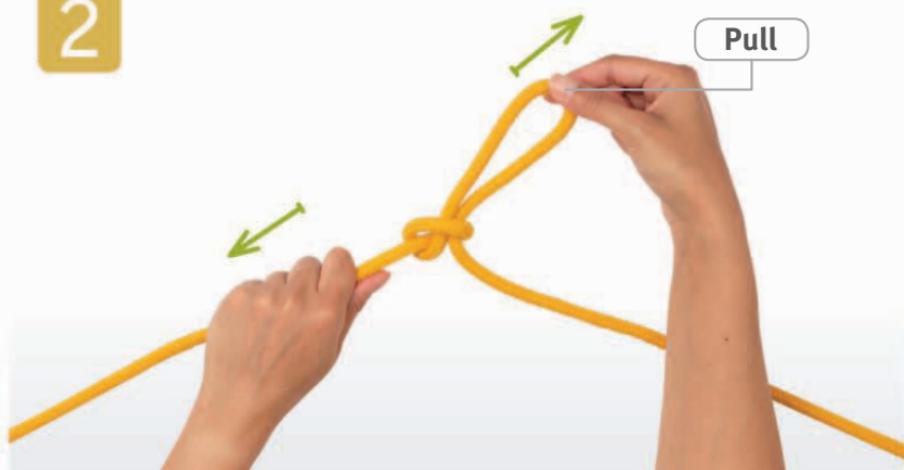
14

Follow around again or
trim and tuck to finish

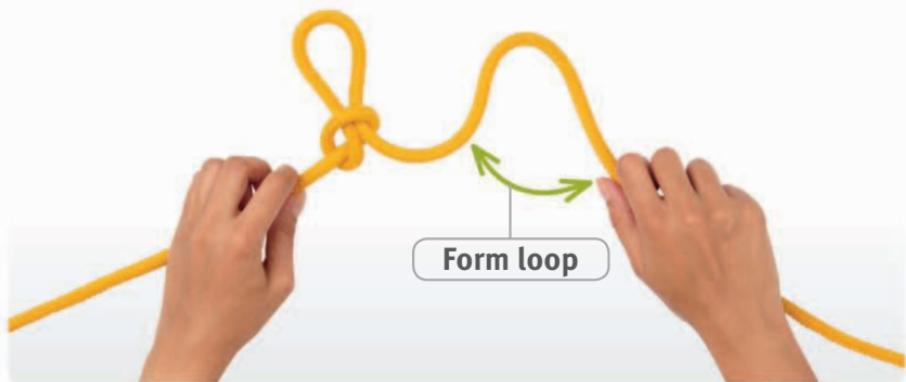


Chain Sennit

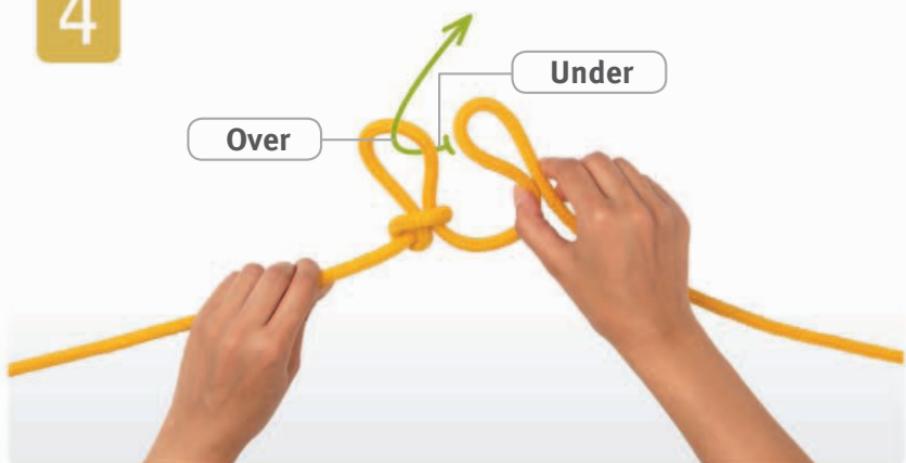
- Forms interlinked loops to shorten a rope.
- Also used by climbers to prevent rope from getting tangled.
- Work tight before moving on to the next step.
- Also known as the Drummer's Braid.

**1****2**

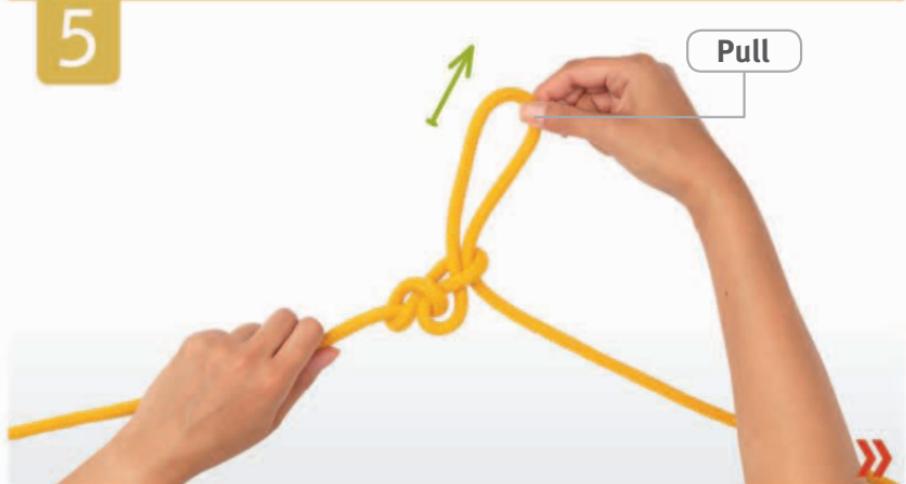
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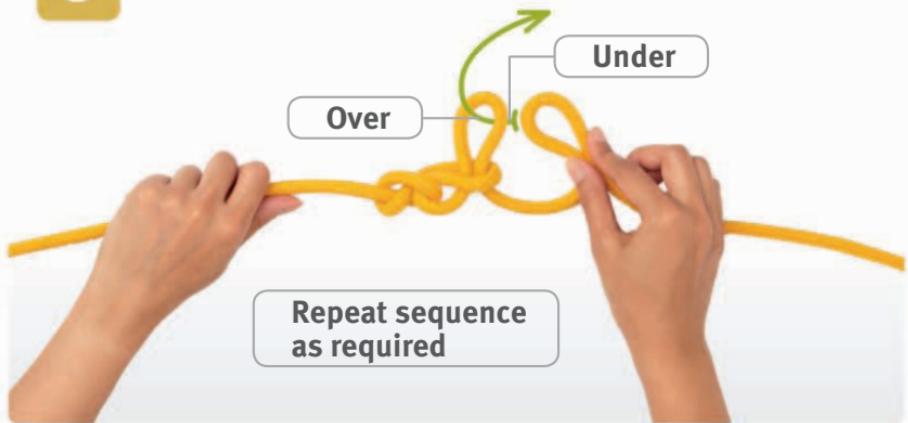
4



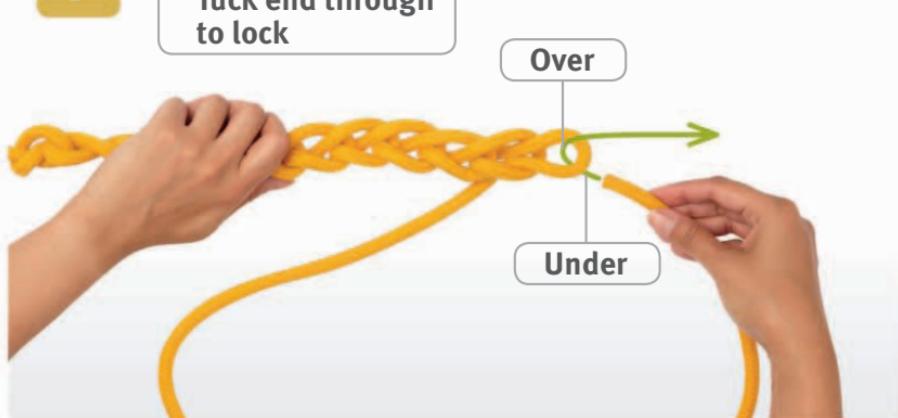
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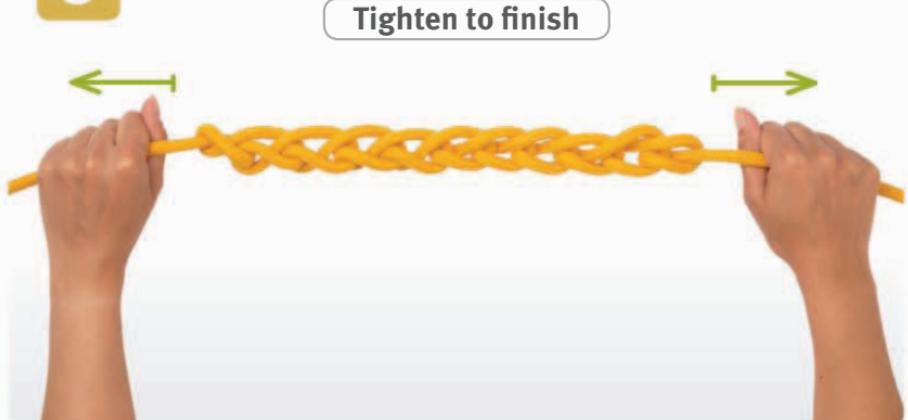
6



7



8





Four-Strand Round Sennit

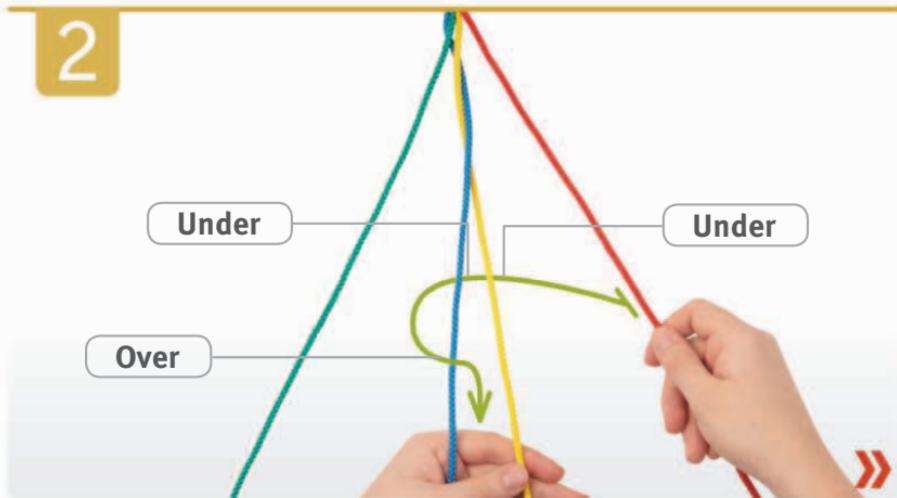
- The simplest of the round braids.
- Bind one end of the strands together (see pp.374–75) before starting.
- Keep all the strands tight as you braid.
- Be sure that you untangle the working ends regularly.



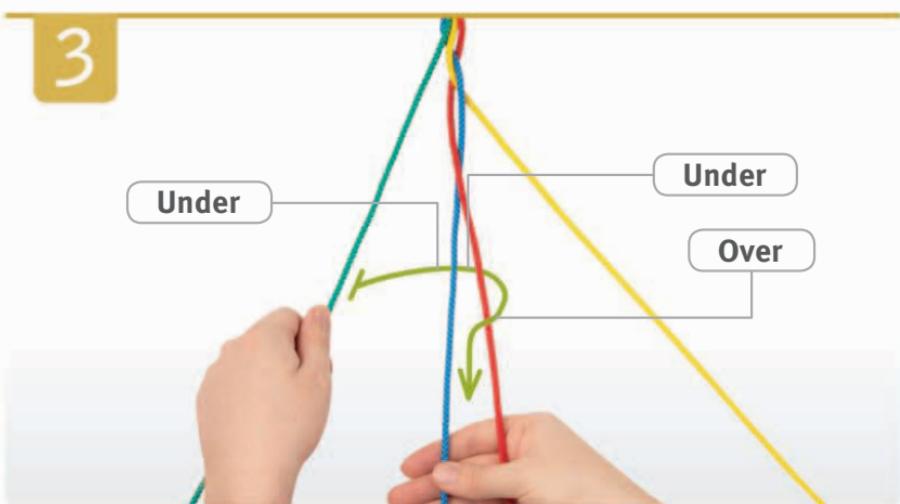
1



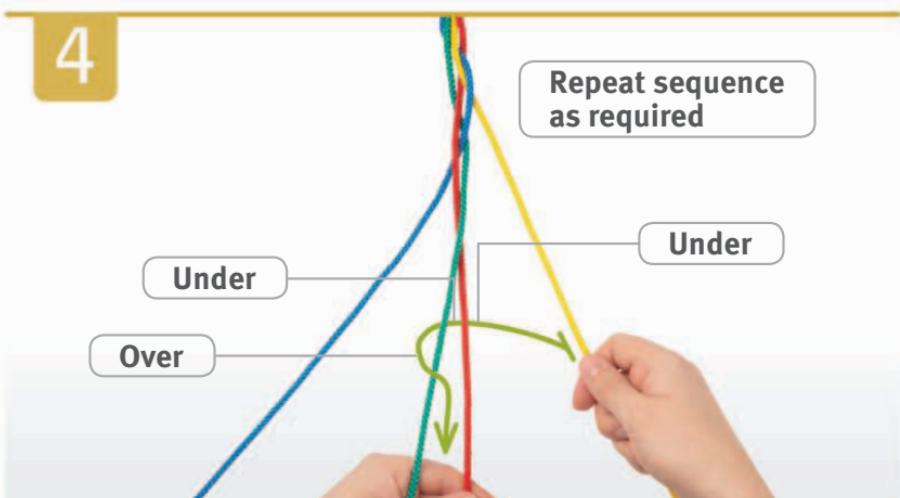
2



3



4



5

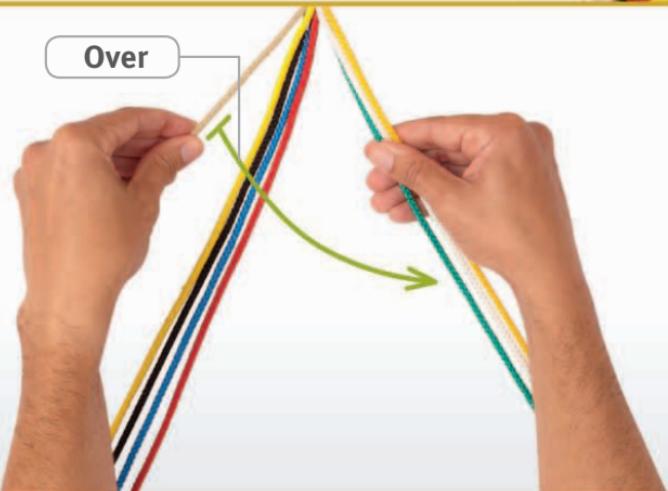
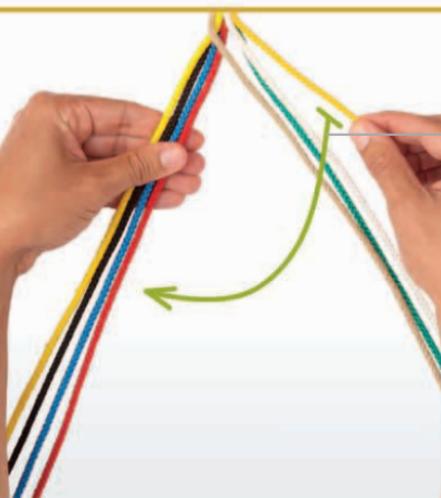
WHIP (»pp.374–75) STRANDS TOGETHER TO FINISH





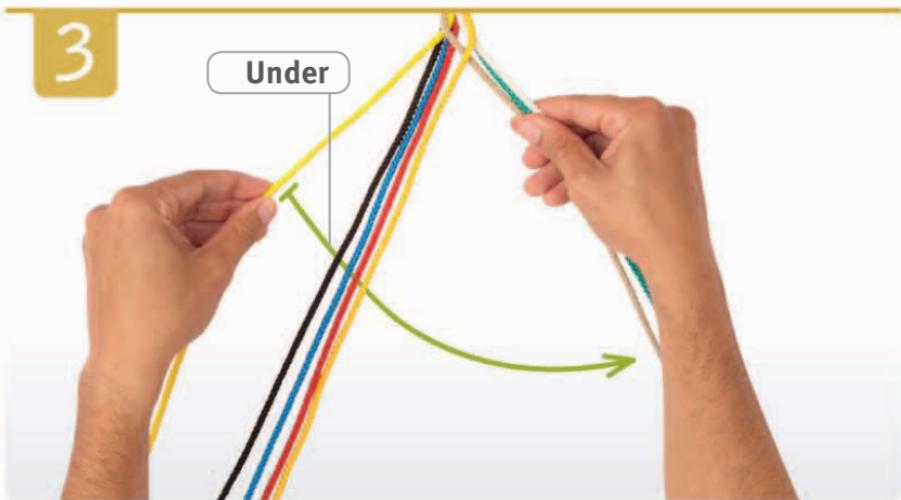
Eight-Strand Square Sennit

- A highly decorative sennit.
- Bind one end of the strands together (*see pp.374–75*) before starting.
- Move alternate outer strands to the middle of the braid.
- If you stop while tying, ensure that you start at the correct point in the sequence.

**1****Over****2****Over**

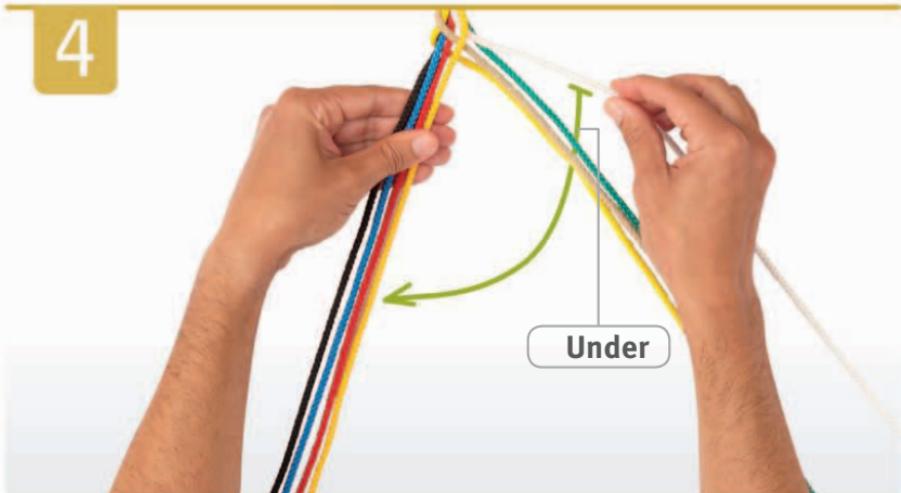
3

Under



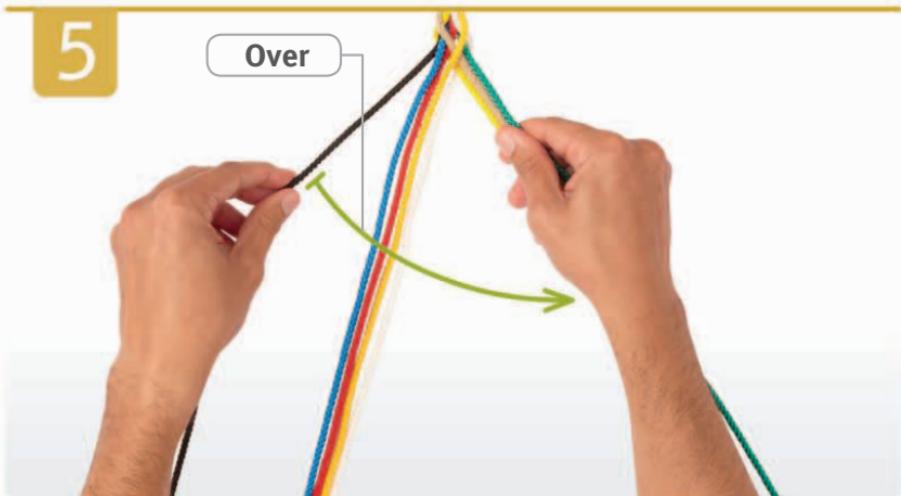
4

Under

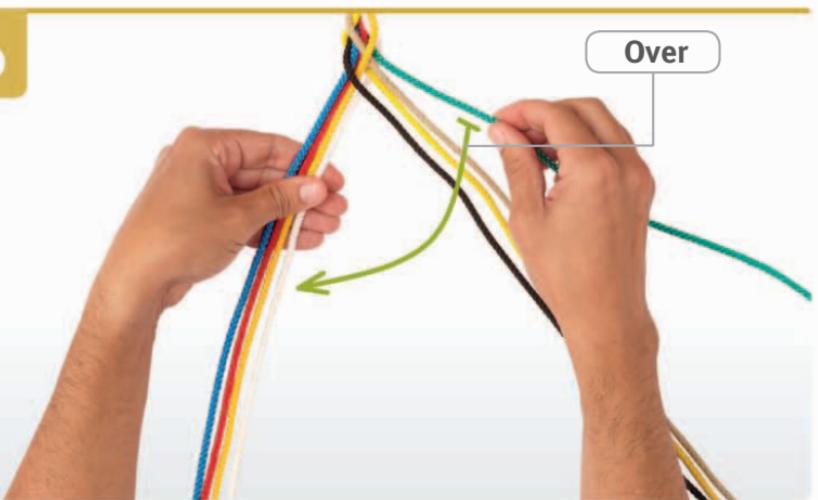


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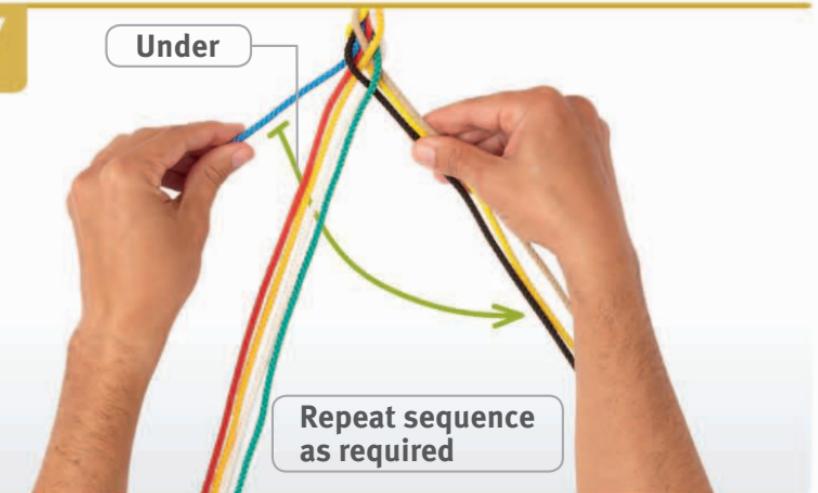
Over



6

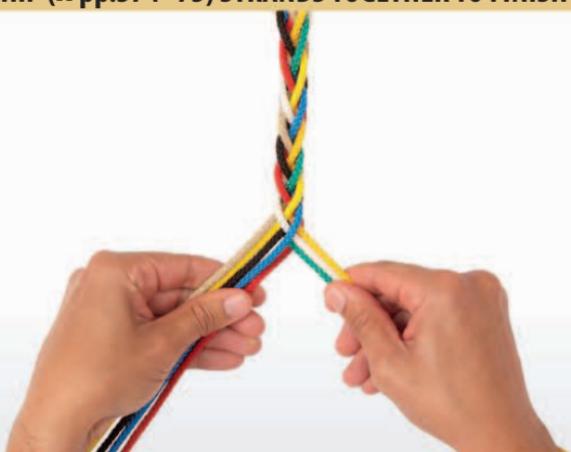


7



8

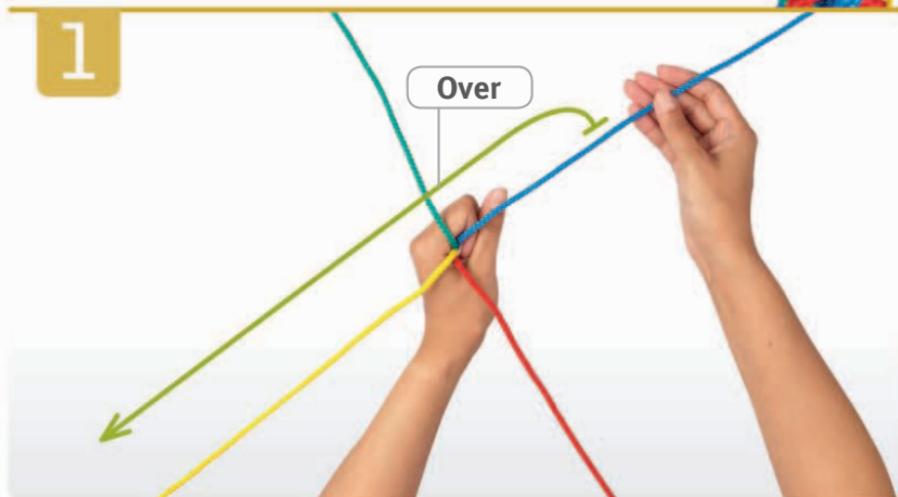
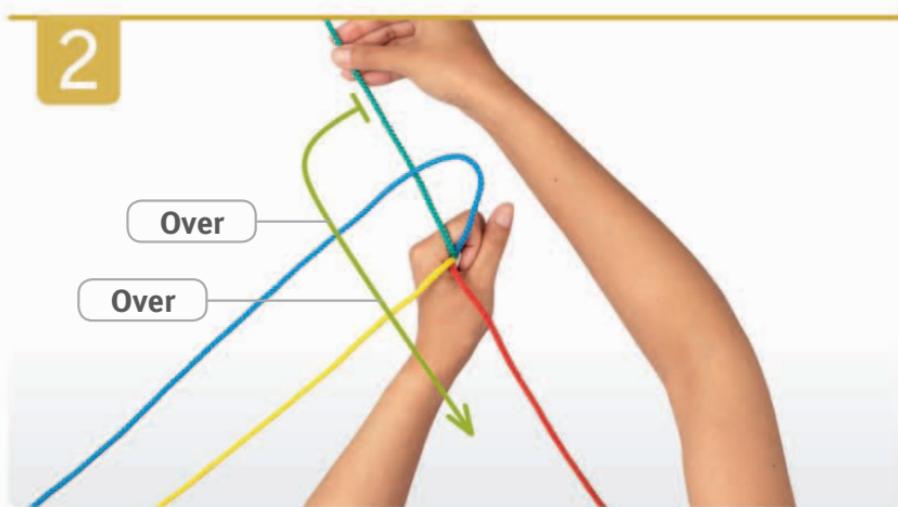
WHIP (»pp.374–75) STRANDS TOGETHER TO FINISH



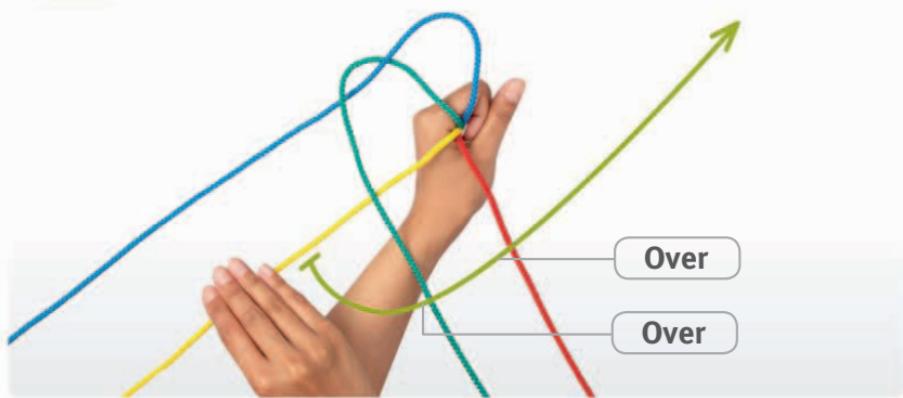


Round Crown Sennit

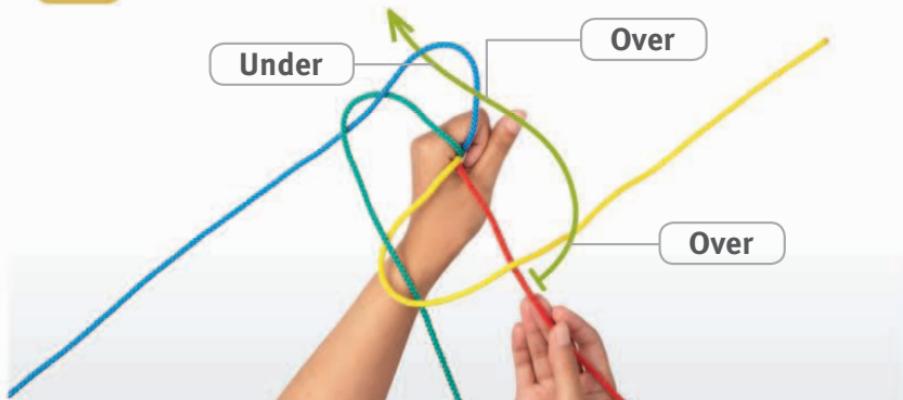
- Used to convert lengths of line into an attractive, solid braid.
- Formed from a series of Crown Knots (see pp.54–55) tied one on top of another.
- Bind one end of the strands together (see pp.374–75) before starting.

**1****2**

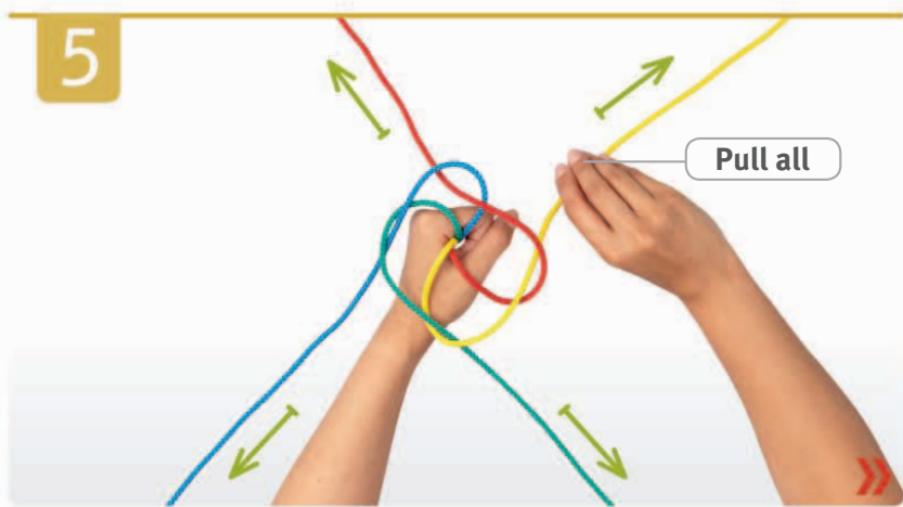
3



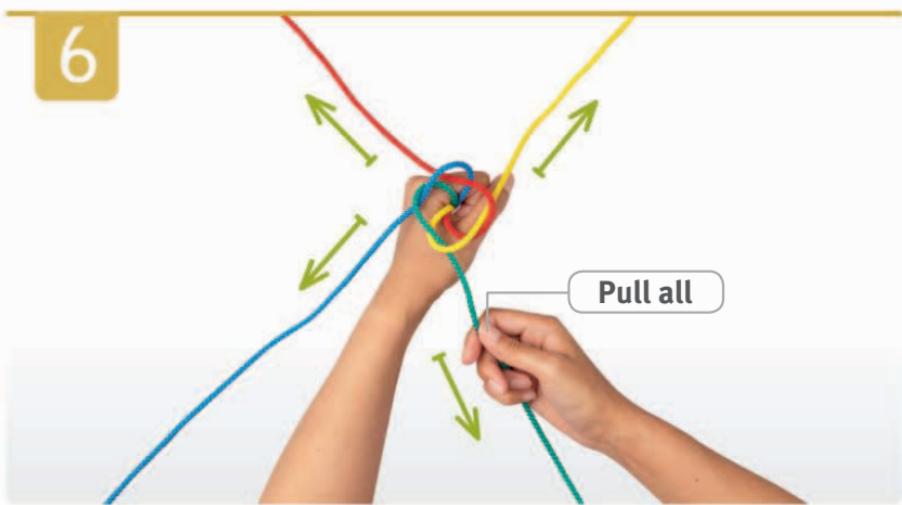
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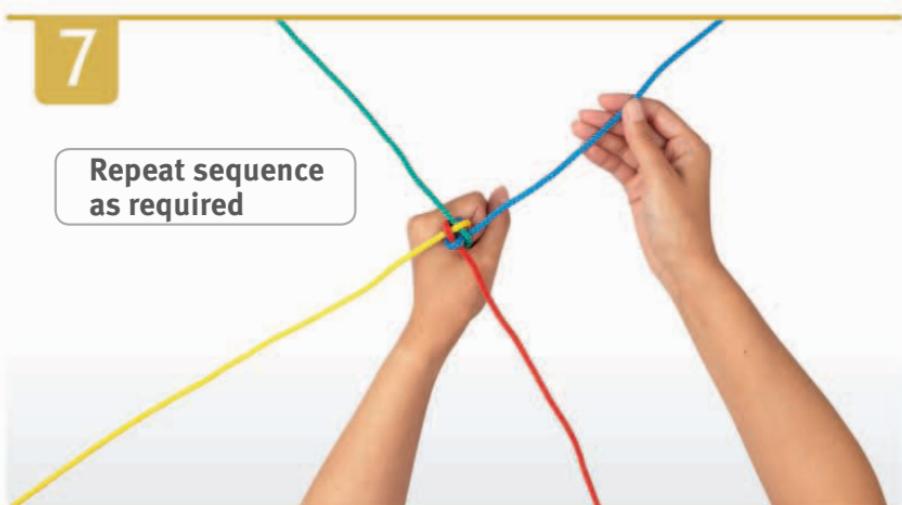
5



6



7



Round Crown Sennit – Four Pairs

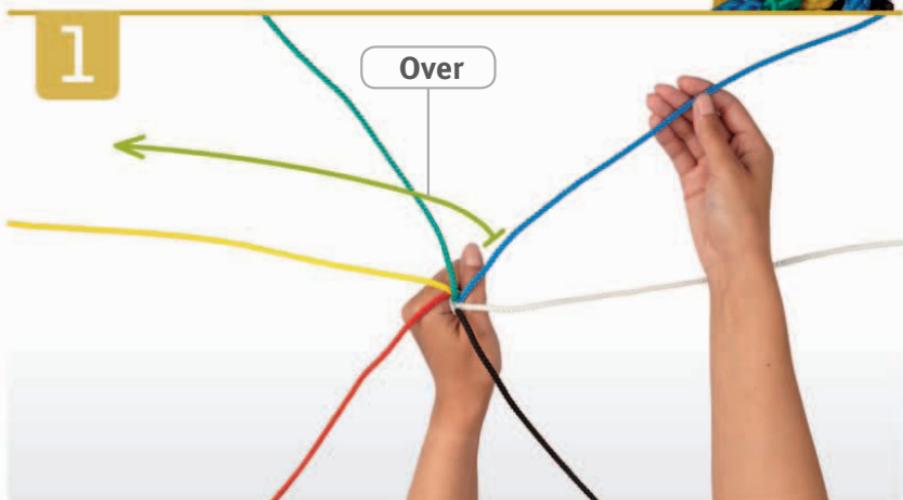
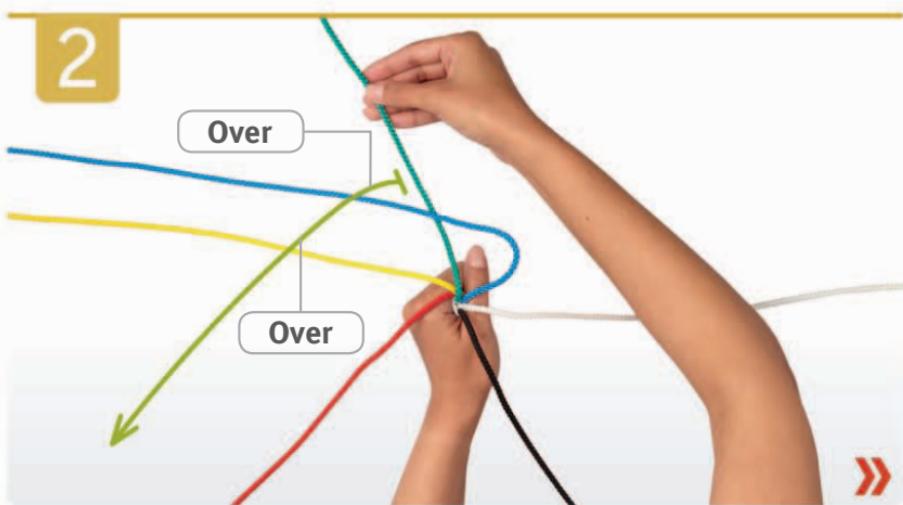
- Uses pairs of line instead of single strands to make a bulkier sennit.
- Follows the same pattern as the Round Crown Sennit (see pp.324–26).



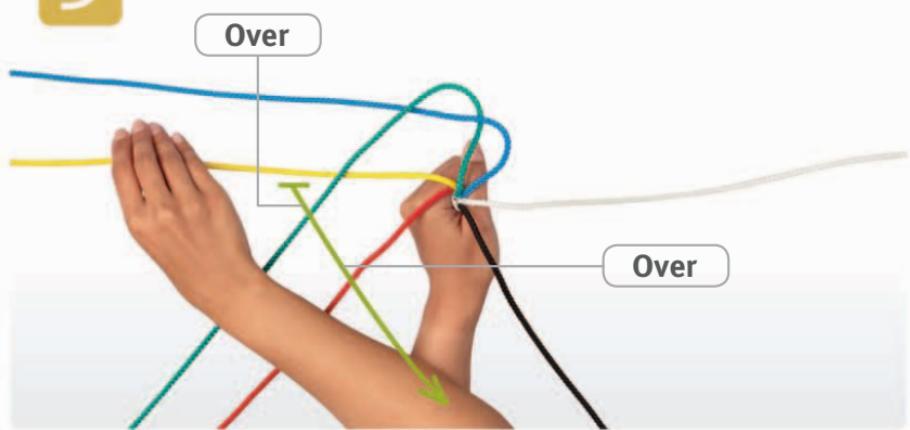


Six-Strand Round Crowning

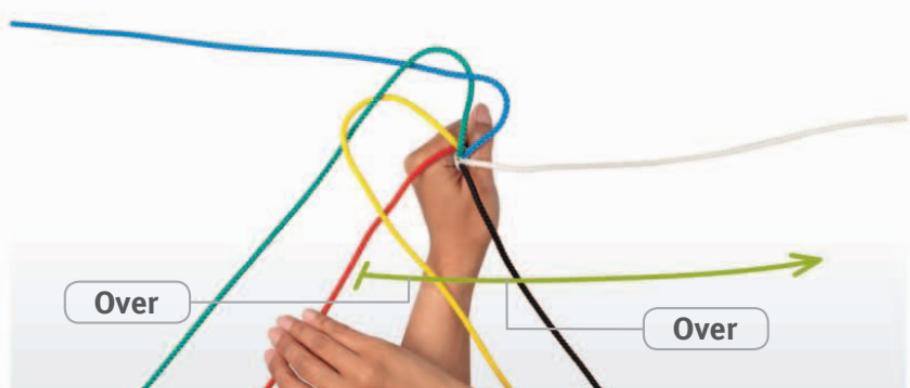
- Used to form a cylindrical tube from a sennit.
- Made by tying a series of Crown Knots (see pp.54–55).
- Bind one end of the strands together (see pp.374–75) before starting.
- Not suitable for use in large-diameter rope.

**1****Over****2****Over****Over**

3



4



5

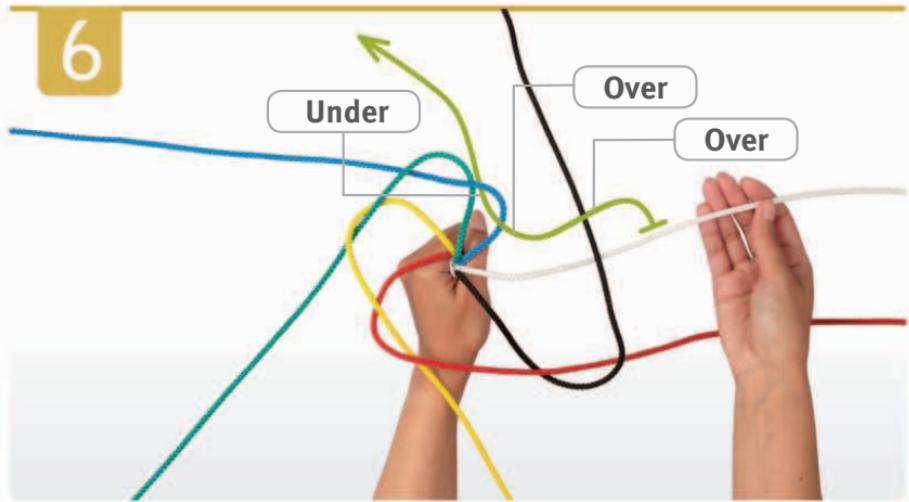


6

Under

Over

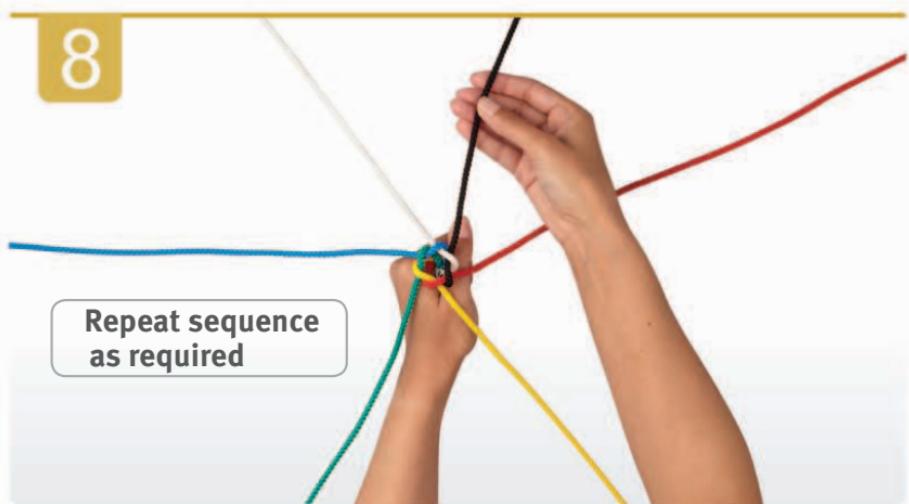
Over



7

Pull all

8

Repeat sequence
as required



Square Crown Sennit

- A decorative knot used in cords and bracelets.
- Formed from Crown Knots (see pp.54–55) tied in alternate directions.
- Bind one end of the strands together (see pp.374–75) before starting.
- Tighten each Crown Knot before moving to the next stage.



1

TIE A CROWN KNOT (»pp.54–55)

Tie a second
Crown Knot in the
opposite direction

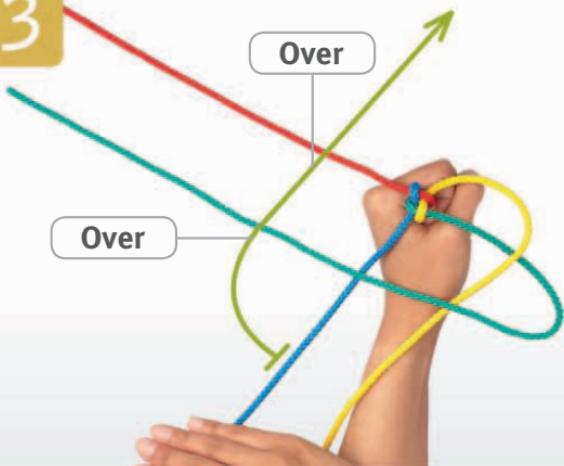
Over

2

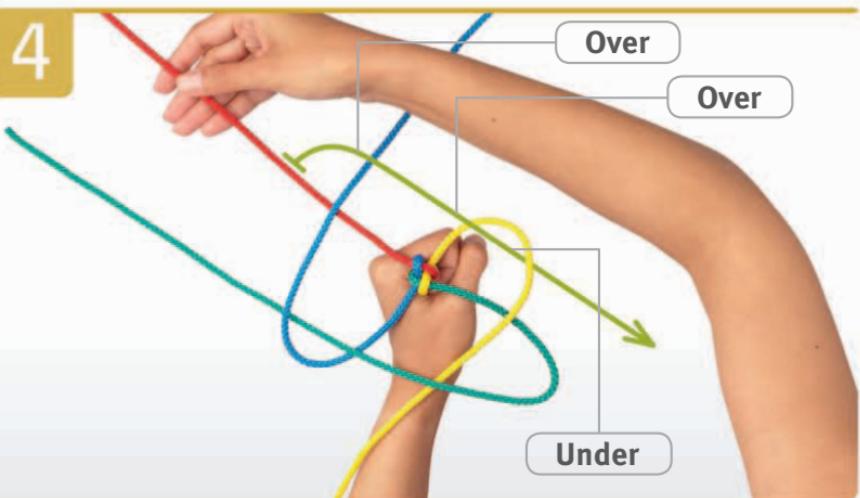
Over

Over

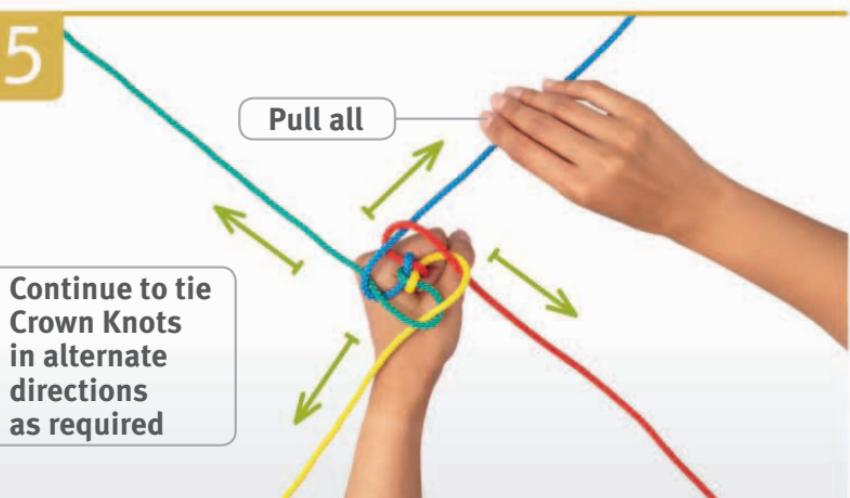
3



4



5



Splices and Whippings

A splice is a permanent way of finishing a rope using its strands, or of joining together two ropes of equal width. A whipping is tied at the end of a rope to bind it and prevent it from coming undone.







Back Splice

- Used as a permanent finish to the end of a rope.
- Increases the diameter of a rope end by one-third.
- Before you start tie a Crown Knot (see pp.54–55) with the strands, leaving long strand ends.
- Whip (see pp.374–75) or tape the working ends to make the strands easier to tuck.



1

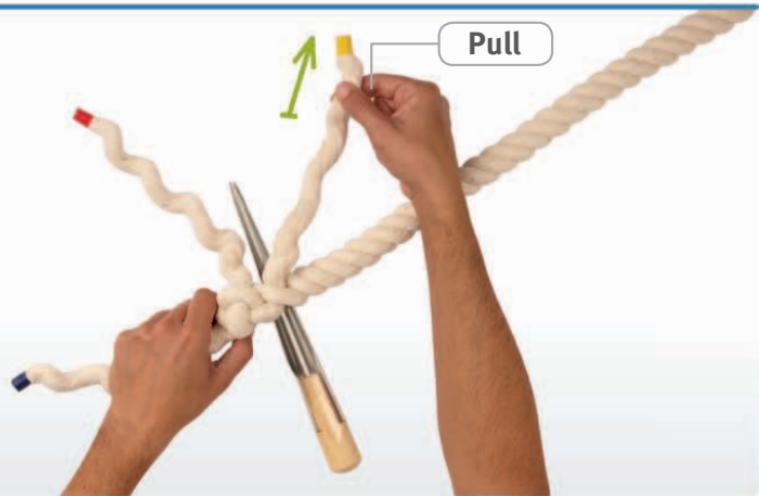
TIE A CROWN KNOT (»pp.54–55)



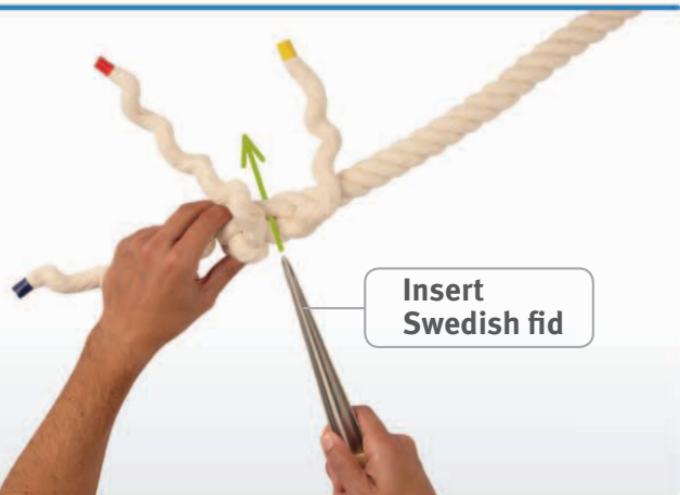
2



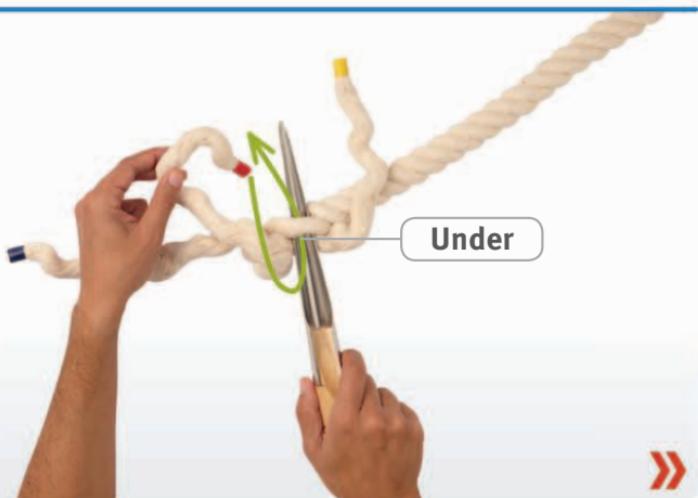
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4

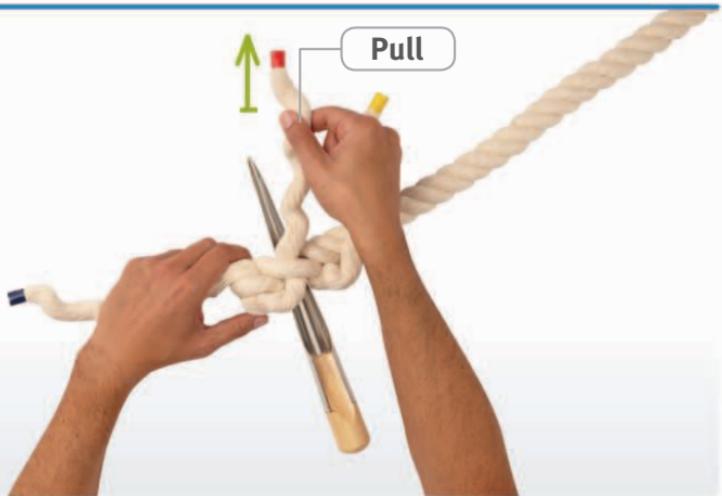


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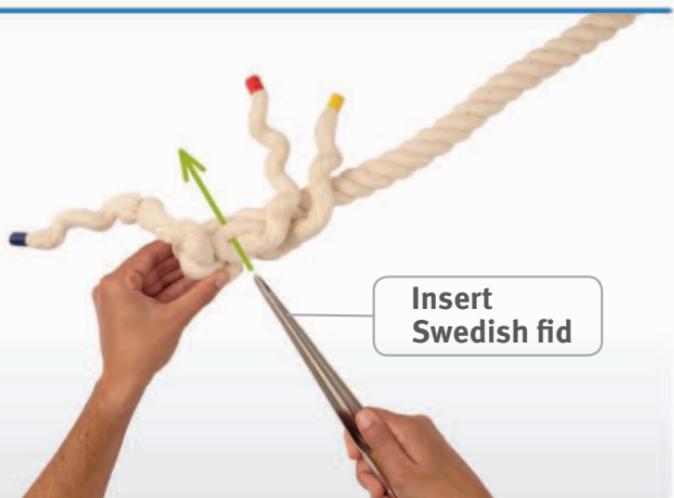


336 SPLICES AND WHIPPINGS

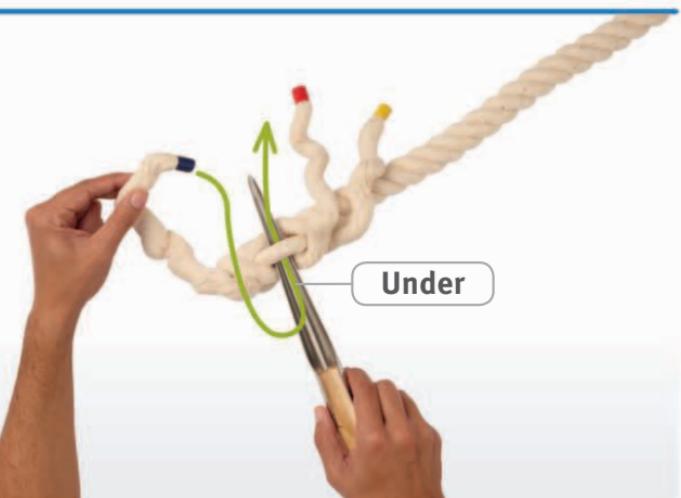
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7

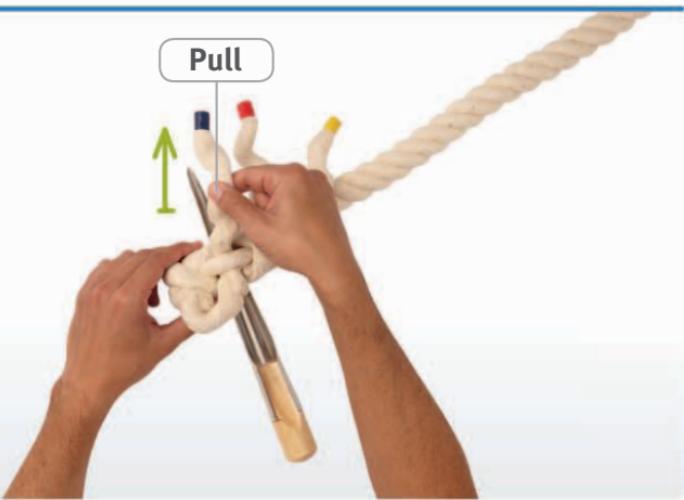


8



9

Pull



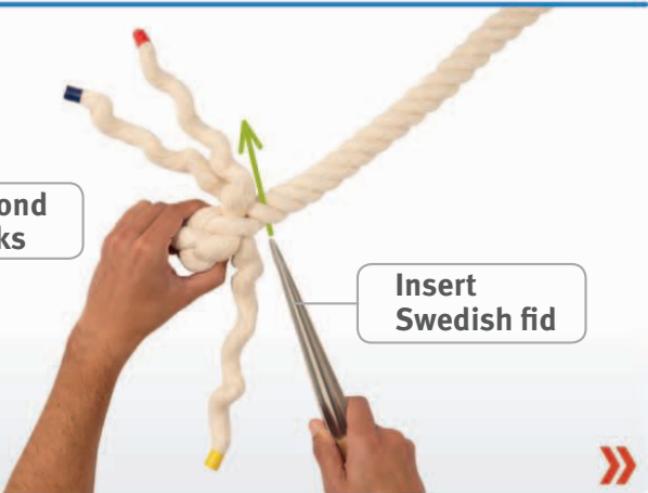
10

Arrange strands

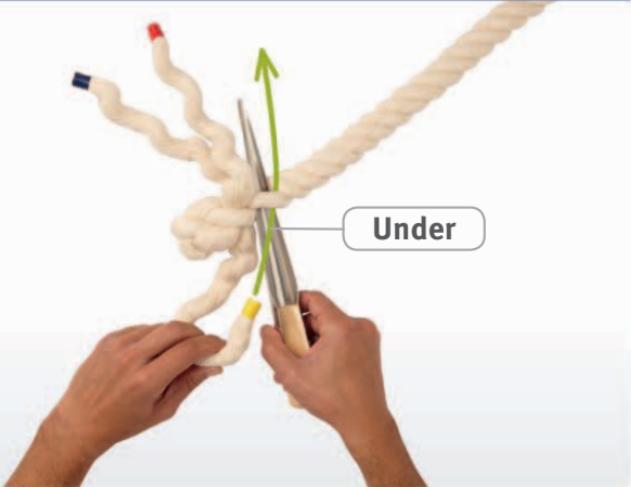


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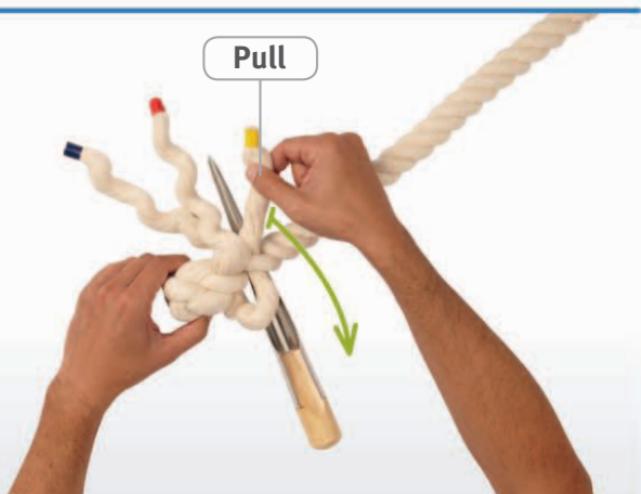
Begin a second cycle of tucks

Insert
Swedish fid

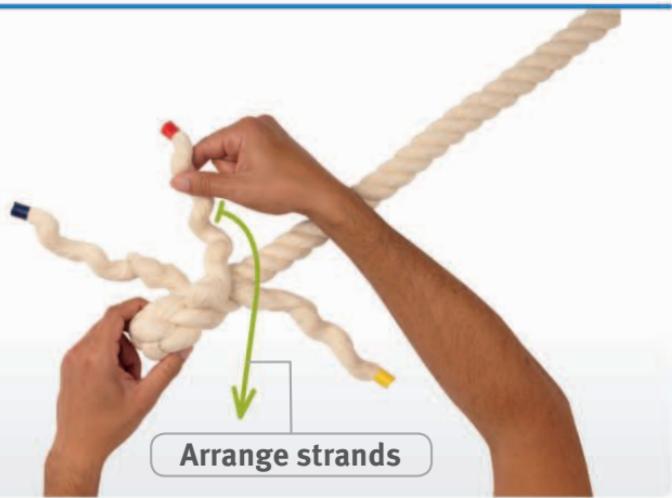
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13



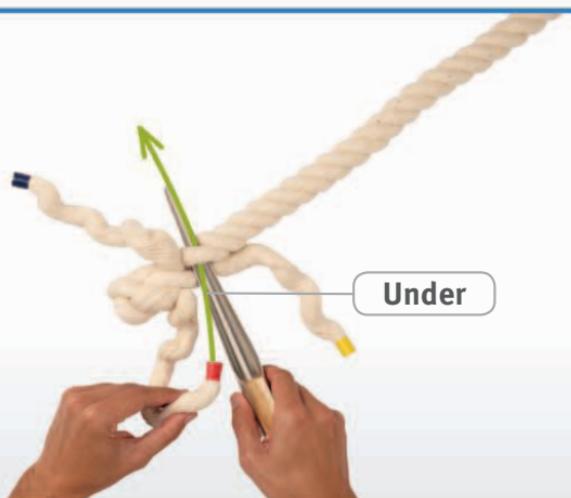
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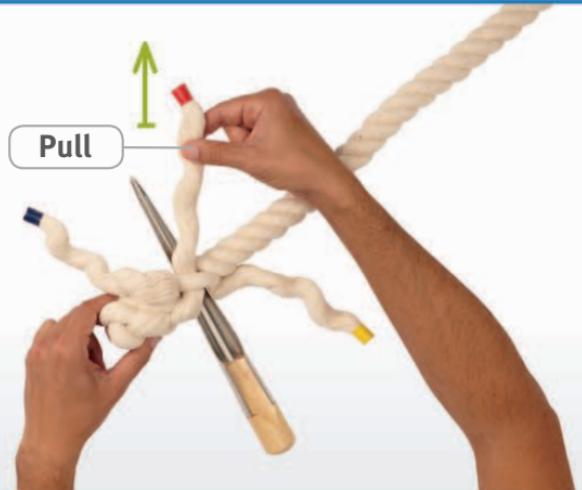
15



16



17



18

Arrange strands



19

Insert
Swedish fid

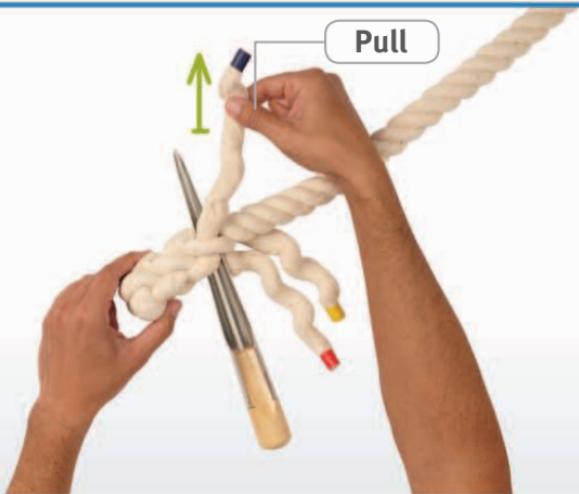


20

Under



21



22



23





Eye Splice

- Forms a permanent loop at the end of a three-strand rope.
- Ensure a tight start of the splice.
- Make a minimum of three full tucks for a natural fiber rope and five tucks for synthetic rope because it is more slippery.

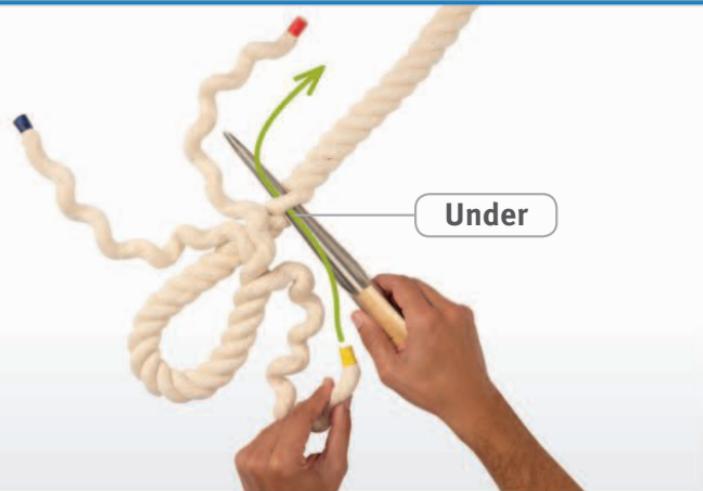
**1**

Form loop with end of rope

Insert Swedish fid

**2**

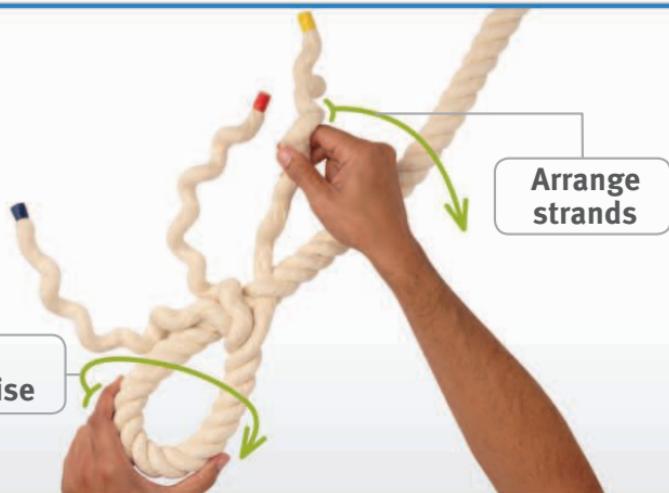
Under



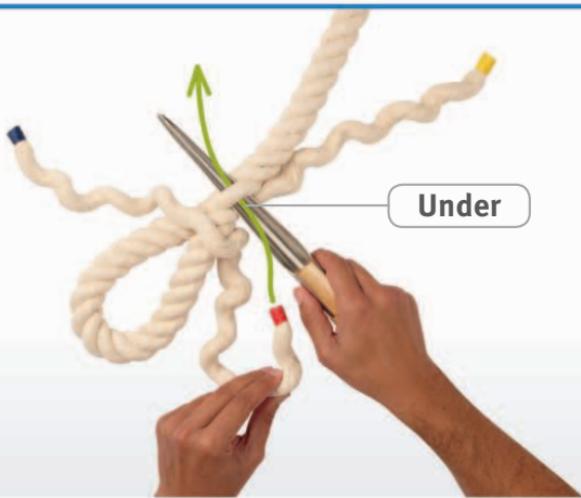
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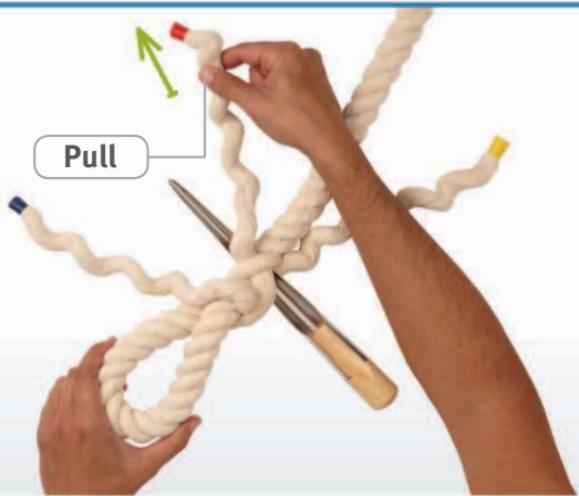
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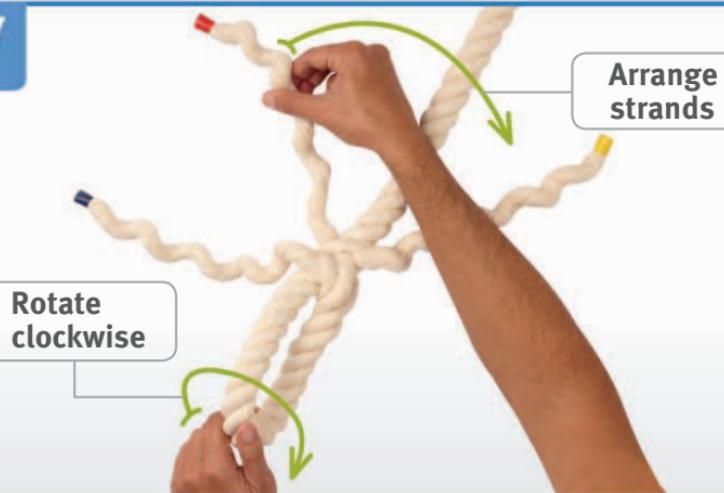
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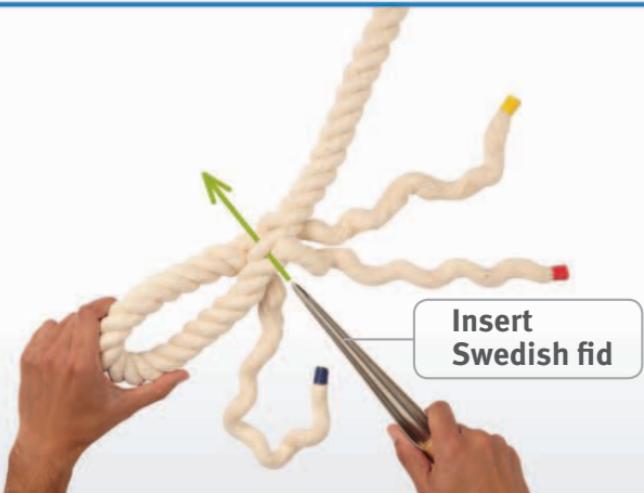
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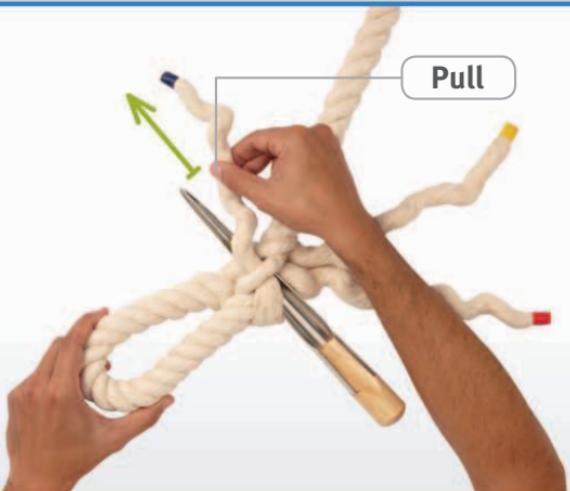
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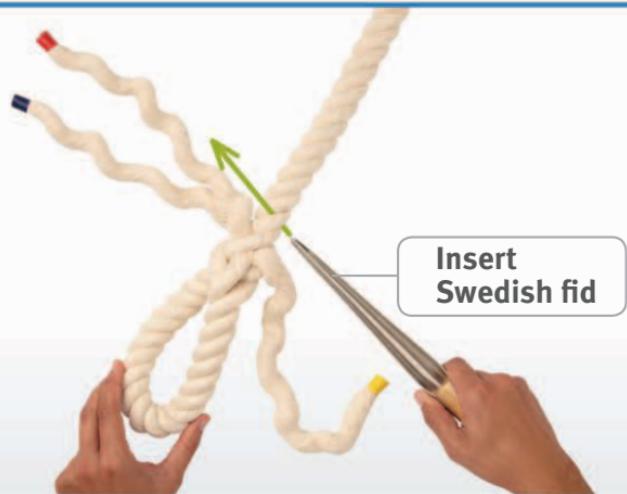
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11



12



Insert
Swedish fid

13



Repeat
sequence
as required

14



Trim to finish

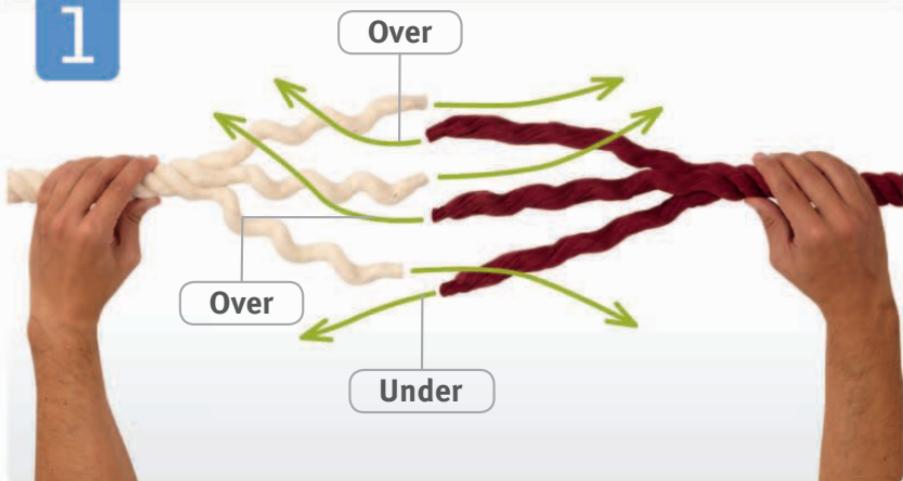


Short Splice

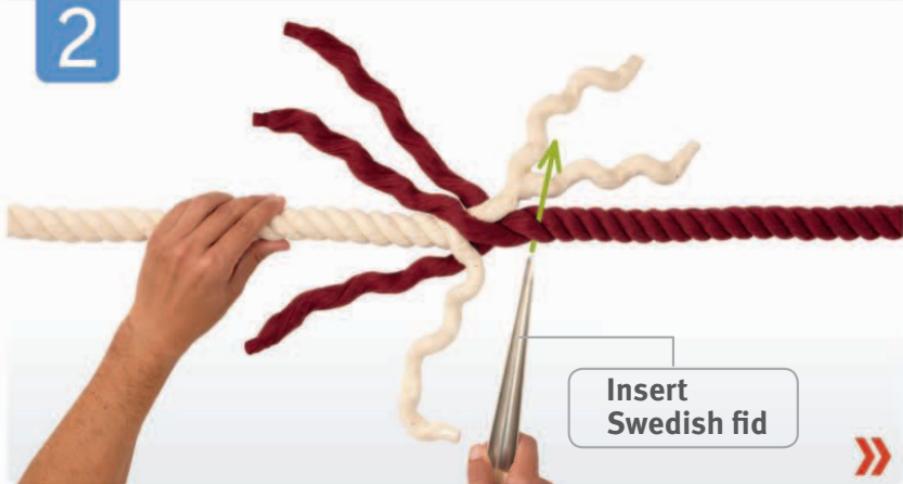
- A method for permanently joining two ropes of equal thickness.
- Produces a thicker rope.
- May be tapered (see pp.364–69) if desired.
- Use a fid or Swedish fid (see p.19) to make it easier to separate the strands.
- Make three cycles of tucks each way for natural rope and five for synthetic.



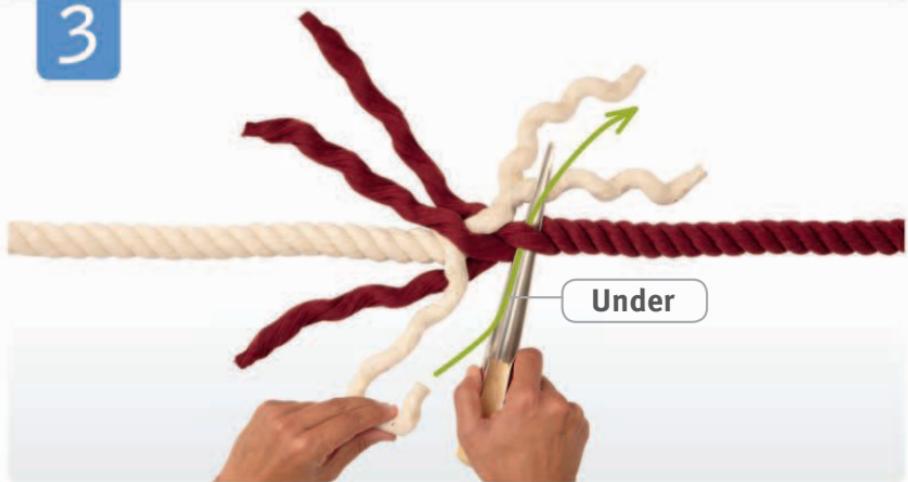
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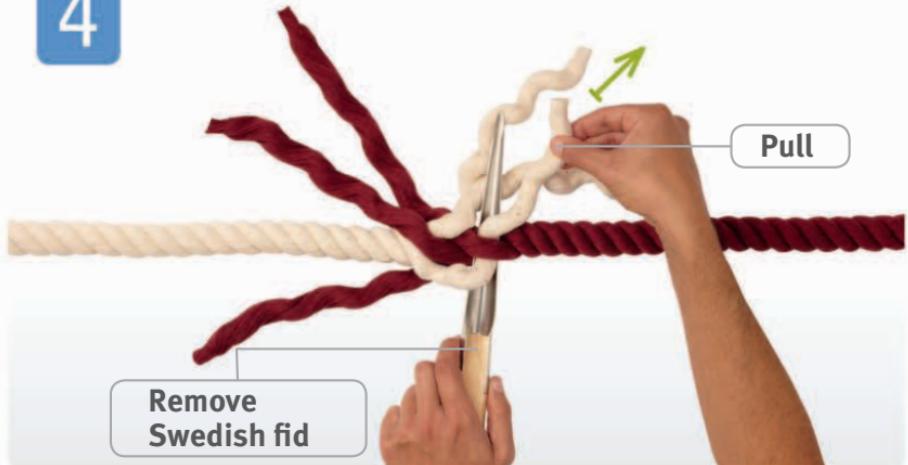
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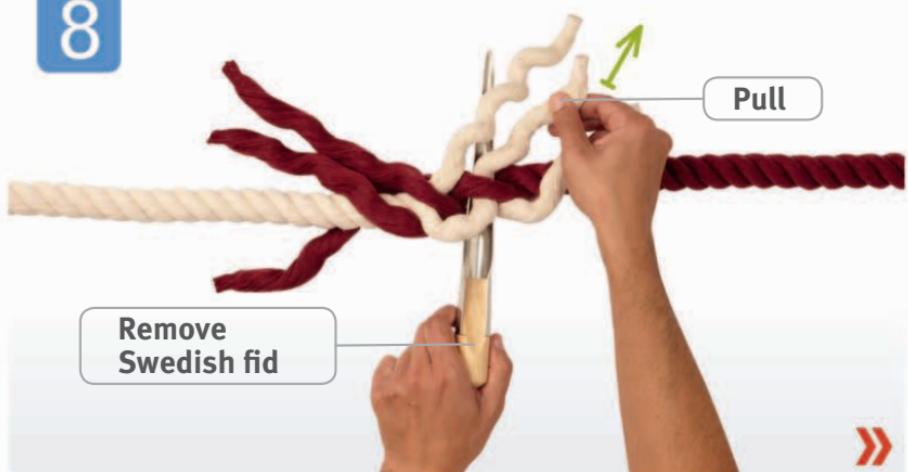
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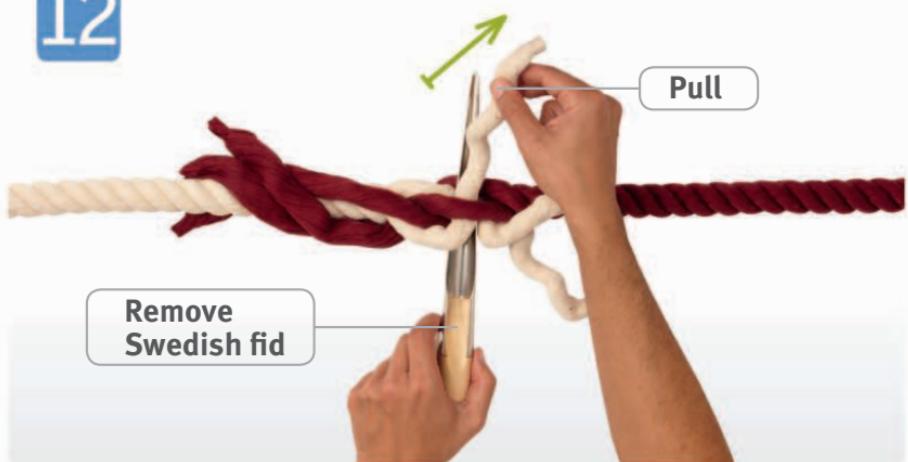
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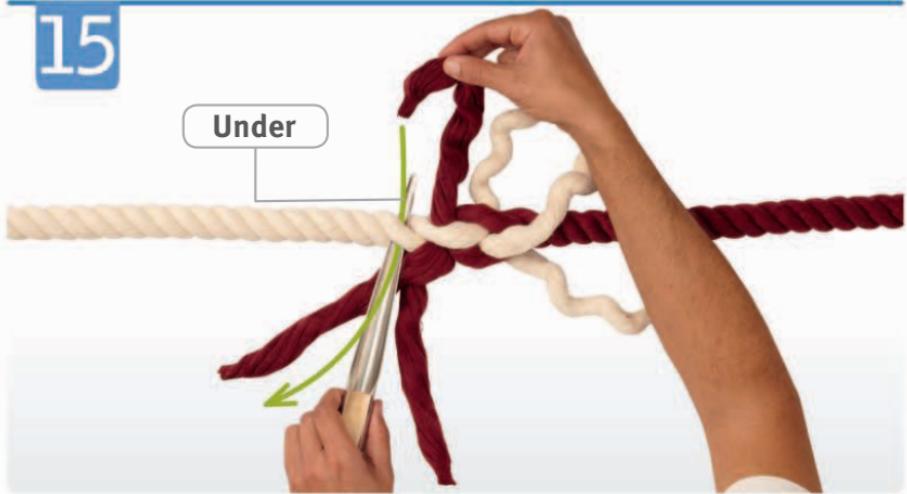
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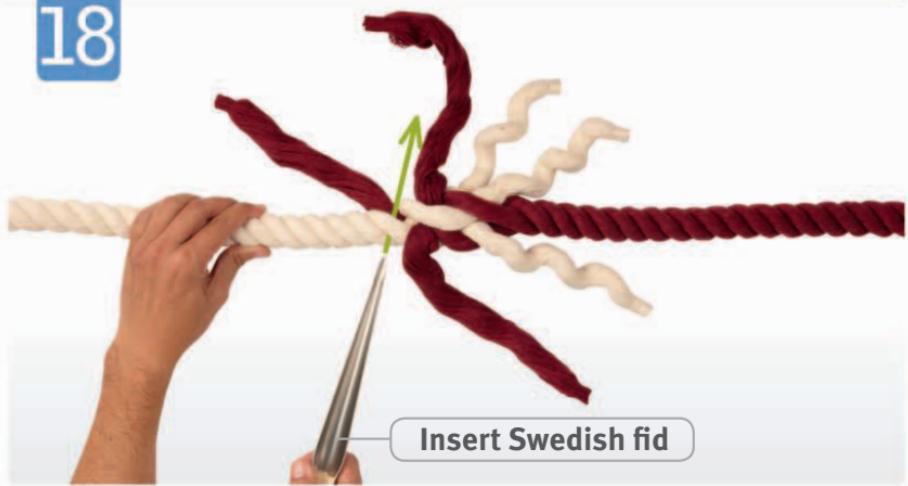
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17



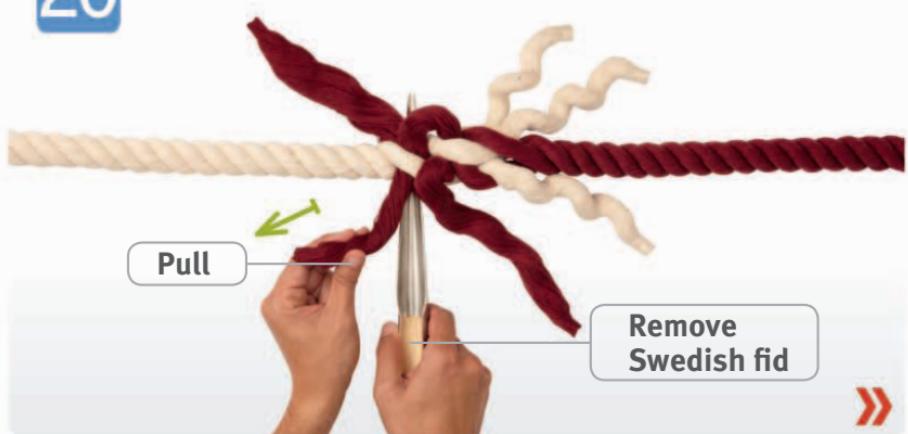
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19



20



354 SPLICES AND WHIPPINGS

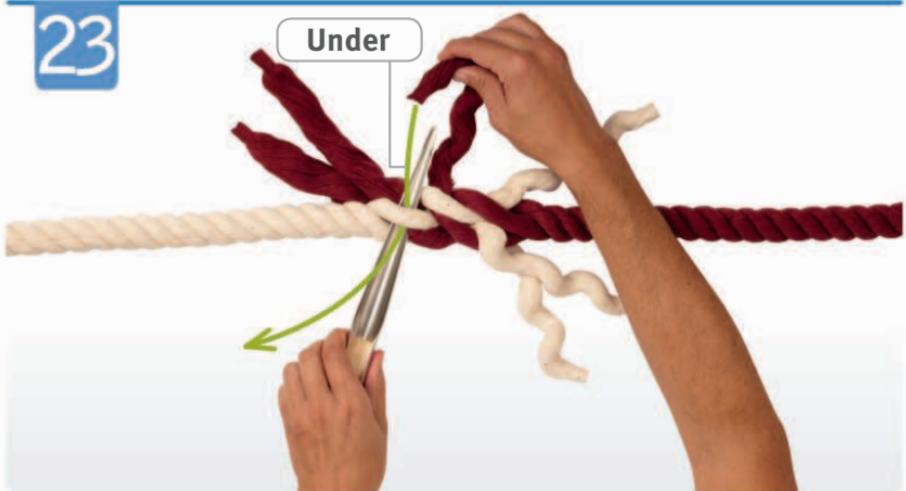
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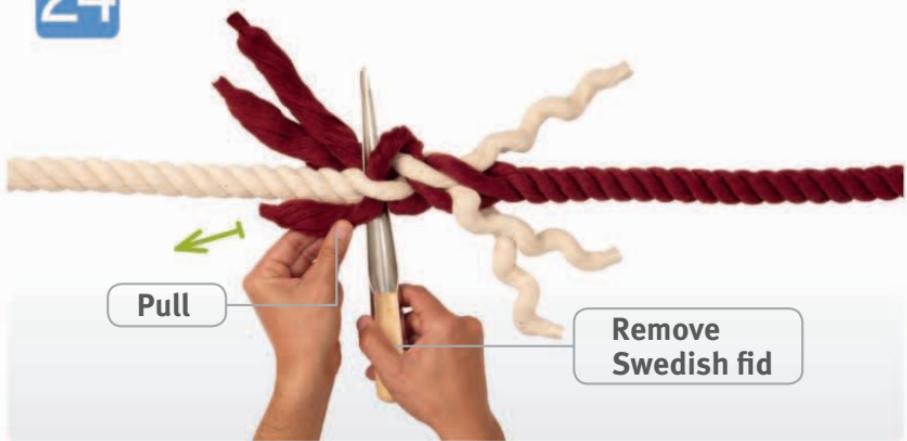
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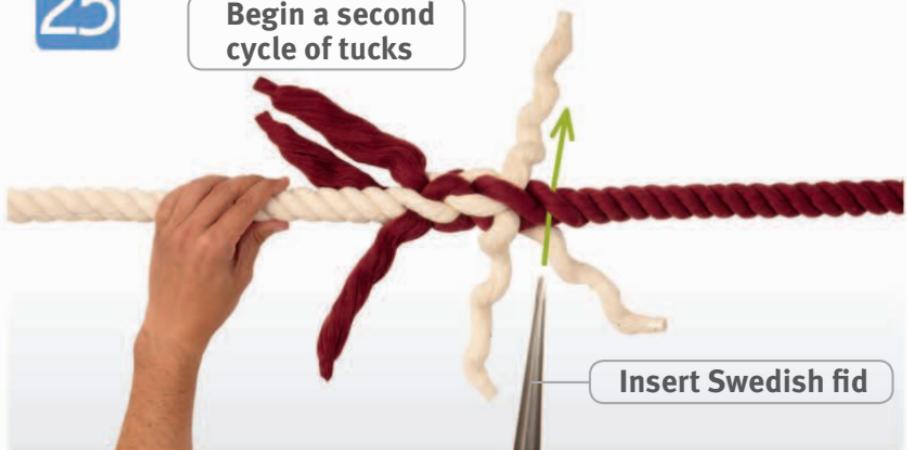
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25

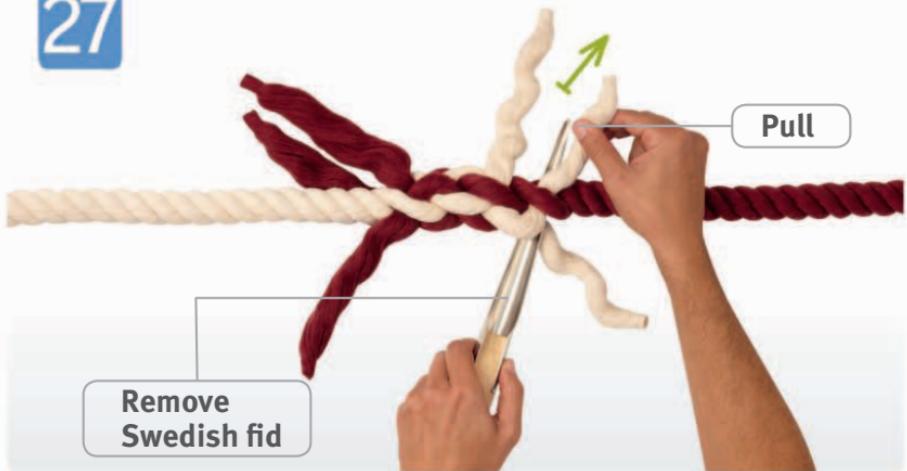


26



356 SPLICES AND WHIPPINGS

27



28



29



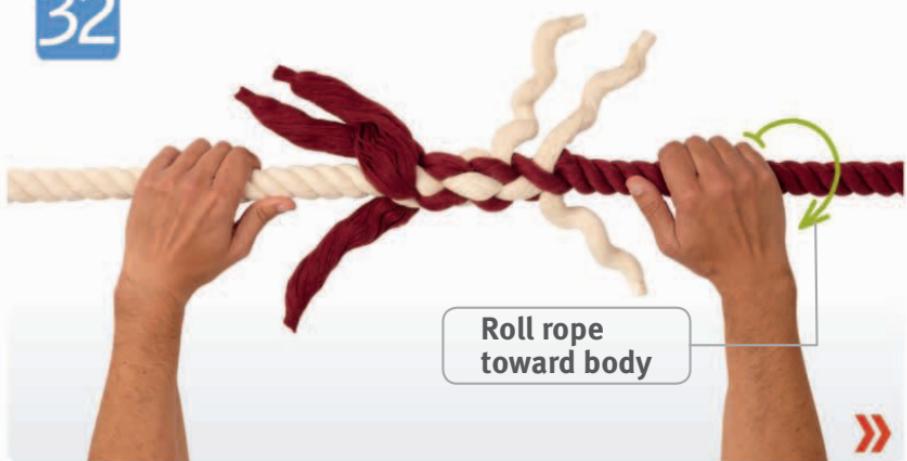
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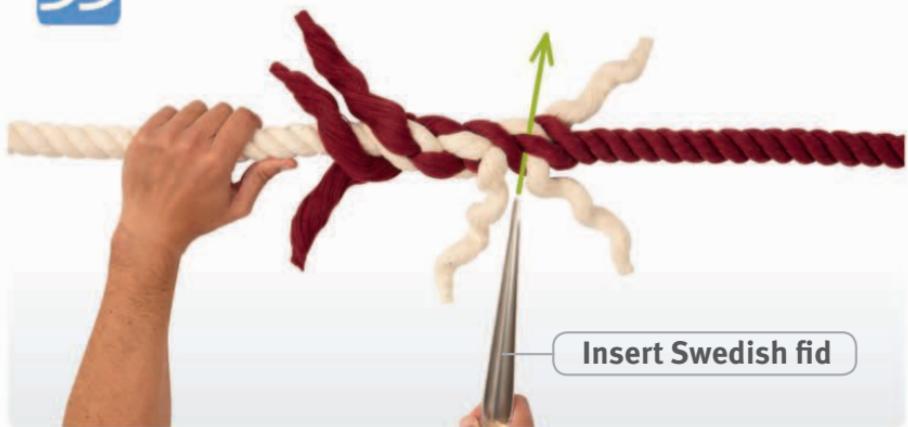


32



358 SPLICES AND WHIPPINGS

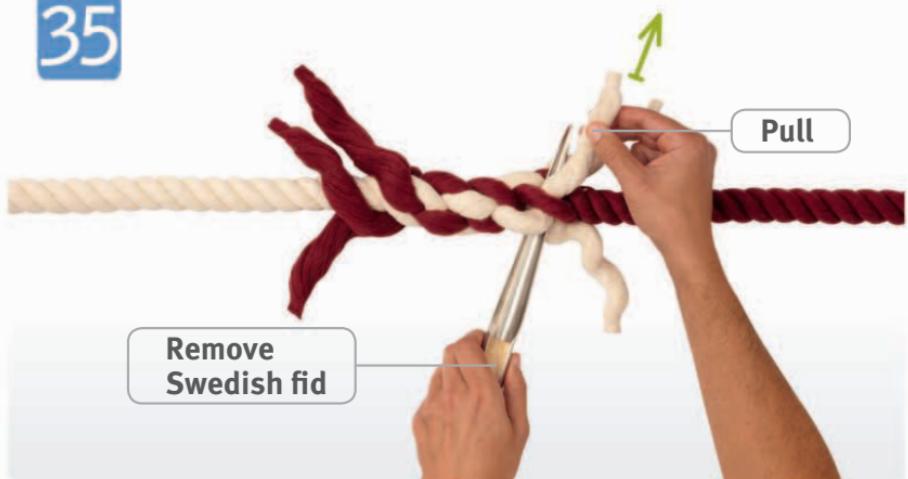
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35

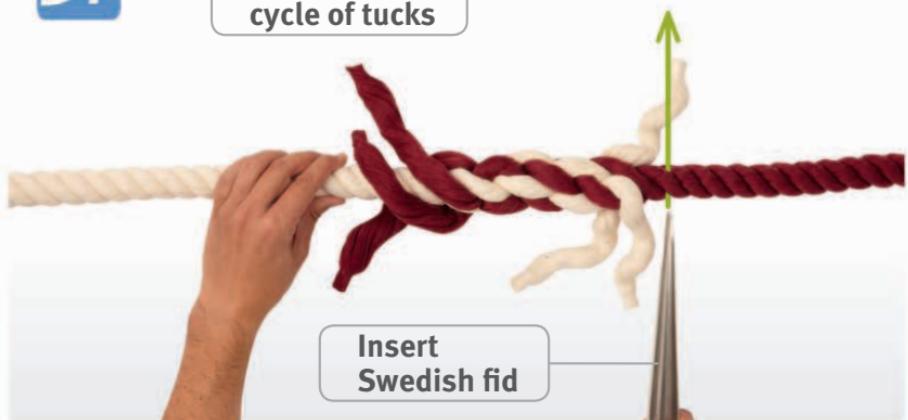


36



37

Begin a third cycle of tucks

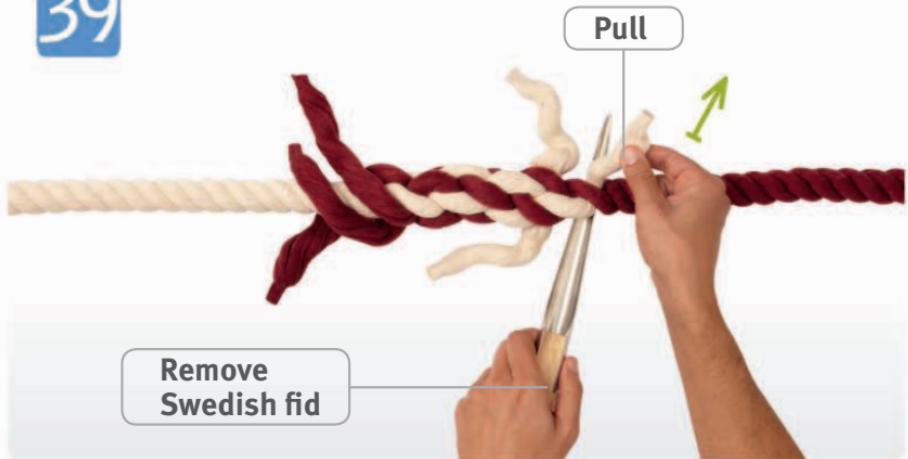


38



360 SPLICES AND WHIPPINGS

39



Remove
Swedish fid

40



Roll rope away
from body

41



Insert Swedish fid

42



43



44



45



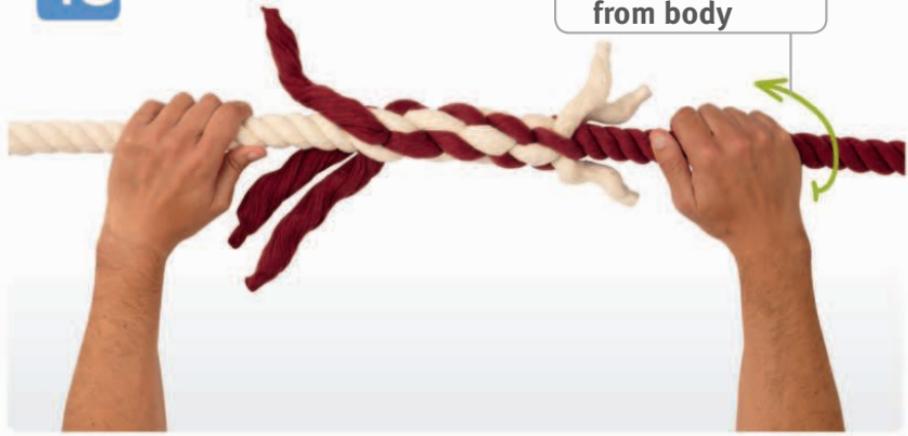
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47



48



49



50

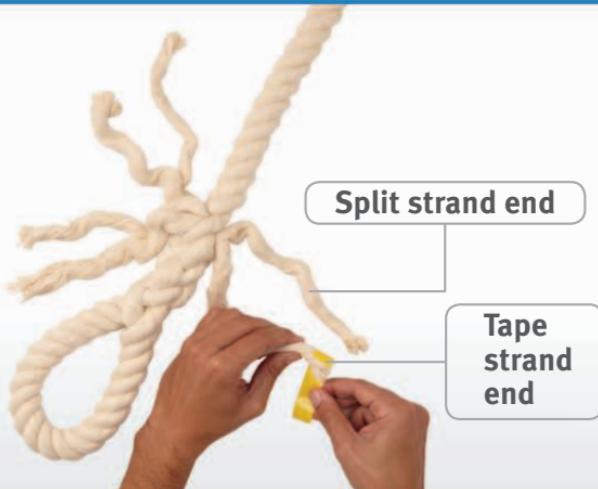
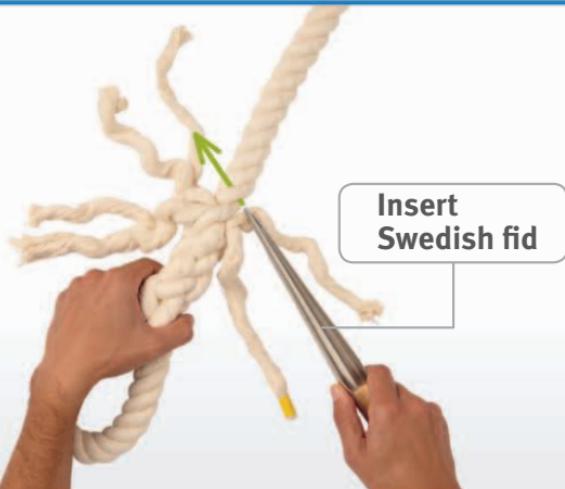
Trim to finish





Tapering a Splice

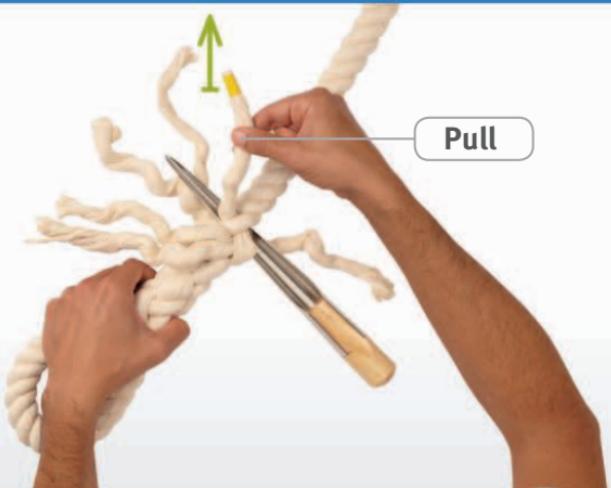
- Used to taper the ends of a spliced (see pp.334–63) three-strand rope to prevent it from working loose.
- Can be used to strengthen and neaten all splices.

**1****2**

3



4



5

Arrange
strands



6



7



8



9

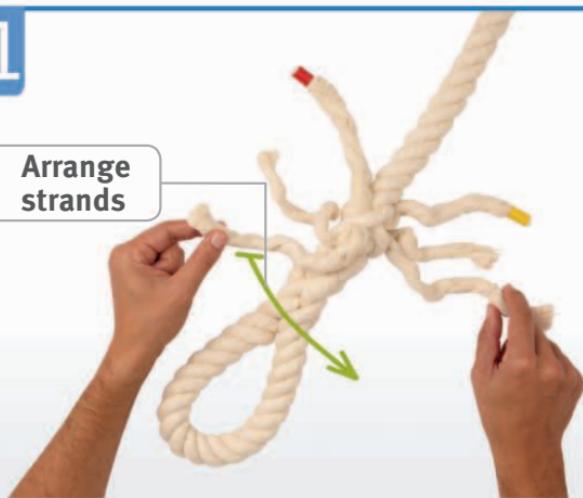


10



11

Arrange strands



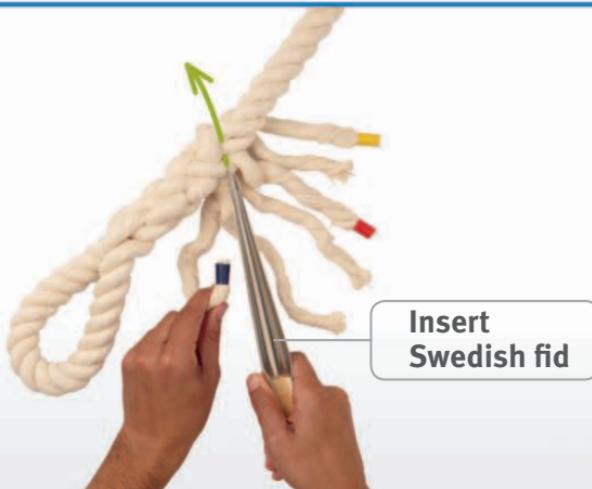
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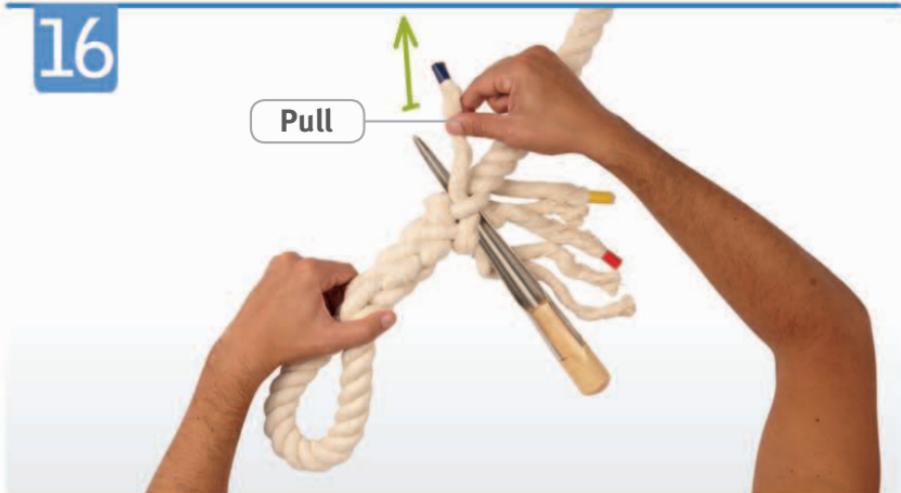
14



15



16



17





BEST FOR ... Horses

Equestrians use knots for a multitude of reasons such as tethering horses safely, fixing clips, tying straps and webbing, and securing ropes around a horse's neck or on the horn of a saddle.

Eye Splice

» pp.342–46

✓ Offers a neat and reliable method for making an eye through which to attach clips to lead ropes.

✓ Should be formed at the end of ropes that are used for pulling, dragging, or hoisting.

✓ Can also be used to make a halter.



Similar knots:
» pp.334–41
Back Splice

Back Splice » p.334–41

✓ Also known as an End Splice, this is a permanent fastening that keeps the end of a rope from coming undone.

✓ Can also be used to make a grip at the end of a rope.



Similar knots:
» pp.342–46
Eye Splice

Round Turn and Two Half Hitches » pp.180–81

✓ A quick, safe method for tying up a horse—the round turn allows it to handle a large amount of strain.

✓ A reasonably easy hitch to untie, even if a large amount of strain has been placed on it.



Similar knots:
» pp.182–83
Buntline Hitch
» pp.184–85
Fisherman's Bend

Water Knot » pp.172–73

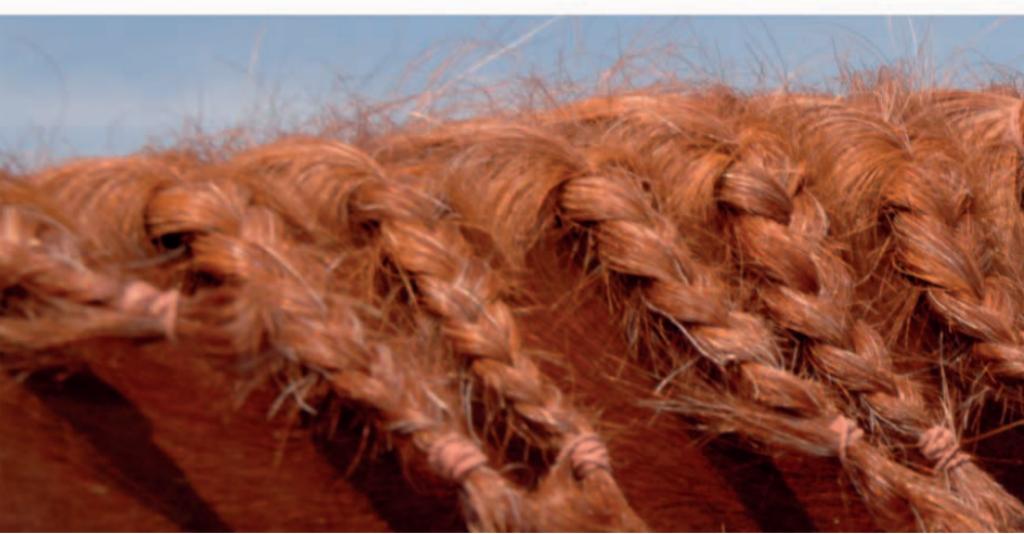
✓ An effective method for linking flat strapping and webbing of the type found on a horse's bridle.

✓ Can also be used to make an emergency repair to broken reins.

✓ A knot that is both strong and reliable.



Similar knots:
» pp.157–59
Fisherman's Knot



Highwayman's Hitch

» pp.201–02

✓ A quick-release hitch that is good for temporarily tethering a horse to a ring or rail.

✗ Comes undone easily, so the hitch must always be pulled tight, with a good locking bight, before leaving the horse.



Similar knots:
» pp.180–81
Round Turn and
Two Half Hitches

Three-Strand Flat

Braid » pp.292–93

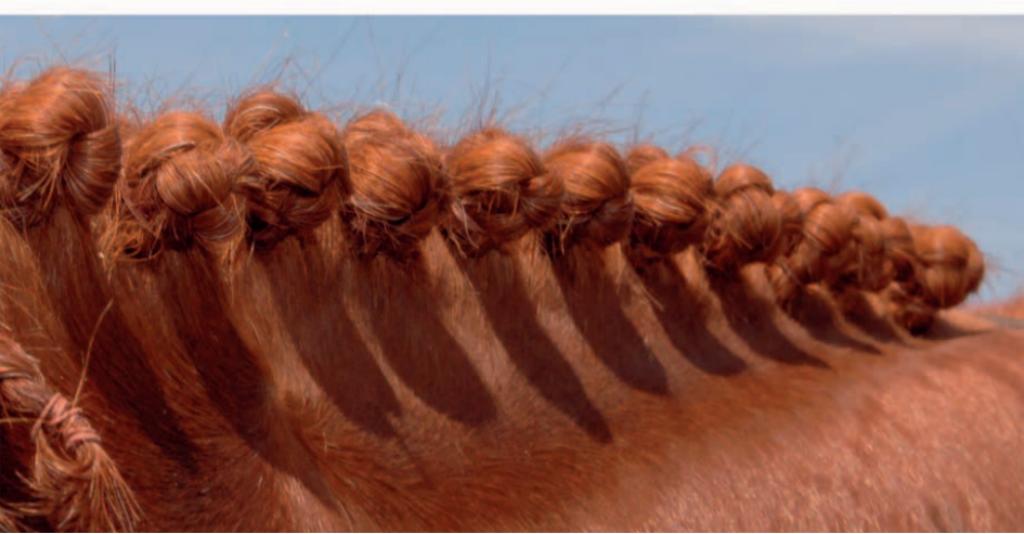
✓ Simple and quick to tie, this braid can be made as long as desired.

✓ When secured with a rubber braiding band it can be used to dress a horse's mane or tail.

✓ A ribbon, held in place with a braiding band, can be added for extra decoration.



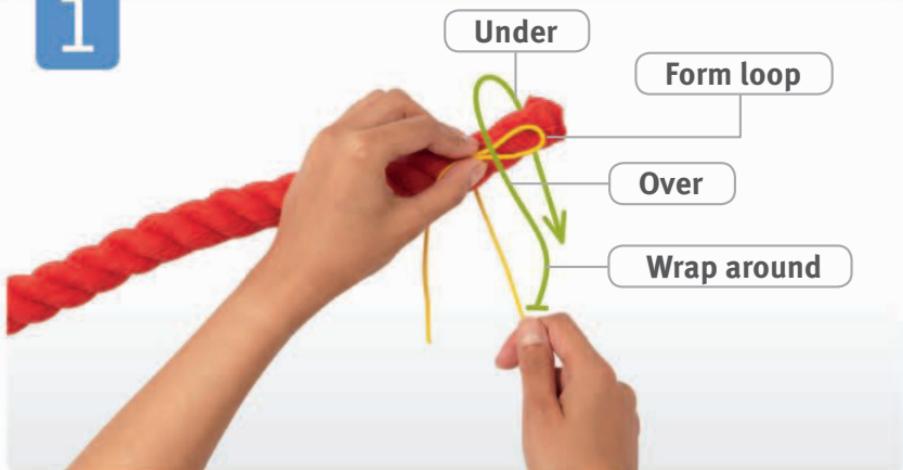
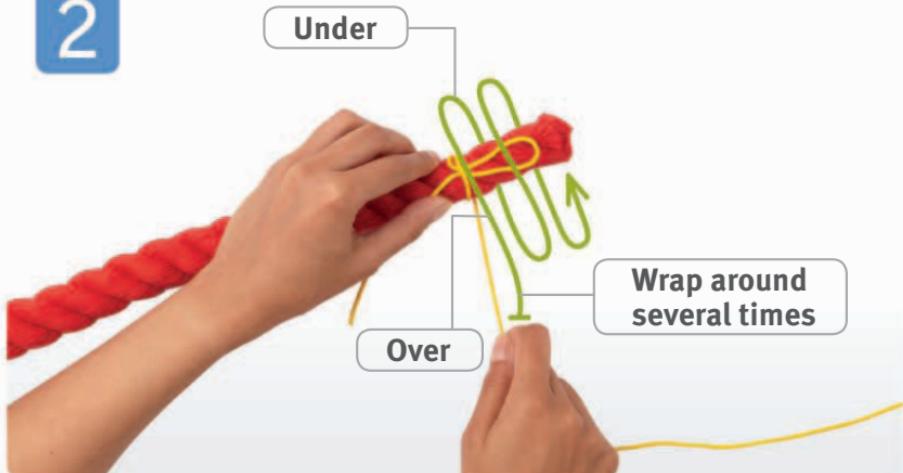
Similar knots:
» pp.294–95 Four-Strand Flat Braid
» pp.296–97 Five-Strand Flat Braid



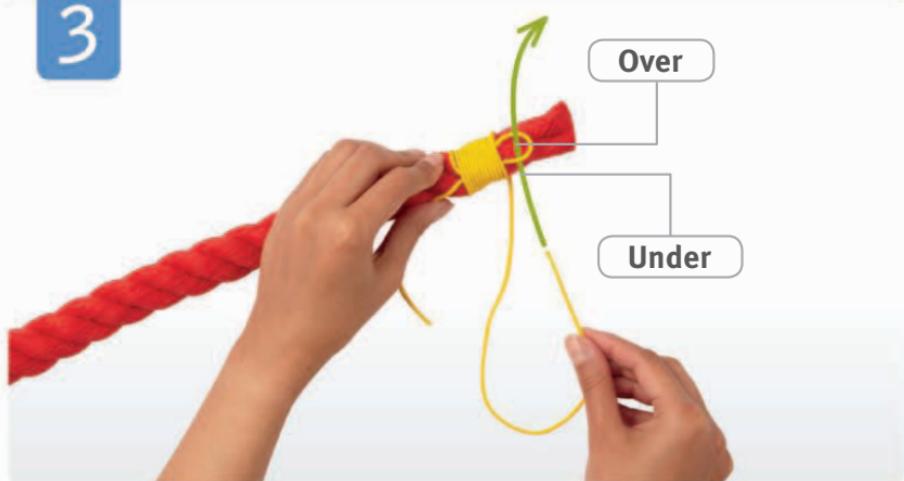


Common Whipping

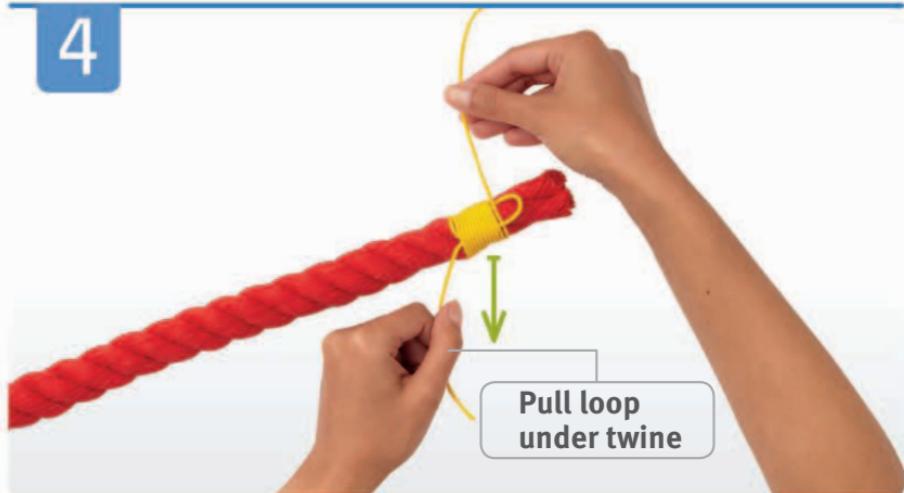
- Prevents the end of a rope from fraying.
- The simplest of all whippings.
- Waxing the twine makes it easier to pull the loop under the whipping turns.
- To finish, use a Marlinspike Hitch (see pp.199–200) to prevent fine twine

**1****2**

3



4



5





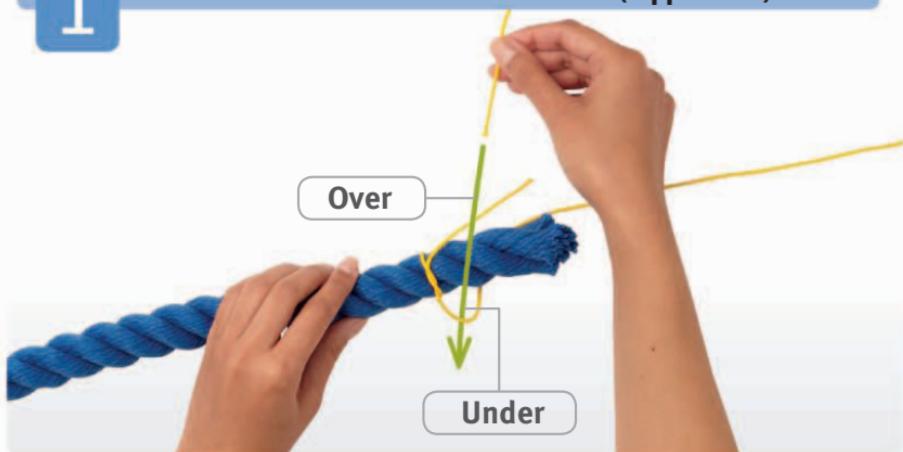
French Whipping

- A decorative whipping used to prevent a rope end from unraveling.
- Also used over railings or tool handles to provide a firm grip.
- Formed using a series of half hitches (see p.23) tied in the same direction.
- Secure the twine around the rope with an Overhand Knot (see pp.28–29) before starting.



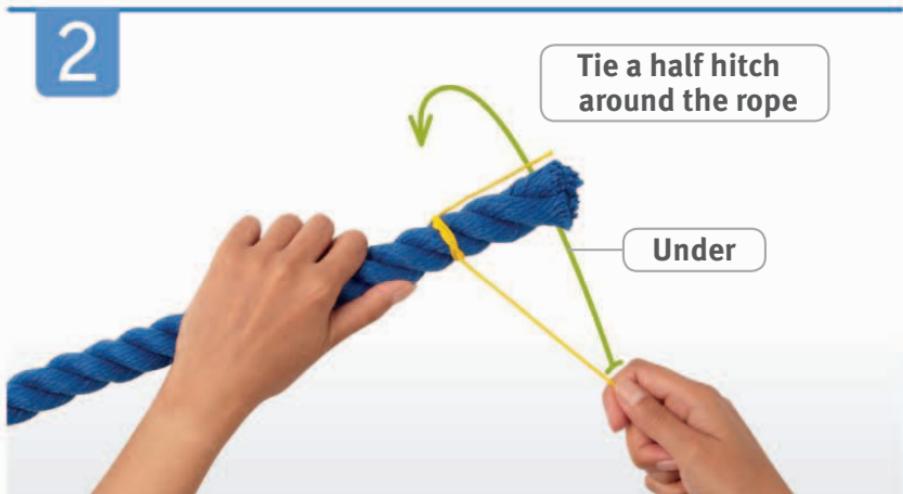
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SECURE TWINE WITH AN OVERHAND KNOT (»pp.28–29)

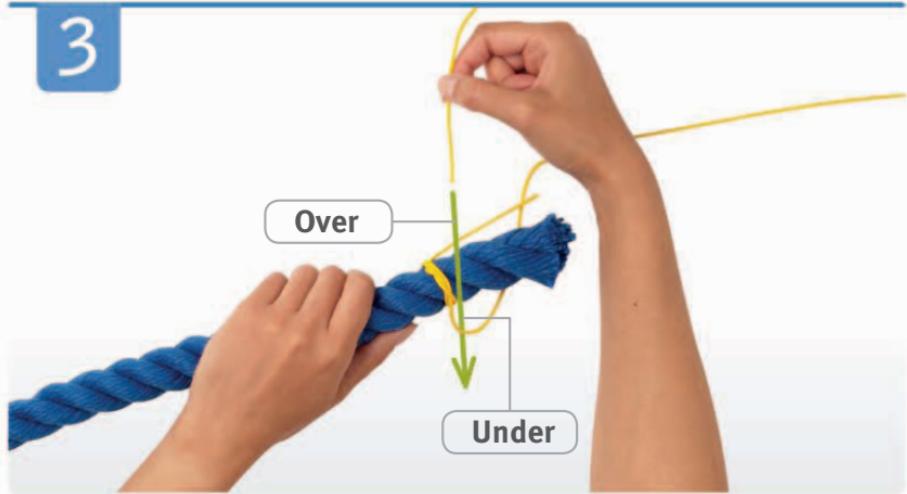


2

Tie a half hitch around the rope



3



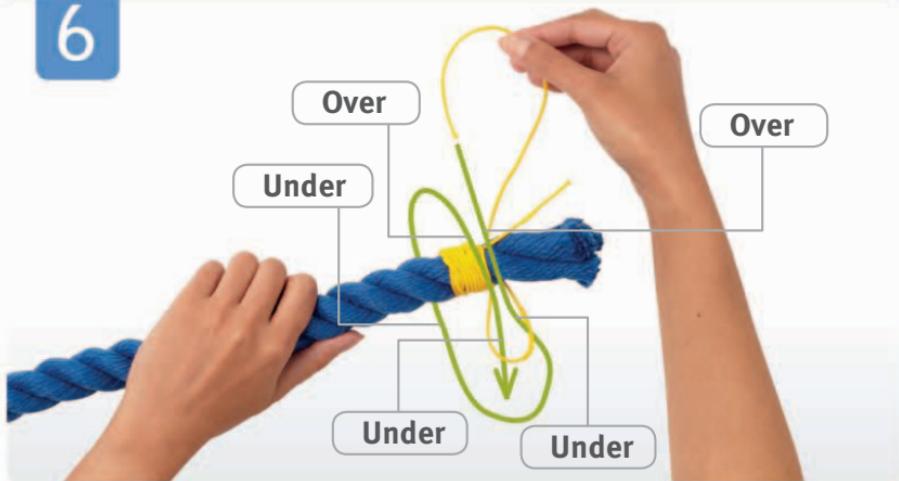
4



5



6



7



8

Tighten and trim to finish



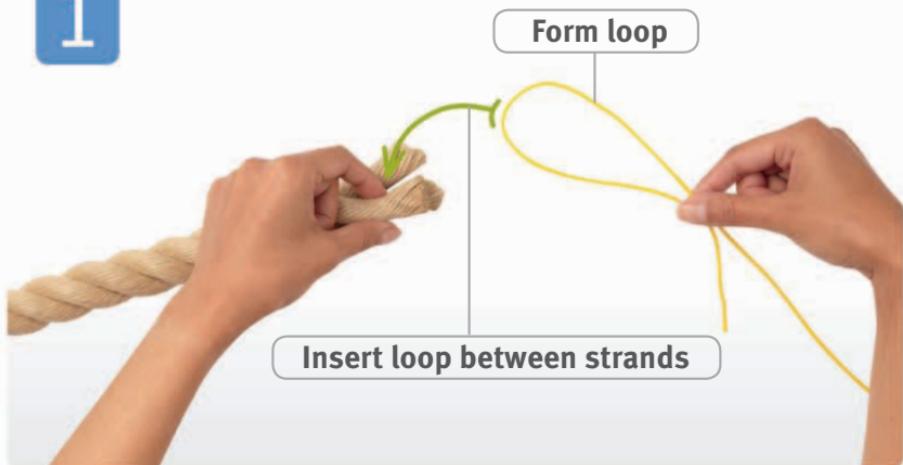


Sailmaker's Whipping

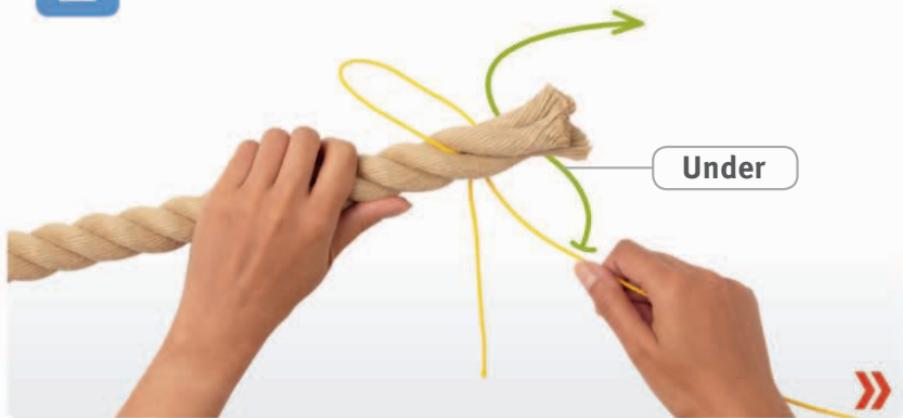
- The most secure finish for the end of a three-strand rope.
- Can only be made at the end of the rope.
- Whipping should be roughly one-and-a-half times the diameter of the rope.



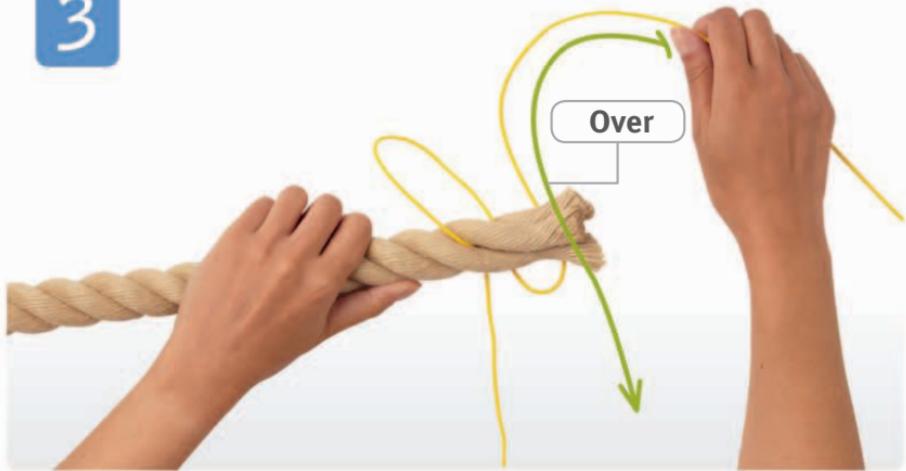
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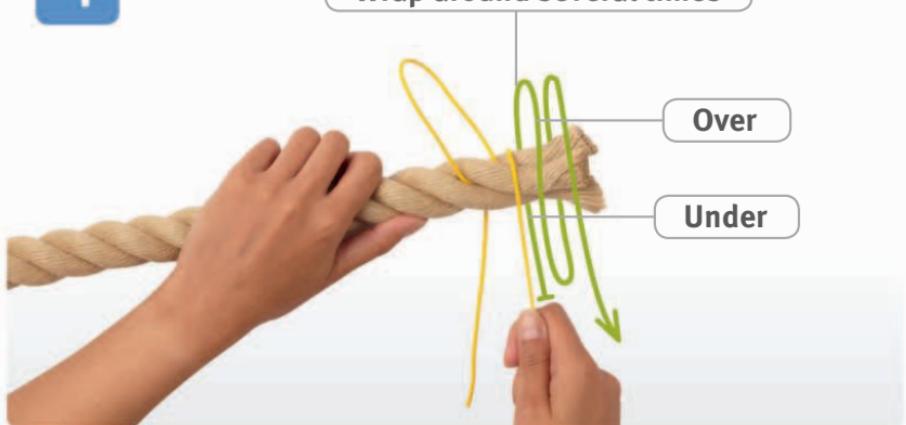
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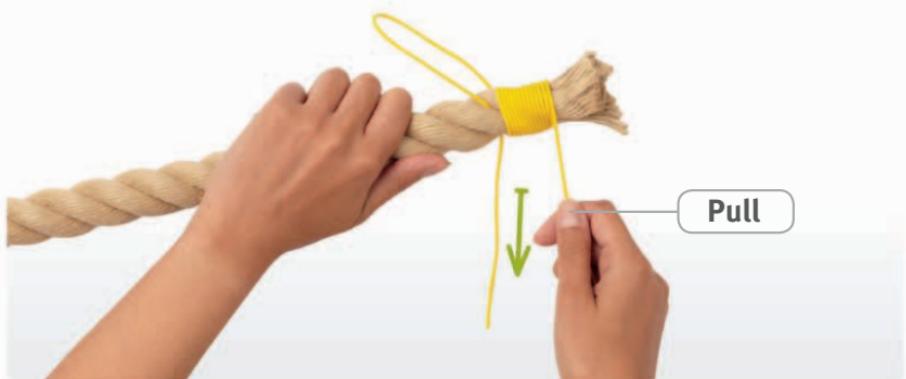
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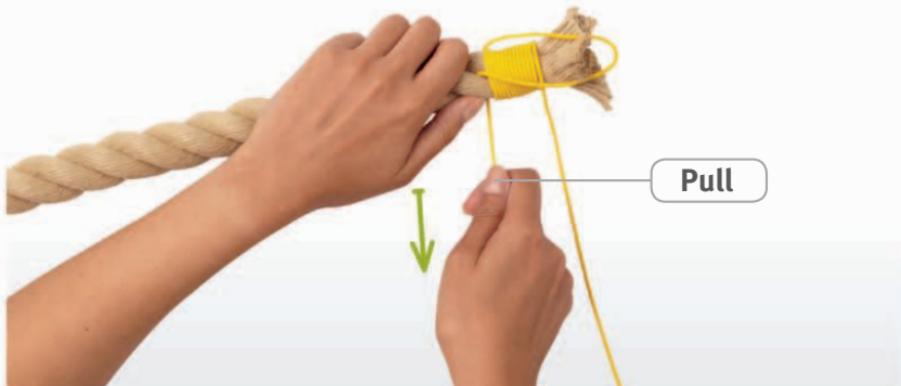
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Insert loop between strands



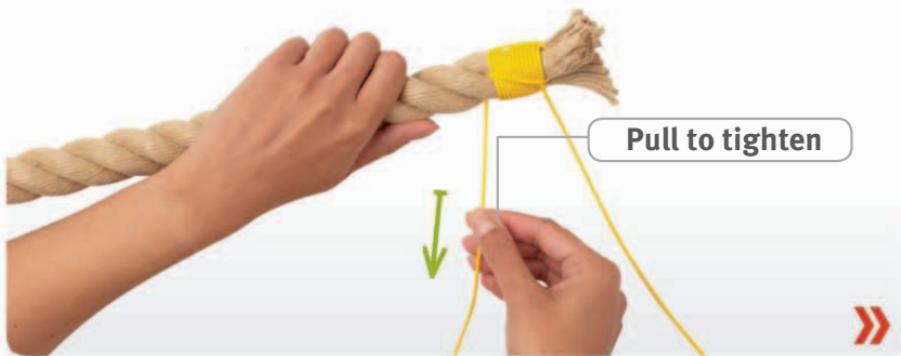
7

Pull



8

Pull to tighten



9

Insert twine between strands



10



11

FINISH WITH A SQUARE KNOT (»pp.85–86)





Palm and Needle Whipping

- The perfect whipping to secure a braided rope.
- Can be used in the middle of a rope.
- Requires a palm and a sailmaker's needle (see p.19).
- Preferred by sailmakers.

**1**

Roll rope over as you pull twine through

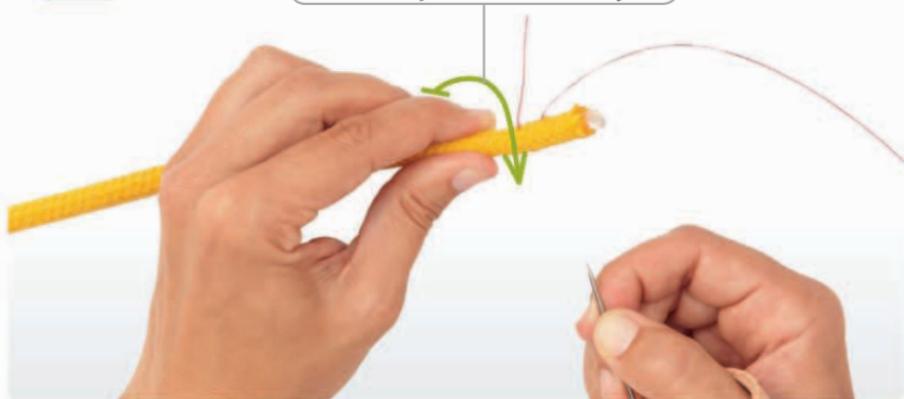
**2**

Through



3

Roll rope toward body



4

Hold thread
with thumb

Through

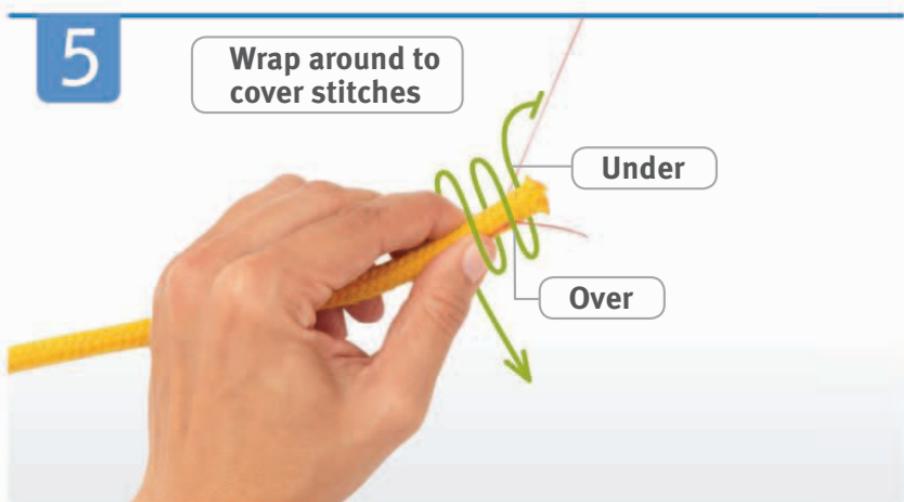


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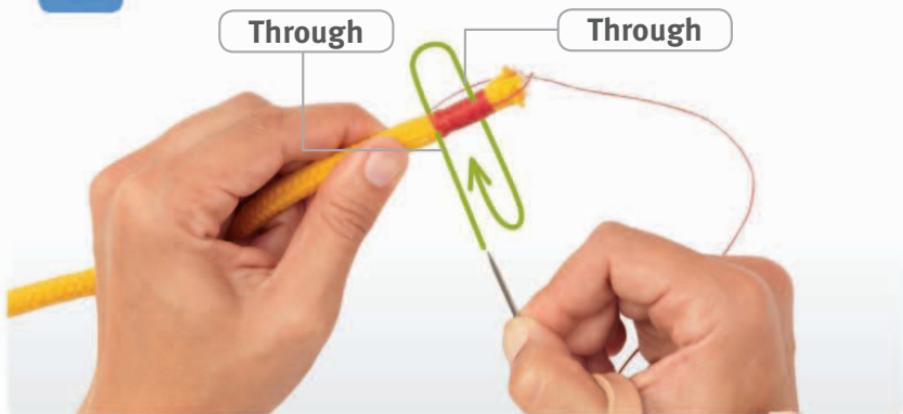
Wrap around to
cover stitches

Under

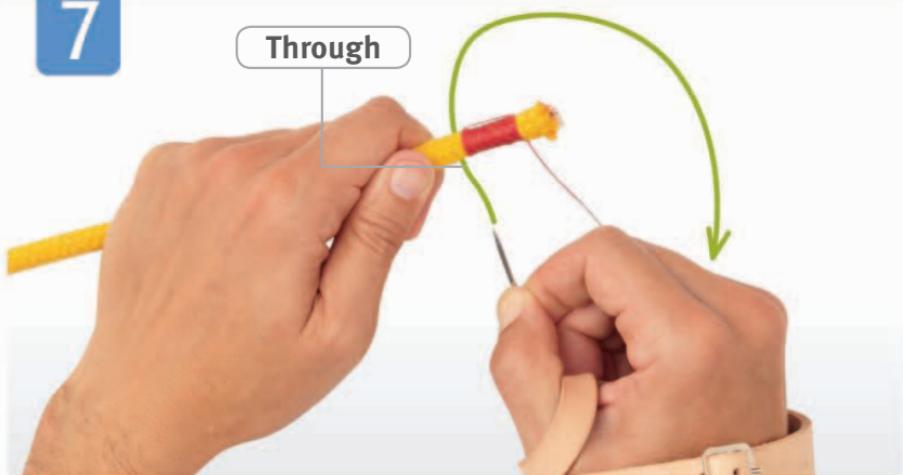
Over



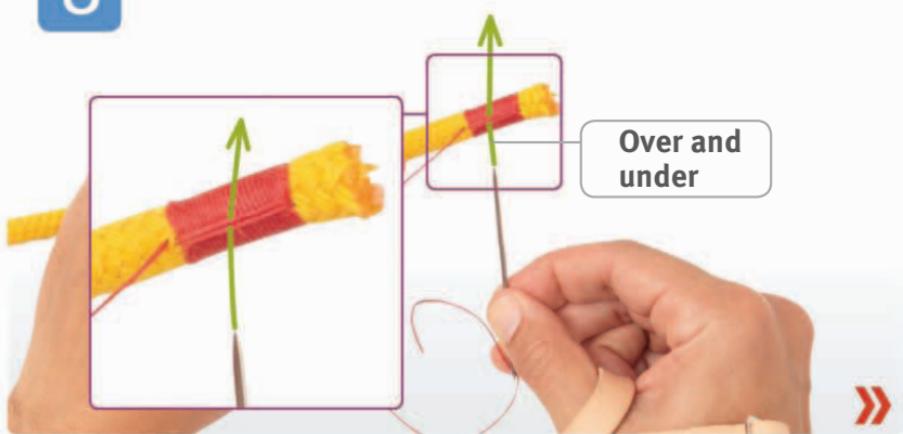
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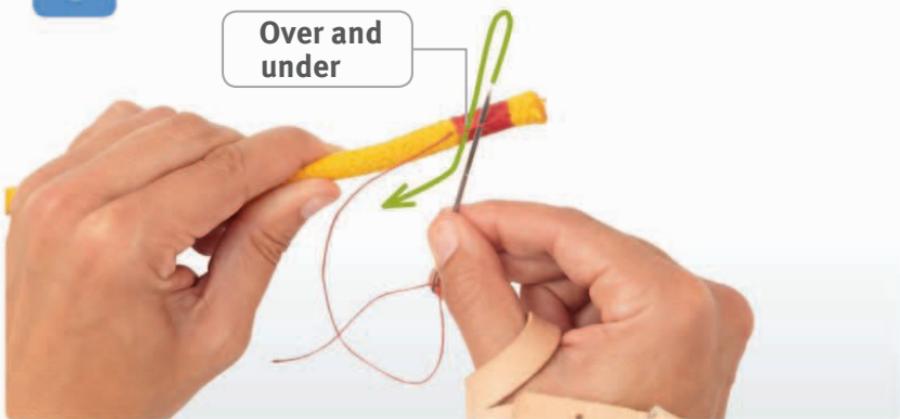
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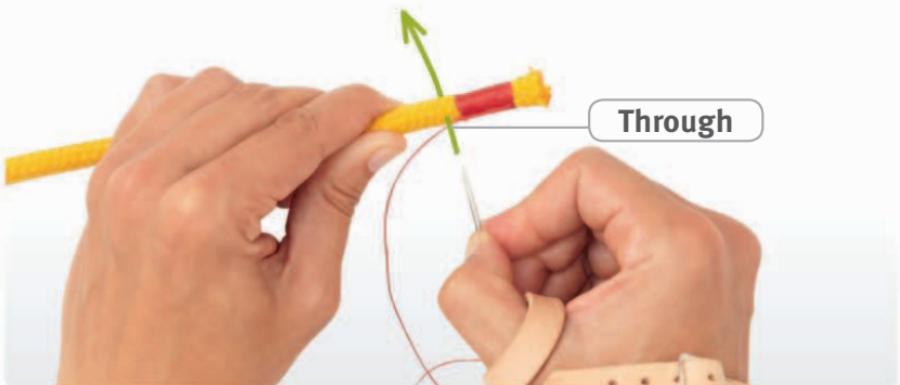
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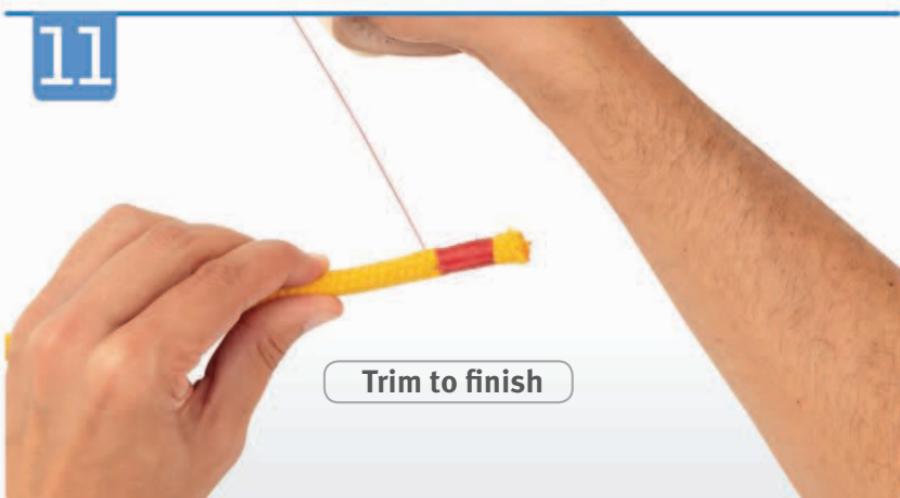
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10



11





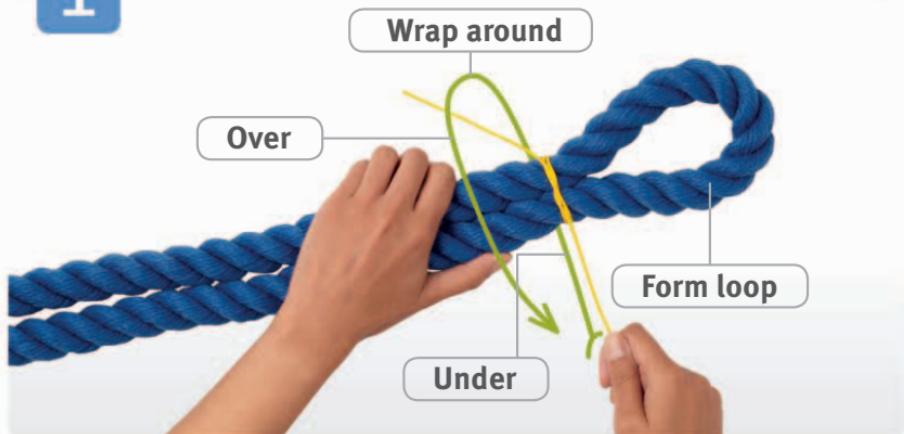
Seizing

- A tightly compressed whipping that can be used to bind two parts of a rope together.
- Historically used on the heavy fixed rigging found on sailing ships.
- Must be tied tightly and evenly.

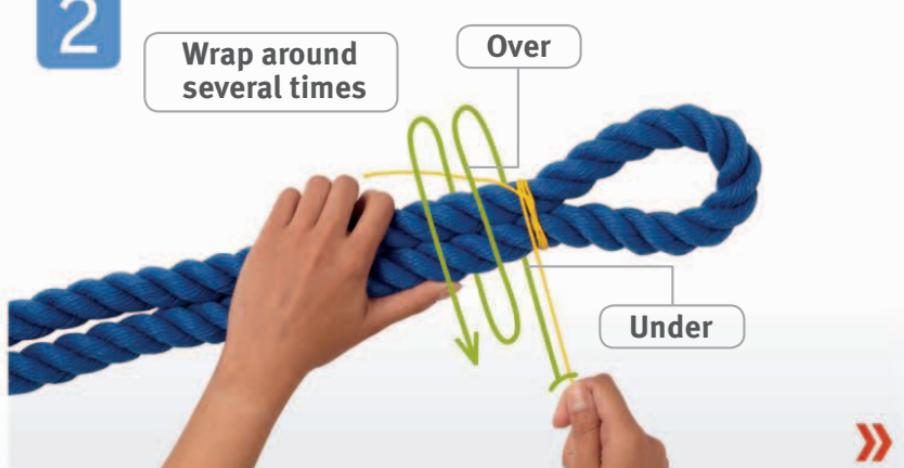


1

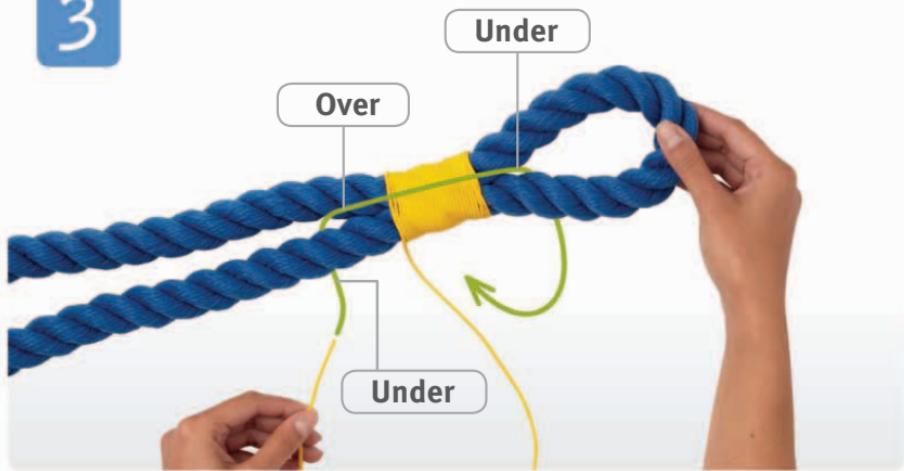
SECURE TWINE WITH A CONSTRICTOR KNOT (»pp.109–10)



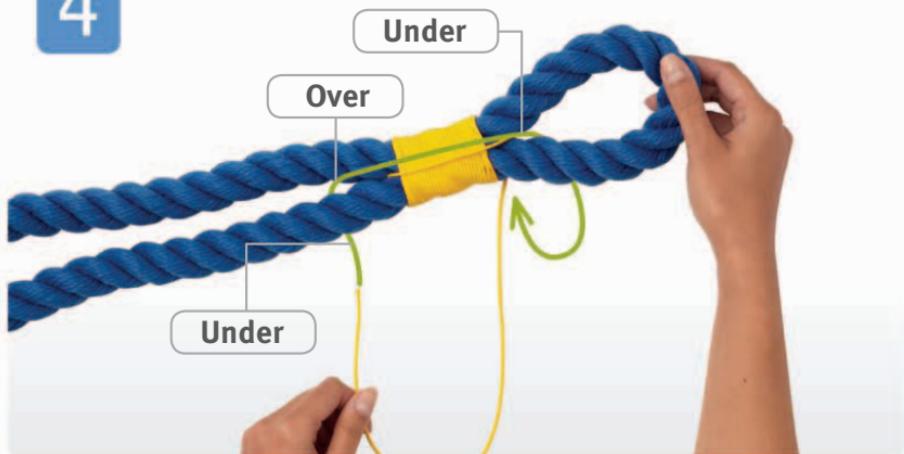
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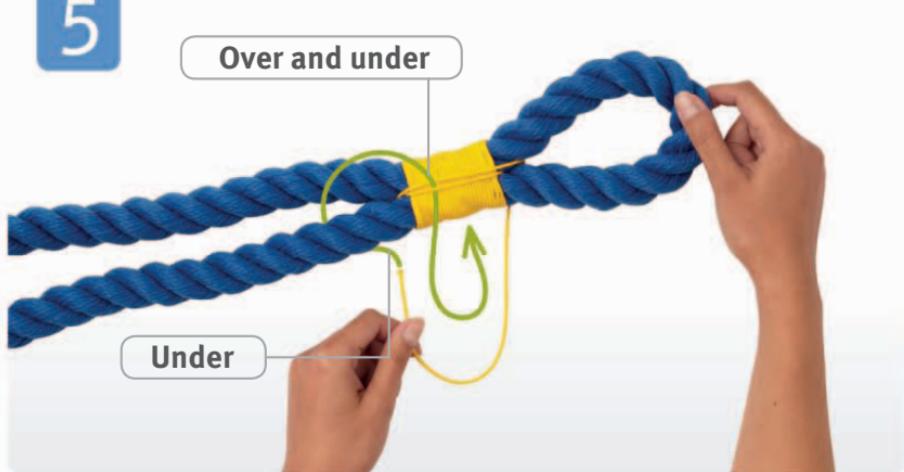
3



4



5



6

Under and over



7

Pull to secure



8

Tighten and trim to finish



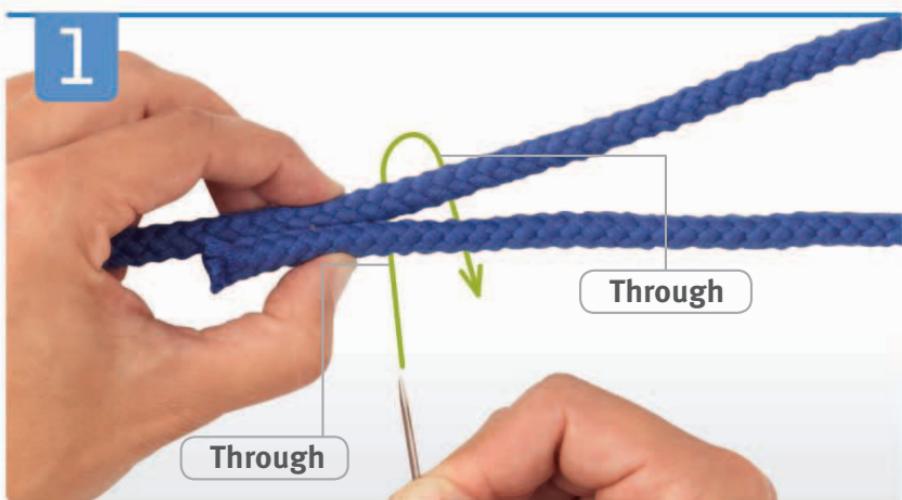


Stitch and Seize

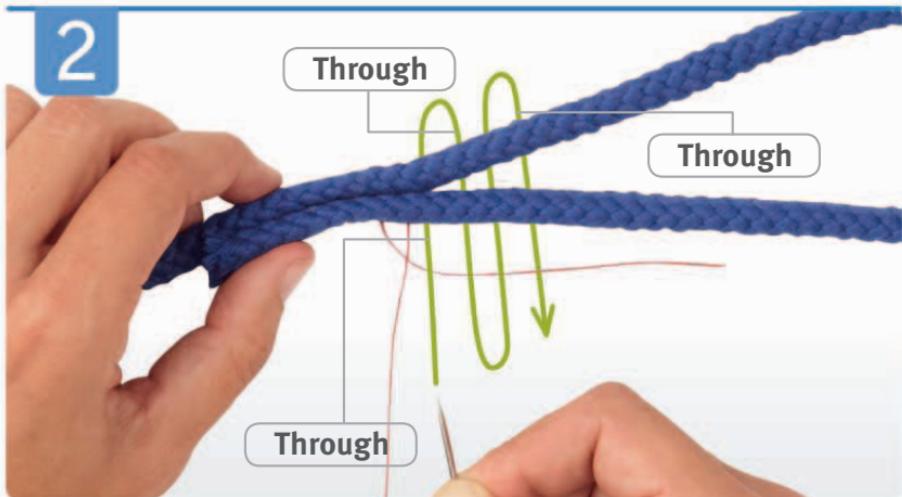
- Used to make a permanent eye on the end of a braided rope.
- Requires a palm and a sailmaker's needle (see p.19).
- Stitch first, then seize over the stitches.
- Make a locking stitch along the seizing halfway through the process for additional security.



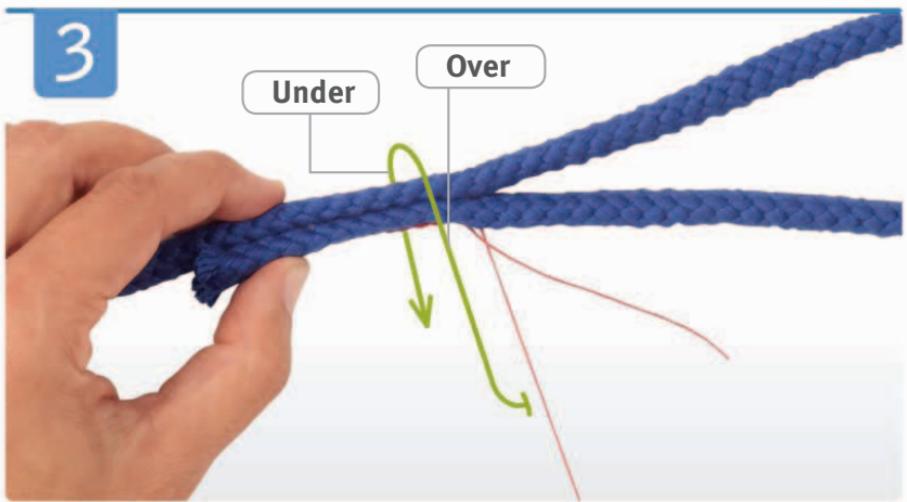
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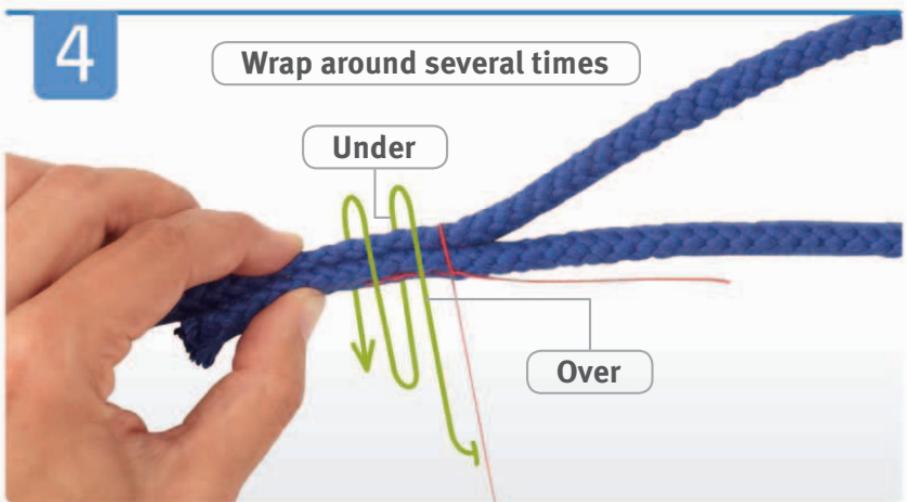


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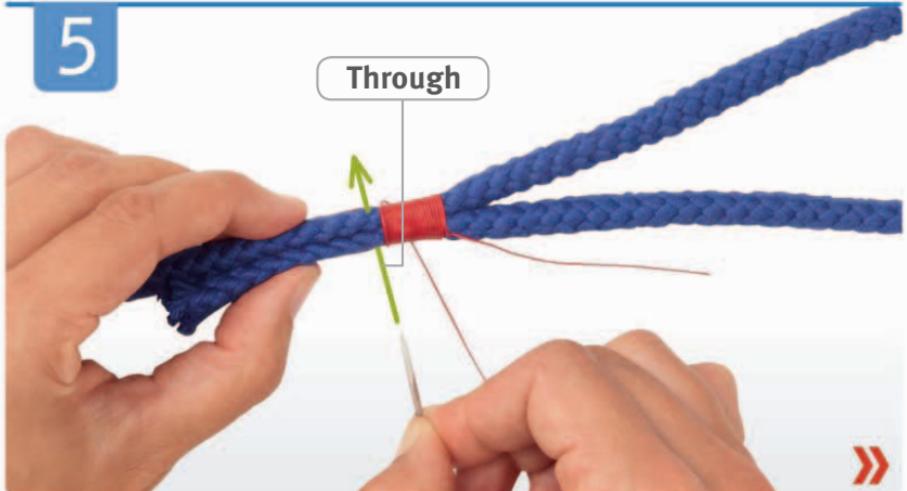
4

Wrap around several times



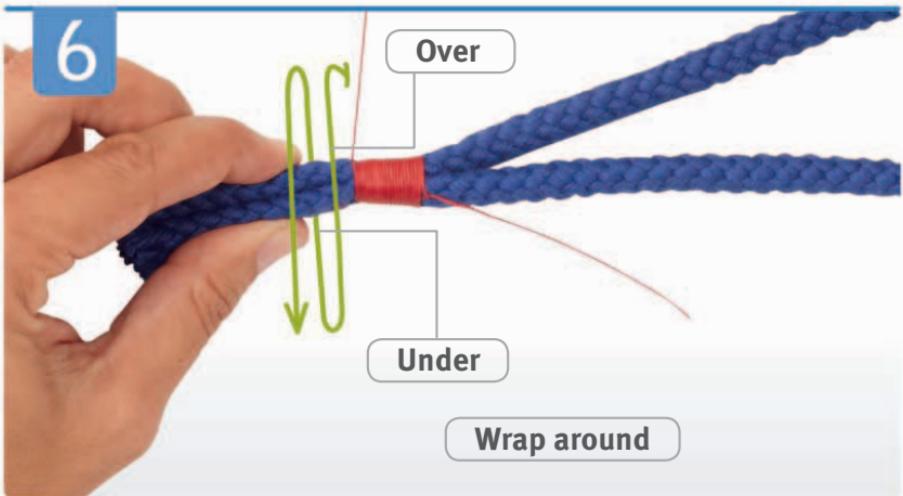
5

Through

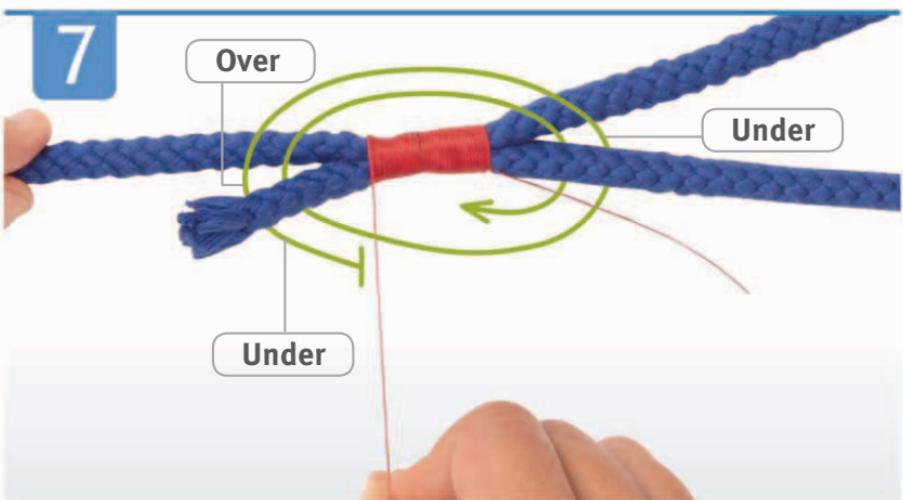


392 SPLICES AND WHIPPINGS

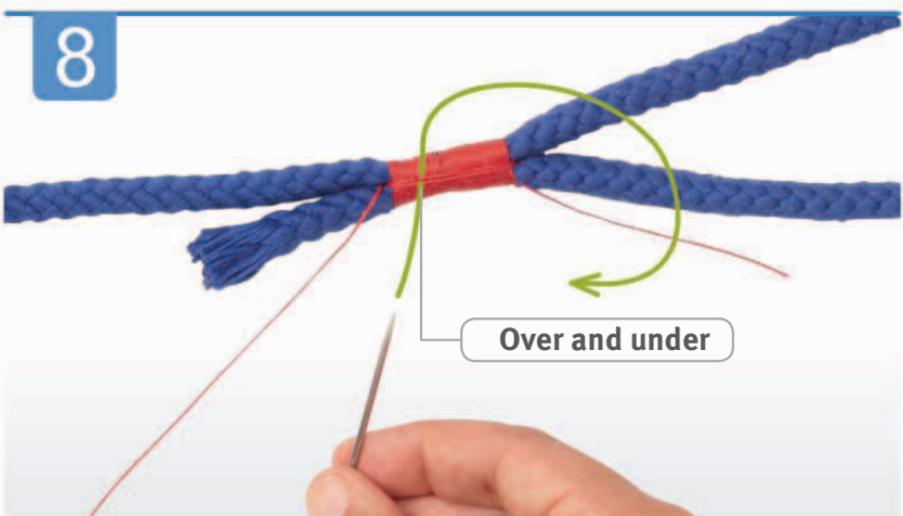
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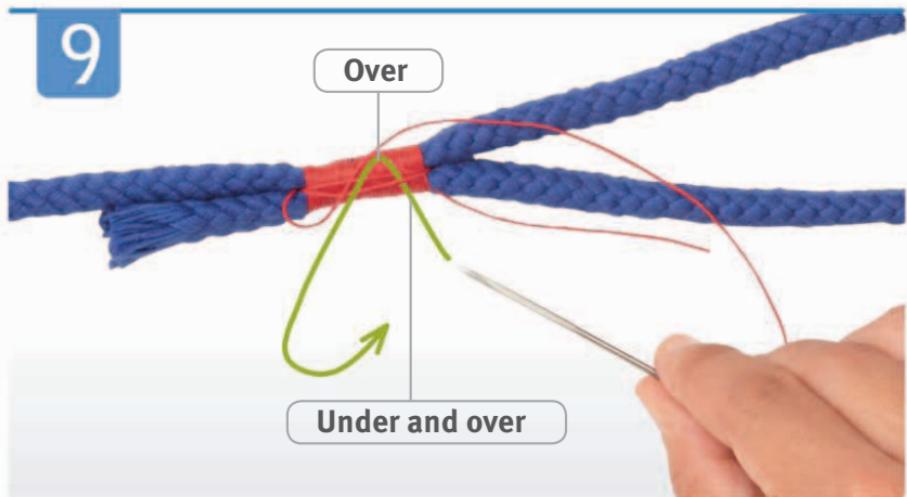
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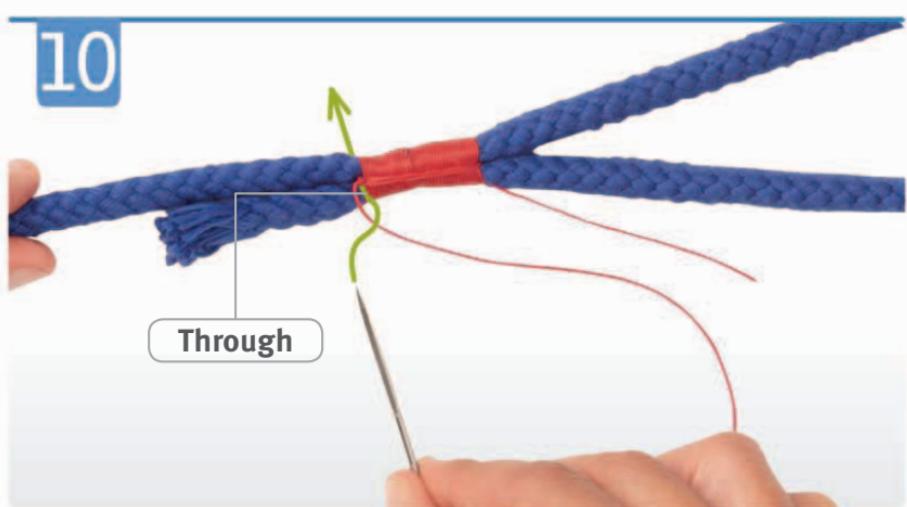
8



9



10



11



Glossary

As well as explaining the knotting terms used in this book, this glossary also features some specialized climbing and sailing terms.

Belay To secure one climber to another with a rope.

Bight 1 The part of a rope that is folded back on itself to form a narrow loop. **2** The curved side of a knot.

Blood knot Knot consisting of many turns, used in angling or climbing.

Boat hook In sailing, a pole with a hook on one end, used to help catch hold of a rope or ring.

Body The tied part of a knot.

Braid Strands or yarns woven or braided together in a regular pattern.

Braided rope Rope consisting of multiple woven or braided strands or yarns.

Breaking rope The part of a rope that controls the amount of slip of a knot, and that restricts the amount of slip a knot has during a fall.

Carabiner In climbing, a D-shaped or oval metal snaplink fitted with a locking device.

Chafe The frayed part of a rope, caused by abrasion against a rough surface.

Cleat On a boat, a fitting around which a rope is wound to secure it.

Coil A rope that has been placed into a neat series of circles or loops, often for storage purposes.

Cordage The general term for rope.

Core The inner part of a rope which is made from parallel, twisted, or braided rope fibers.

Crossing turn A circle of rope made by crossing one end of a rope over itself.

Eve 1 A hole in a knot. **2** The hole inside a circle of rope. **3** A permanent loop fabricated at the end of a piece of rope. **4** The opening at the end of a fishing hook, through which a line can be threaded.

Fid A sharp, pointed wooden tool used to separate strands of rope.

Frapping turns Extra turns made across lashing, whipping, or seizing turns.

Half hitch A circle of rope wound around an object or boat fitting. It is kept in place by placing one end of the rope across and at right angles to the other end.

Hard-laid rope Tightly twisted, three-strand rope designed to be very stiff and firm.

Heaving line The light line attached to a mooring rope that is thrown from a boat and used to haul a mooring rope ashore.

Laid rope A rope made by twisting strands of yarn together.

Large-diameter rope Rope of around 1 in (24 mm) diameter or more.

Lash; lashing To secure two or more adjacent or crossed poles by binding them with rope; the term for the binding itself.

Lashing turn A turn used to bind poles together, as part of a lashing.

Lay The direction in which the twists of the strands in a laid rope lie.

Lead The number of strands used to make a braid, used particularly in a Turk's Head knot.

Line A length of rope measuring less than 4mm in diameter.

Loaded rope The part of a rope that applies force to a climbing knot.

Loop A circle of rope made by placing two parts of a rope together, without crossing them over.

Marlinspike A slim, pointed, metal spike that is commonly used to separate strands of rope.

Netting needle A pointed tool used for manipulating fine line when making a net.

Palm A glovelike, leather strap containing a metal plate and worn on the hand, to protect the palm while pushing a sailmaker's needle through a rope.

Rigger Ships' rigging manufacturer.

Rigging Ropes and spars designed to control the sails of a ship.

Round turn A complete circle, followed by a half circle, made with a length of rope around an object.

Seize; seizing The process of joining two ropes, or two lengths of a rope, by binding them with twine; the term for the binding itself.

Sheath A covering made from woven strands intended to protect the core of a rope.

Sheet Rope that controls a sail.

Shock cord Rope with a high degree of stretch, made from a rubber elastic core covered by a braided protective sheath of nylon fibers, also known as elasticated cord.

Sling A continuous circle made from rope or tape that can be made by tying the ends of the material with a Fisherman's Knot or a Water Knot. Also referred to as a strop.

Small-diameter rope Rope with a diameter of approximately 4–8mm.

Spade end The flat end of a hook, with no eye for threading line.

Standing part The length of a rope not used or in reserve during the tying of a knot.

Swedish fid A hollow, pointed, metal-bladed tool for tucking strand ends when splicing stiff rope.

Tape In climbing, the flat, woven webbing used to make slings.

Thin line A piece of line measuring less than 2mm in diameter.

Three-strand rope Rope consisting of three strands twisted together.

Tuck To pass one part of a rope underneath another part of itself.

Turn To pass a rope around one side of an object.

Unlaid rope A rope separated into its component strands.

Whipping turn The turn made around the end of a length of rope, as part of a whipping.

Whipping twine A type of thin line, sometimes made from nylon, that is used to bind the end of a rope.

Working end When tying a knot, the end of a rope used.

Working load The maximum load to which a rope should be subjected.

Yarn Natural or synthetic fibers twisted into threads.

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About the Author

Des Pawson is a global authority on knots who has been producing commercial ropework for over 40 years. He has written several books on the subject of knots and ropework and is a cofounder of the International Guild of Knot Tyers. He has been awarded an MBE for his contribution to the knot and rope industry.

www.despawson.com

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