Knots 2025-03-20

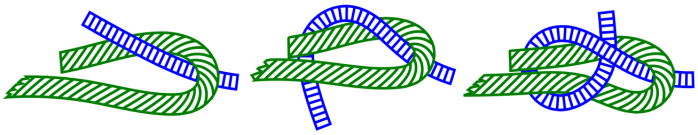
Rope is useful for many practical problems, and knots make that possible. It's good to always have some short cords with you in your pocket. This cheatsheet shows some of the most common general-purpose knots, and an advanced one of each category.

Bends

Bends connect two ropes together. If the ropes' sizes are too different, you can also make two interlocking loops.

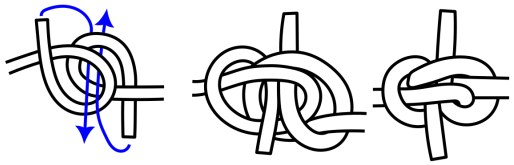
Sheet bend (fi: jalussolmu)

A secure joining knot for two ropes. The thicker rope is the "bent" one (and it could also be a loop, or flat sheet bunched up).



Zeppelin bend (advanced)

An advanced, slip-resistant, non-jamming bend knot. (to be looked up yourself)

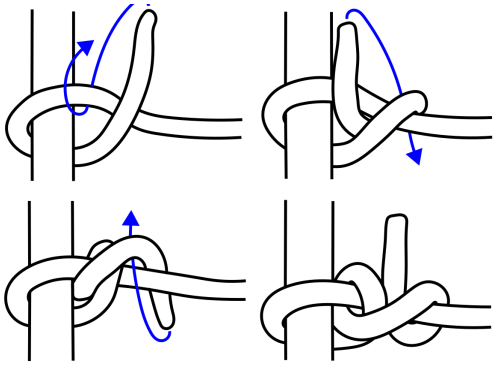


Hitches

Hitches attach ropes to a fixed object. When you need security, you can also tie a loop knot around the object.

Two half hitches (fi: ulkosorkka)

A good solid knot for general purposes. If left alone it can eventually become loose.



Clove hitch

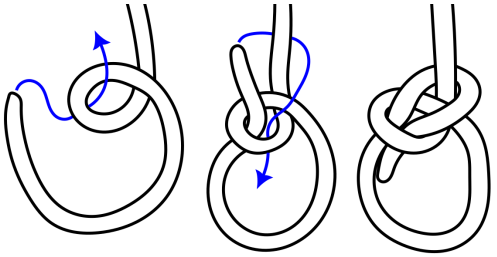
See "binding knots". It is also a good hitch, but it has to be tied around a small round object otherwise it quickly gets shaken loose.

Loops

Loops can be fixed (not shrinking when pulled) or slipped. Below are fixed loops.

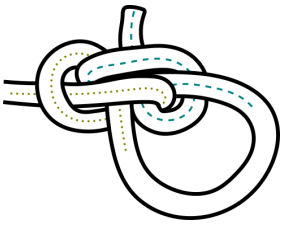
Bowline (fi: paalusolmu)

Commonly called the "king of knots", it is a solid, non-slipping loop knot. Tighten carefully so that it looks like this.



Zeppelin loop (advanced)

The loop equivalent of the Zeppelin bend is very strong and non-jamming, but requires an overhand knot to be made first. (to be looked up yourself)

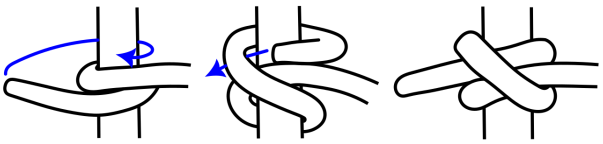


Binding knots

Binding knots wrap around something and hold it together, for example closing a sack, a bunch of sticks, or a bandage.

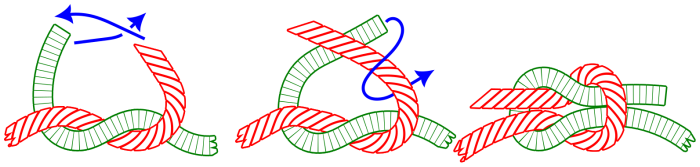
Clove hitch (fi: siansorkka)

This is also a hitch knot. The crossing rope should be on a curved surface to hold.



Square knot (fi: merimiessolmu)

The square knot is *not* a bend and isn't made for attaching two ropes together. You could use it to, for example, attach a bandage around a leg.



Constrictor knot (advanced)

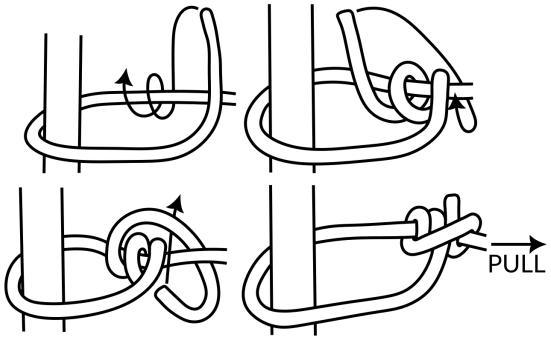
A very strong binding knot. It will jam very hard when pulled tight.

Friction hitches

Friction hitches are adjustable: if you pull on the rope, the knot stays fixed, but if you push the knot itself it will move. They need to be carefully tightened (and re-tightened) to hold.

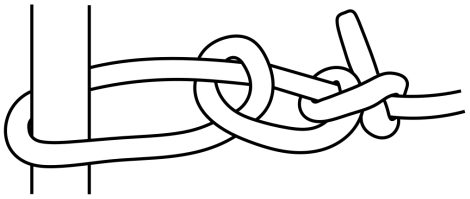
Taut line hitch

This is the friction hitch taught by the US scouts and works OK if it stays tight. It has a way of coming undone.



Telttasolmu (fi)

This is the friction hitch taught by the Finnish scouts. You can make it stronger by adding more loops, but like the taut-line hitch it can also come undone over time.



Blake's hitch (advanced)

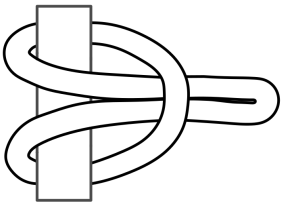
An advanced, more secure friction hitch well-known by arborists. (to be looked up yourself)

Common knot terms

Strength: All knots reduce the strength of rope, commonly 40-80% of the strength of the original rope. A safe working load of most ropes even without knots is only 20% of the breaking strength.
Jamming: A non-jamming knot can always be untied easily, no matter how hard it has been tightened.
Locking: A locking knot's tension keeps the working end from unraveling, which means it can't be tied or untied under tension. I made up this term myself, I haven't heard a better term.
Working end: the free end being used to make the knot.
Setting or **tightening up**: knots need to be carefully tightened to the right form (often pulling all ends at once or in the right order), otherwise they will **capsize**.
Bight: a partial loop pulled out from a straight rope.

Extra

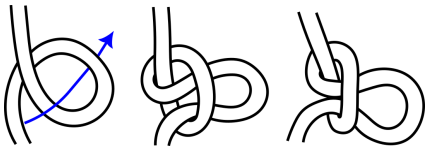
Lark's head



Need to attach something to the middle of a rope, or hold a bundle of things in a looped rope? This can make a fastening point even in a loop with no free ends.

Overhand slip knot

Slipping a bight through a loop makes a slipped overhand knot. It can be used as a hold point (in one direction) for attachments.

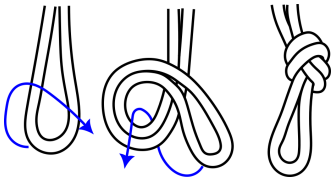


Timber hitch

An easy to make knot that can hold onto a cylindrical object. Always easy to untie, but doesn't hold without tension. Used in certain lashings. (look it up yourself)

Knots on a bight

A "bight" is a partial loop pulled out from the middle of a rope. By using this as a single working end, you can tie most knots without access to the end of the rope. Here you see an overhand knot on a bight.



Coiling a rope

Coiling wraps up rope to keep it organized.

Lashings

Lashings tie objects such as poles together to make larger constructions. Wrap: the ties that hold the poles together. Frap: ties which pull the wraps tighter.

Square lashing: clove hitch, wrap (over/under), frap (in between), clove hitch.
Diagonal lashing: timber hitch, wrap (diagonally), wrap (other diagonal), frap (in between), clove hitch.
Shear lashing: clove hitch, wrap, frap, clove hitch.
Round lashing: clove hitch (around both), wrap, clove hitch (around both).
Tripod lashing: clove hitch, wrap, frap, clove hitch.