Figure 8

A Knot of Many Uses

The figure 8 knot is a very versitile knot. It has variations for tying a loop in the end of a rope, for joining two ropes together, and for tying a stopper knot (used to stop the rope from sliding through a small hole, or to provide a better grip to hang on to the rope like for tug-of-war.)

All of the variations of the figure 8 have the same basic structure, so learning them should be easy once you learn the basic figure 8 stopper.

It is also a secure knot, meaning it is unlikely to come untied accidentally. This is especially true when used to tie a loop on the end of a rope. Because of this security, rock climbers rely on the figure 8 loop to tie their ropes to their harnesses.

The main downside to the figure 8 is that it often takes longer to tie than other alternatives. For example, the bowline is a faster way to tie a loop, and the sheet bend is a faster way to join two ropes. The figure 8's selling points are that it is secure and that it is easy to learn all the variations.

How to Use This Guide

My goal is to help you learn the figure 8 knot well, so you'll be able to remember it when you need it. This will take diligience on your part, but it will be worth it when you find you can tie the knot stopping to look it up online.

Suggestions for how to get the most out of this guide:

1. Tie each knot as you're studying. It is much easier to learn when your fingers are manipulating the rope than just by reading.

2. Tie the knots slowly at first and pay attention to how the rope is bending, how it is crossing itself, how the knot comes together, etc. Lose yourself in the knot tying.

3. Go through the guide in order. Some of the variations build on knowledge gained from studying earlier variations.

4. The "Structure and Related Knots" section at the end is optional, but a deeper understand of how the knot is built and how it related to other knots may help you remember the knot better.

Safety

Many activities involving ropes are inherintly dangerous. If someone's safety depends on the knots you're tying, you probably need additional training. Taking rock climbing for example: yes, I'm showing you how to tie a knot used in rock climbing. However, I'm not showing you how to climb safely. If you want to climb safely, find a climbing gym and take a class. When you do, hopefully you'll find it is easier because you already know the knots!

Figure 8

Figure 8 Stopper: Method 1

The stopper is the simplest version of the figure 8 knot, so we'll study it first. It is also the foundation which all the other variations build on, so the other variations will be easier to learn after learning the stopper.

The stopper is used to stop the rope from passing through a small hole. You can also use it as a handle to get more grip on the rope.

To tie the figure 8 stopper, start at the end of the rope.

Pass the end under the rope to form a loop.

Bring the end back over the rope.

Pass the end up through the loop.

Tighten.

Under, Over, Under, Over

Another way to remember: the tail goes under the rope, then back over the rope, then under the first edge of the loop and over the second edge: "under, over, under, over". Every crossing alternates.

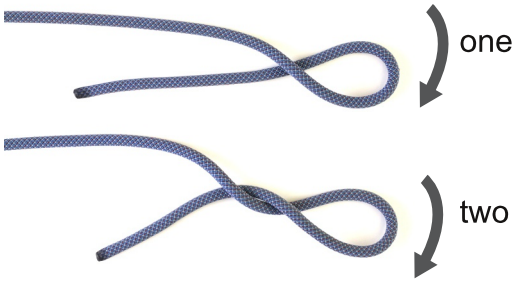
(You can also start by going over the rope first, as long as you always alternate directions. I'll stick to going under first for simplicity.)

Figure 8 Stopper: Method 2

Here's a faster way to tie the figure 8 stopper knot (it is just a little bit trickier, which is why we didn't learn it first).

Double the rope up.

Give it two half-twists towards the loose end (in the pictures, the top comes forward and down)



Pass the end through the loop.
("one, two, through")

Tighten.

If you don't have enough twists, it comes out as an overhand knot. If you have too many, it comes out as...a mess? Not sure what it's called, but it's not a figure 8.

Figure 8

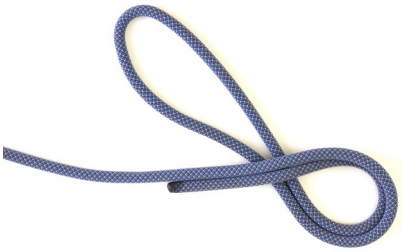
Figure 8 Loop: Method 1

The figure 8 loop is a really secure (unlikely to come untied accidentally) way to tie a loop at the end of a rope.

If you remember from the overhand chapter, you can get a loop by tying an  overhand in a doubled-up section of rope. You can do the same thing with a figure 8: double up the rope, then tie a figure 8. Just like the stopper, but doubled.

First, double up the rope.

Pass the end under.



Back over.

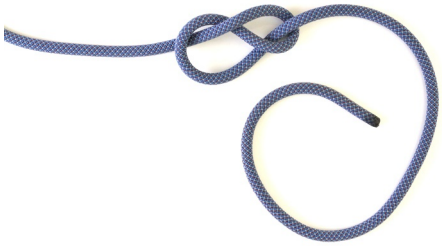
Up through the loop.

Dress & tighten.

Figure 8 Loop: Method 2

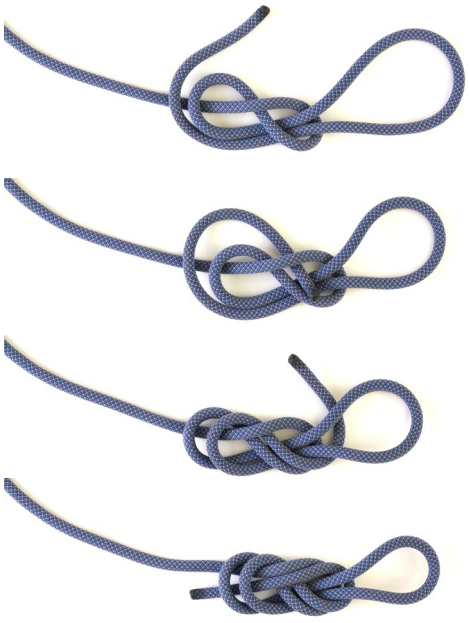
The figure 8 loop can also be tied using the "follow-through" method, which lets you tie it around a closed loop like ring or the handle of a bucket.

Start with a figure 8 stopper with a long tail. Pass it through whatever ring you want to tie the loop to.



Thread the tail back through the knot.

Keep the strands parallel as you trace backwards through the knot.



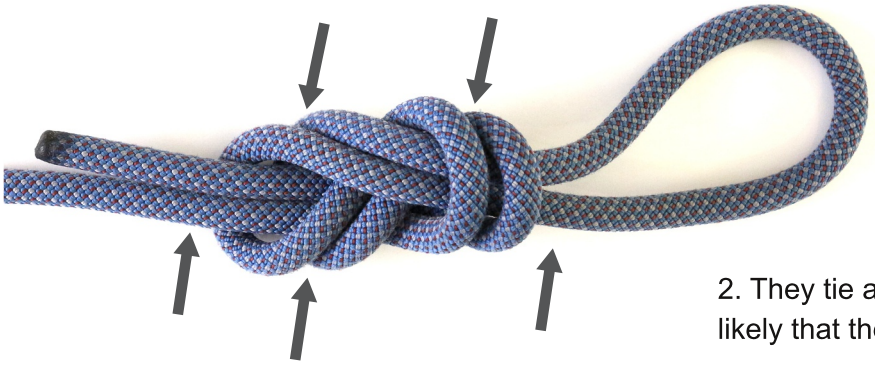
Dress & Tighten.

Figure 8

Dressing the Figure 8 Loop

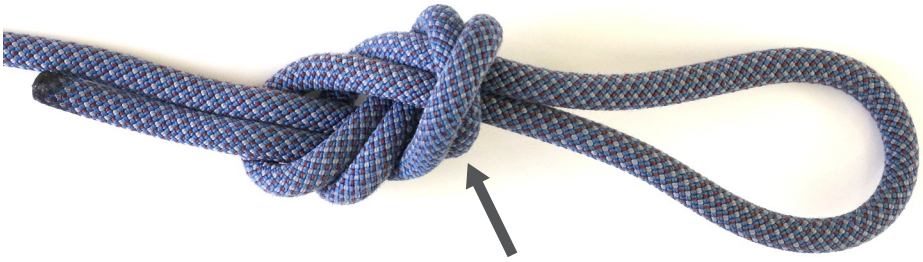
Before you tighten the figure 8 loop, you should dress it, which just means that you should arrange the pieces of the knot carefully so it tightens correctly.

Here's what it should look like:



There are 5 places on the knot where you can see 2 parallel strands. If you flip the knot over and look at the other side, you should see the same thing: parallel strands in 5 places.

In this one, there's a mistake:



See how the two strands are crossing?

This can usually be fixed by pushing the strands around until they lie parallel. In this case, where the two strands are crossing, I'd push the top strand to the right to make it lie to the right of the bottom strand.

Sometimes, fixing one spot moves the problem further along the knot. Just keep fixing it, and eventually you'll get the crossing worked all the way out of the knot.

Safety Check & Backup Knot

When rock climbers use the figure 8 follow-through loop to attach their ropes to their climbing harnesses, they do 2 things to increase safety:

1. They check for the 5 places with parallel strands on both sides of the knot. Especially in the follow-through variation, it is easy to make a mistake and miss a crossing. The resulting knot isn't a figure 8 loop, and may not be secure at all.

2. They tie a backup knot to make it even less likely that the knot will come untied accidentally.

They do this by leaving an extra long tail after the loop is tied, and using that tail to tie a double-overhand knot around the other strand of the rope.

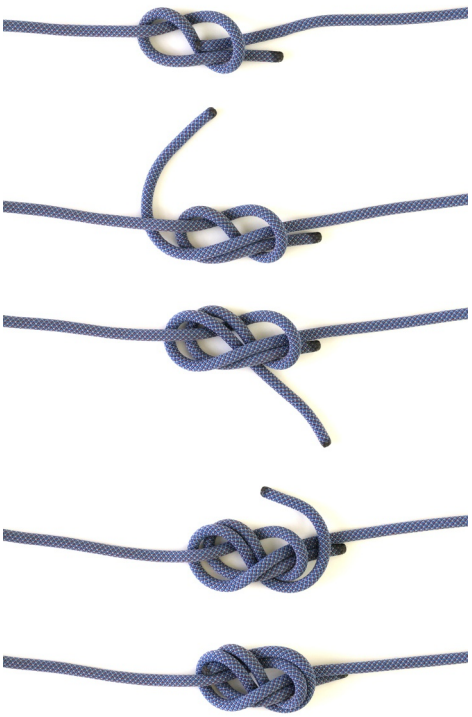
Figure 8

Figure 8 Bend

The follow-through technique you just learned to tie a figure 8 loop can also be used to tie the figure 8 bend (a bend is a knot for joining two ropes together).

Start by tying a loose figure 8 stopper in the end of one rope.

Thread the end of the other rope through the stopper, just like in the figure 8 follow-through loop.

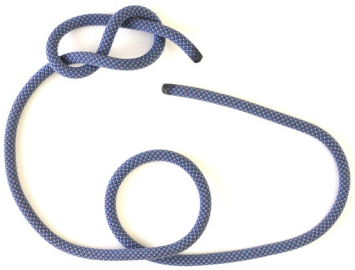


Dress & tighten (just like the figure 8 follow-through, it is important to check that the figure 8 bend is tied correctly before tightening it).

Tying a Loop with the Figure 8 Bend

If you use the figure 8 bend to one end of a short rope to the other end of the same rope, you end up with a different kind of loop.

Start with a figure 8 stopper in one end of the rope.

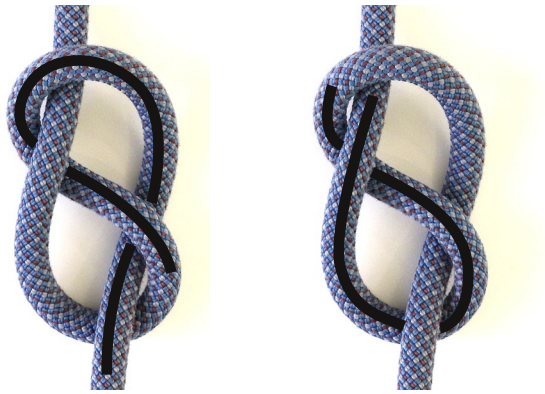


Thread the other end through the knot. Dress and tighten as before.

Figure 8

Structure

The figure 8 is built out of two interlocking half-hitches.



You can actually tie the knot this way if you want. I find it harder to tie it this way, but it does illustrate the structure.

Start by twisting to form the top half-hitch.

In the tail, form the bottom half-hitch around the rope.

Pass the tail through the first half-hitch.

Relation to Overhand

If you remember from the lesson on the overhand knot, one of the ways to tie an overhand is to double up the rope, make a half twist, and pass the end through the resulting loop. The figure 8 has a similar method, but uses an extra half twist.

Overhand **Figure 8**

Because of the extra half twist, the figure 8 has one more crossing than the overhand (4 crossings instead of 3).