

A pocket full of knots.

by [Kiteman](#) on March 13, 2008

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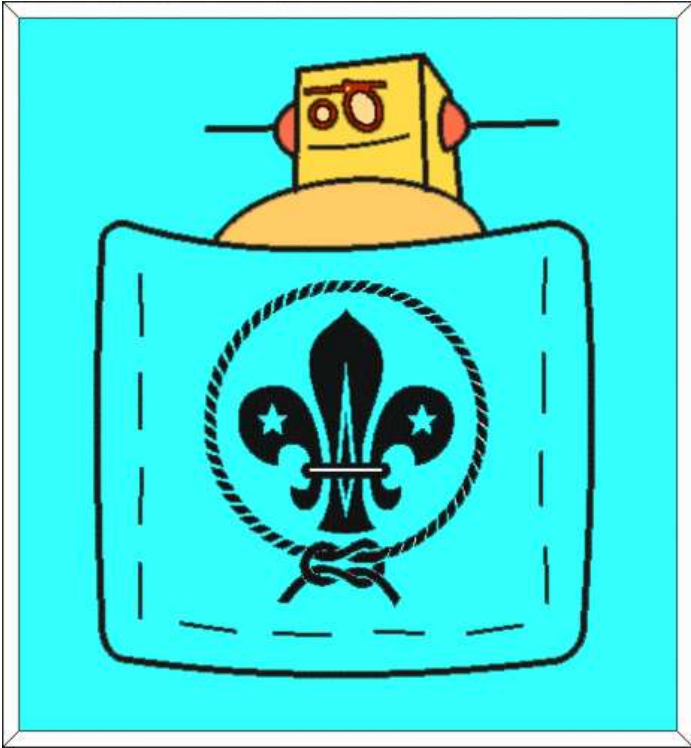
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intro: A pocket full of knots.

Traditionally, a knotting board is a large display of the knots a Scout can make. Being large, they became unpopular.

Now, though, spend a few minutes with card, wire and a cigar tin, and you can have a pocket-sized display fit to earn any Cub or Scout that bit extra credit towards a badge.

(You could consider this to be **eight** Instructables in one, since will also learn how to tie seven different knots. How's *that* for value?)



step 1: What you need.

- Most small tins will do for this project, but the best tins are those flat, conveniently pocket-sized tins that hold a handful of slim cigars*.
- Odd lengths of electrical wire. Mains wire is good for this as it gives you a choice of colours, enabling you to tell one part of a knot from another.
- Wire cutters.
- A piece of stiff card.
- Superglue.
- Fine pen for labelling knots.
- Optional: paints to disguise the carcinogenic origins of the tin.

*Please remember, folks, all forms of tobacco are very, very bad for you. I in no way condone smoking, but I have a friend who does smoke, and he lets me have his empty tins in exchange for me shutting up about what he is doing to his health.



Image Notes

1. They mean it, folks.

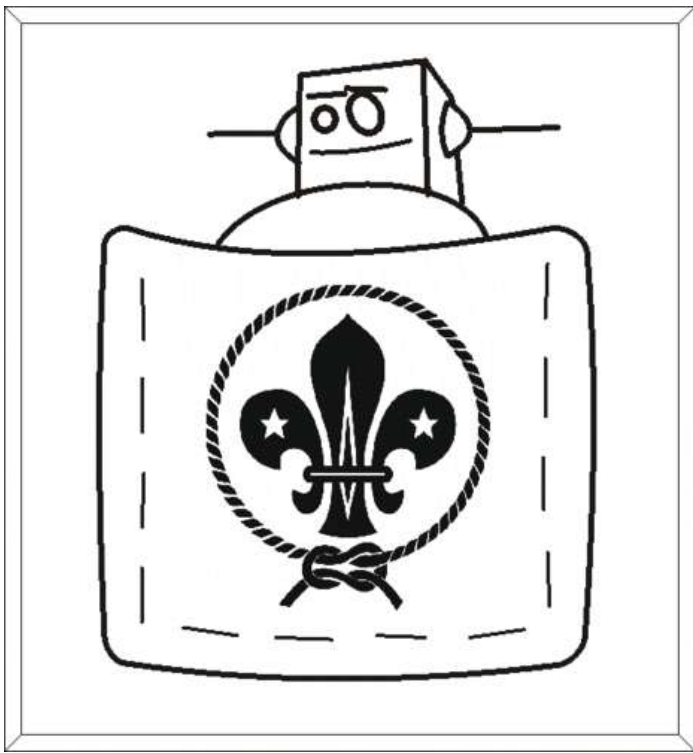


Image Notes

1. This needs covering up.

step 2: Select your knots

The exact number of knots you use depends largely on the size of your tin.

In this tin, I am going to display the following knots:

- Reef knot (step 3)
- Sheet bend (step 4)
- Sheep shank (step 5)
- Bowline (step 6)
- Round turn and two half hitches (step 7)
- Lark's head hitch (step 8)
- Constrictor knot (step 9)

If you are just starting out in knotting, you could make a new tin every time you master a new set of knots, or themed tins - fishing knots, sailing knots, climbing knots etc.

If you are just learning how to tie knots, there are many excellent books available, and several well-produced websites include animations of a variety of useful or decorative knots.

My current favourites are Grog and the 42nd Brighton (Saltdean) Scouts pages.

<http://www.instructables.com/id/A-pocket-full-of-knots/>



step 3: Reef Knot

Ideal for joining two lines of equal thickness, this is the classic "Scout Knot". It is known (incorrectly) as a "square knot" in the US.

Take an end in each hand.

Pass the left end over the right end (making an X shape) and then loop it under, creating the basic "overhand" knot.

Take the end that you started with, now on your right, and cross it back over the other end, making another X above the first overhand knot, and loop it under and through the centre.

Pull tight, and the knot should be flat and symmetrical, with the two ends you started with both on the same side of the lines.

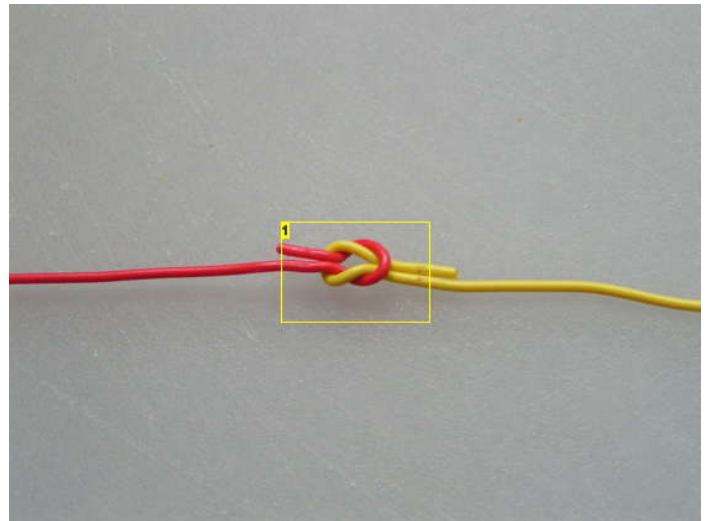
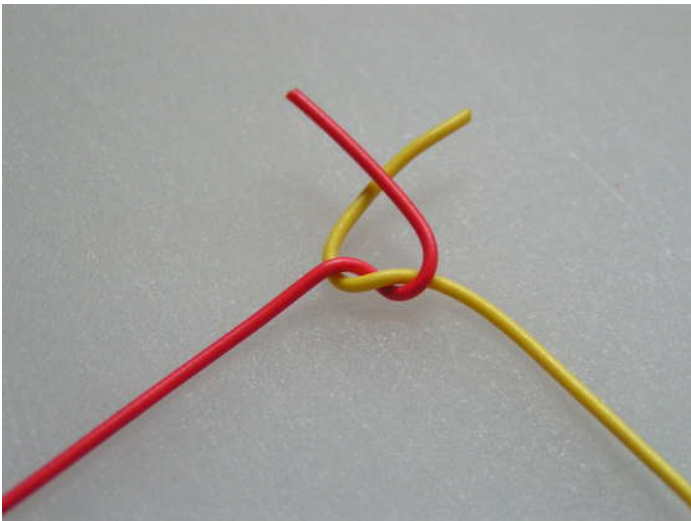
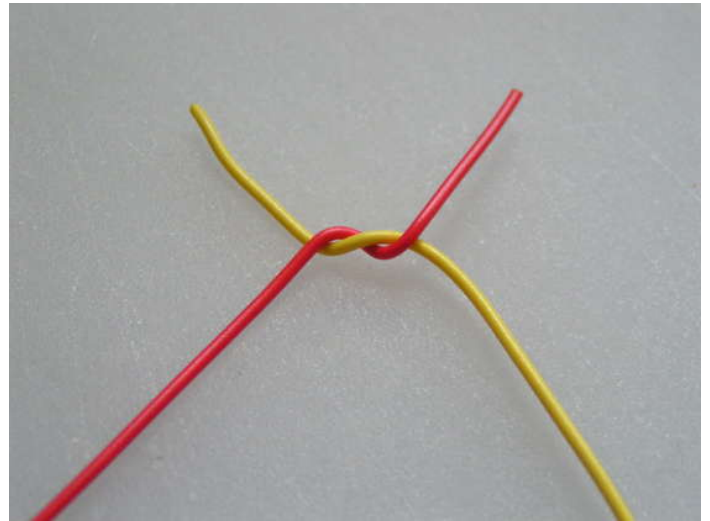
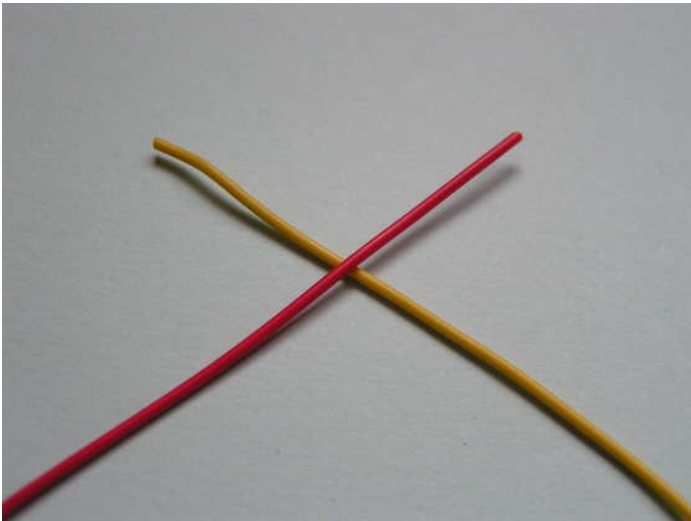


Image Notes

1. The finished reef knot.

step 4: The Sheet Bend

Normally used for joining two lines of different thickness. "Sheet" is the term used by nautical folk for ropes, usually ropes that pull something.

Make a loop in the end of one line (the thicker one). Hold the loop in your left hand.

Pass the second line up through the loop, then round the back of the loop.

Bring the same end round to the front of the knot, and tuck it between itself and the first loop (look at the photos for a clearer idea).

Pull the knot tight and you are finished.

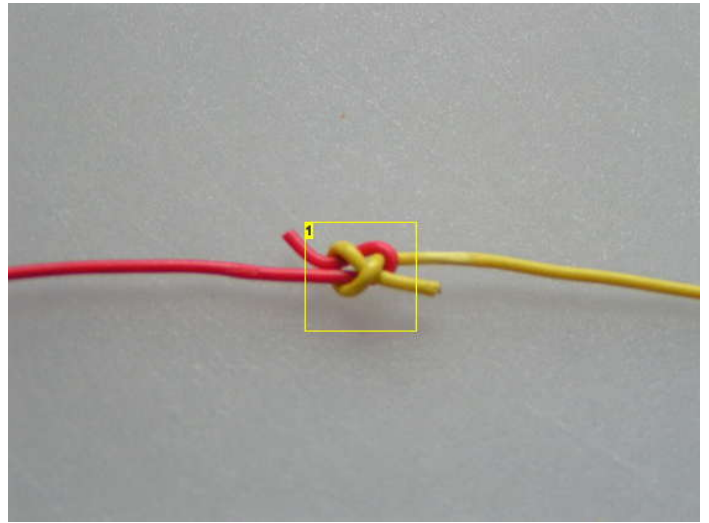
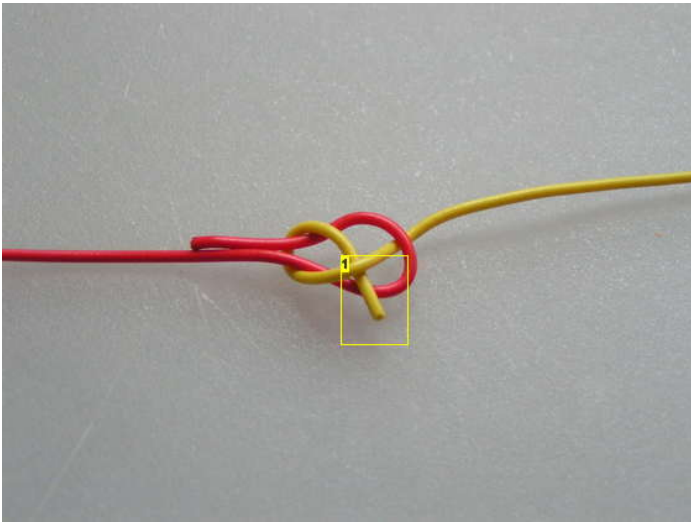
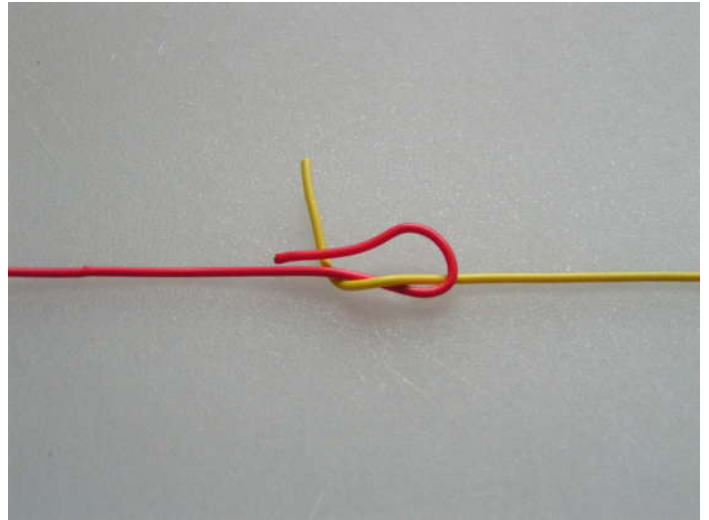
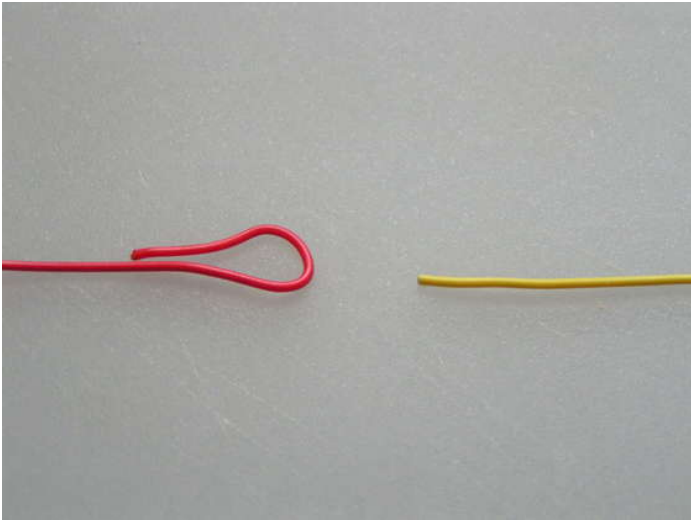


Image Notes

1. The end goes under itself, not back down the loop. If you mess this bit up, the knot becomes a reef knot instead.

Image Notes

1. The finished Sheet Bend.

step 5: Sheep Shank.

This knot is used to shorten a rope without cutting it, especially if you cannot get at the ends for some reason.

Fold a long flat "Z" shape in the line.

Coil a loop in the main line, just past level with the end of the Z - slightly further into the knot than the bend.

Thread the end of the Z through the loop you have just made. Take care to thread it through from the correct side, over the part of the line that leads away from the knot (check the image).

Repeat this at the other end of the Z and pull tight.

This knot is very strong and stable whilst under tension, but comes apart incredibly easily as soon as the rope slackens.

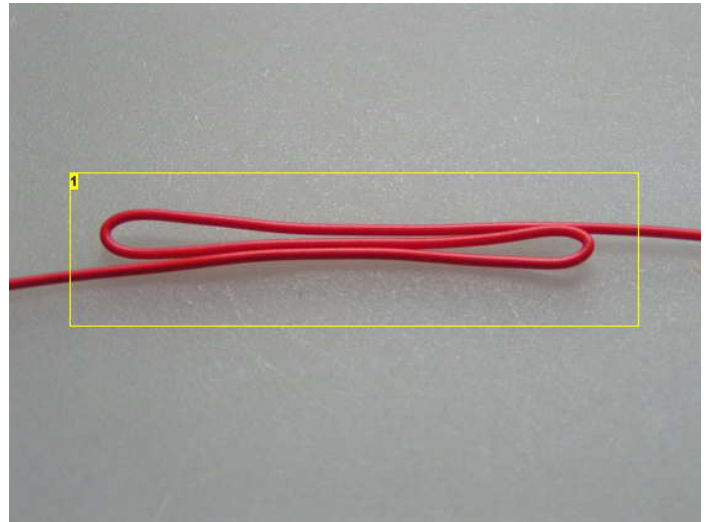
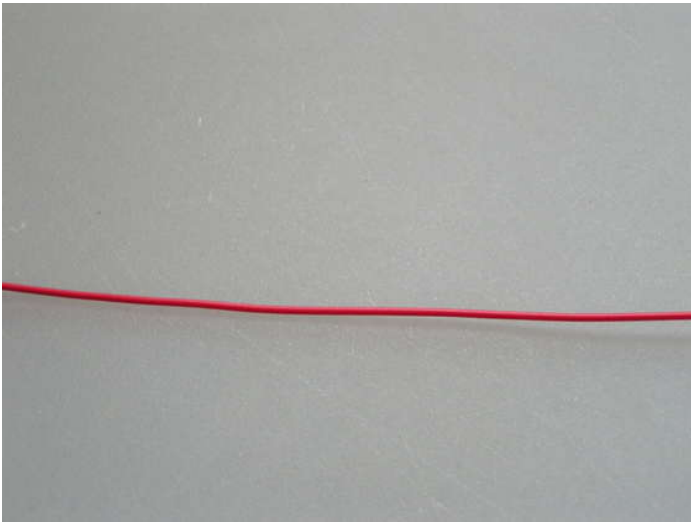


Image Notes
1. A very long Z shape.

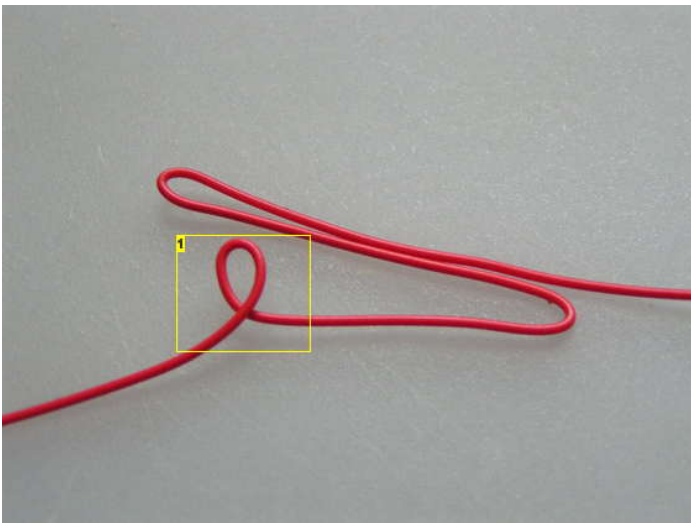


Image Notes
1. Pay attention to which way round your loop is.

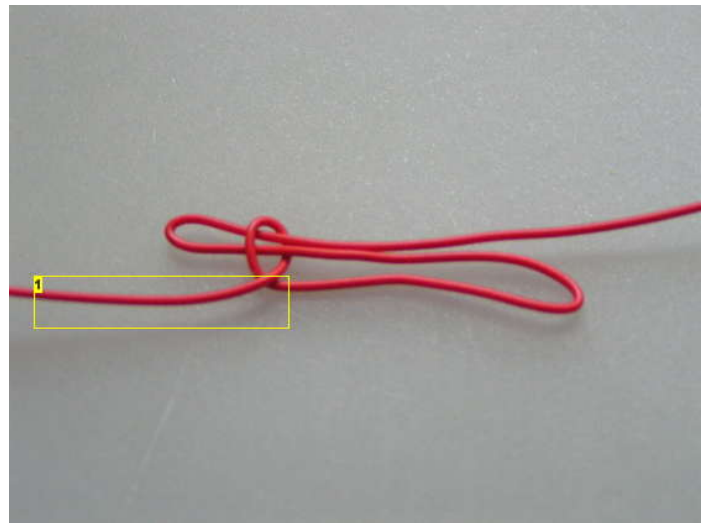
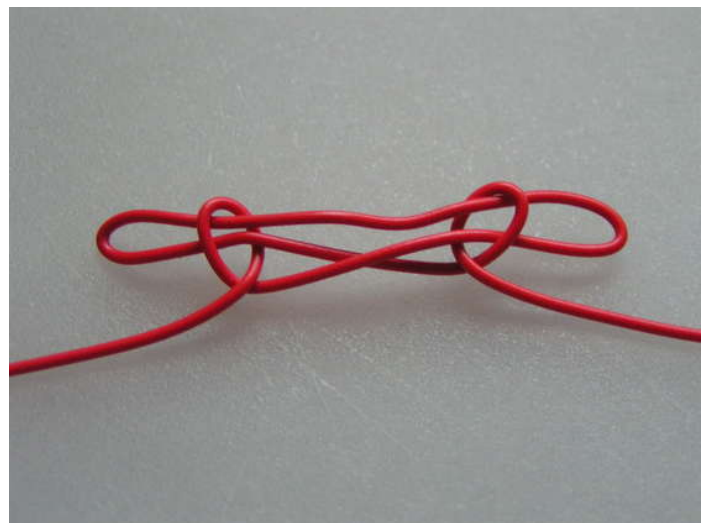
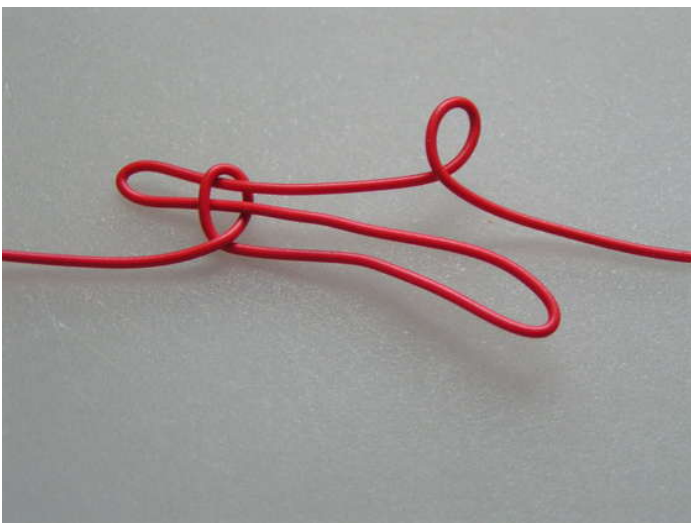


Image Notes
1. Notice how the end of the Z has gone over this part of the line. If the end of the Z goes under this part of the line, the whole knot will fail as soon as you pull on it.



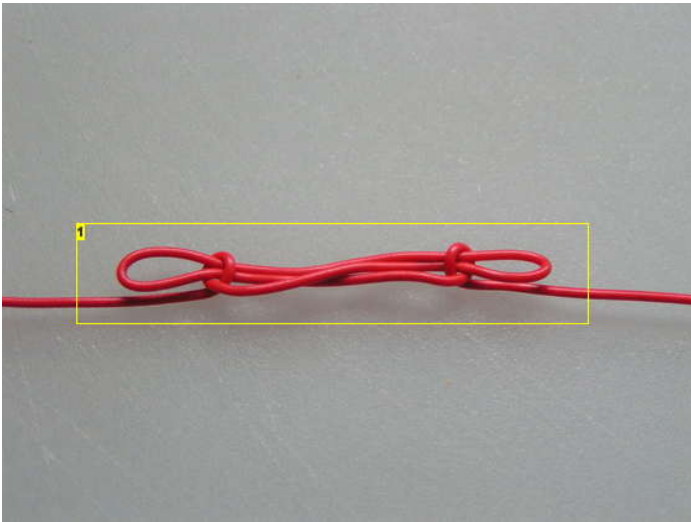


Image Notes

1. The finished Sheep Shank.

step 6: The Bowline

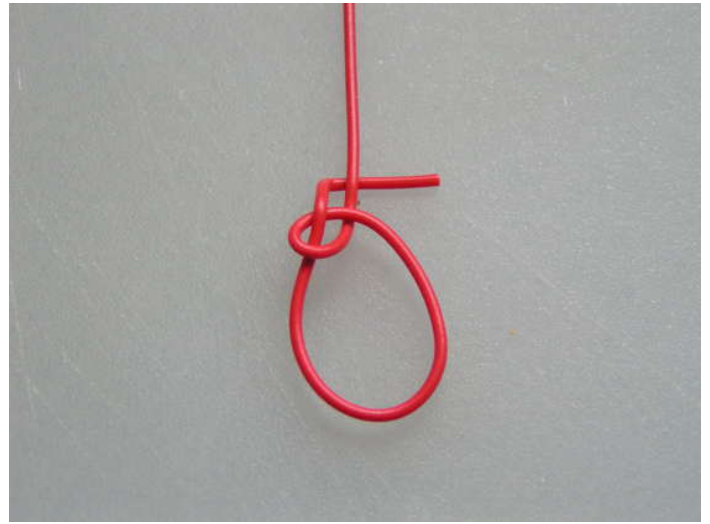
The bowline is a knot for making a usable loop that does not tighten when you pull on it - *this is not a noose*.

Near the end you want the loop, make a small loop by twisting part of the line in your hand.

Thread the end of the line up through the loop, round the back of the line, and back down the small loop.

Look at the photos to check the orientation of the loops - if you go through them from the wrong side, the whole knot will fall apart.





step 7: A Round Turn and Two Half Hitches.

A very useful knot, even though the only people who seem to have heard of it are sailors and Boy Scouts. It can be used to tie a swing to a branch or an oil tanker to it's quay.

The classic knot has only one "round turn", but it can have as many as you need. Greater loads need more turns, but not more hitches, as all they do it lock the knot in place.

With practice, you can tie this knot one-handed, allowing you to hold onto your mule with one hand, while you lash it to a hitching post with the other.

First, loop a "turn" of line around the post. The line should go around the post at least one full turn, but more can be added (if, for instance, you have a particularly poorly-behaved mule).

Pass the loose end over the line, then back through between the loose end and the loaded end.

Pull tight, and repeat the half-hitch in the same direction you tied the first.

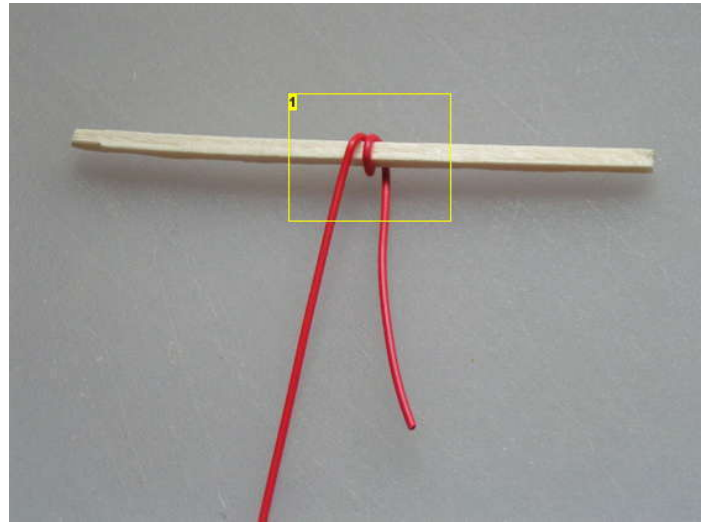
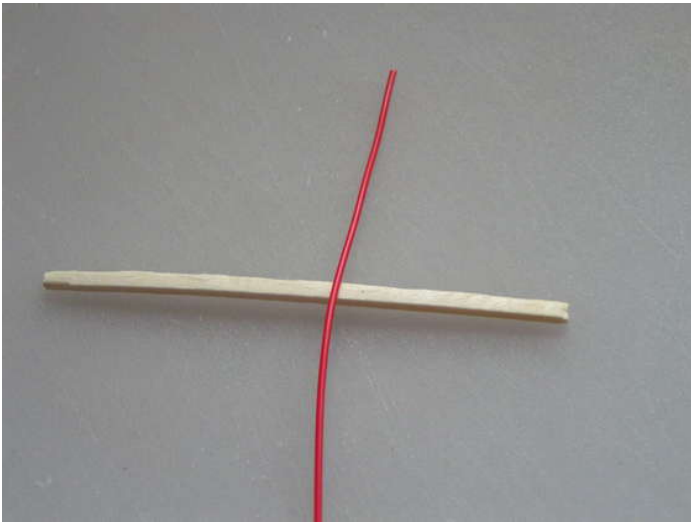


Image Notes
1. The round turn.

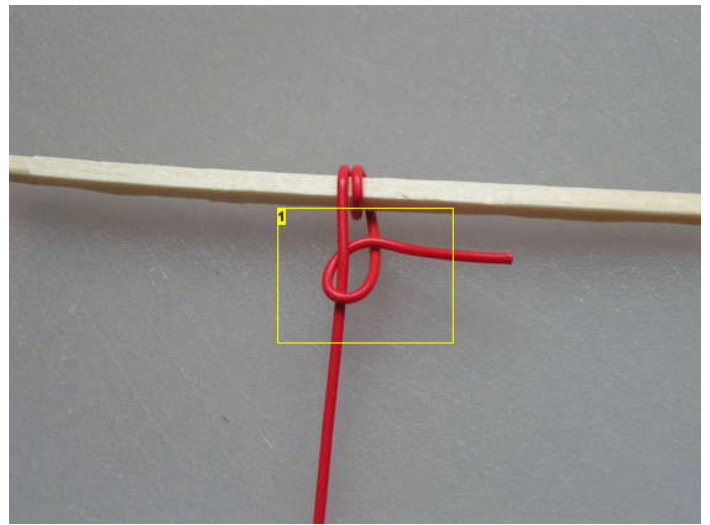
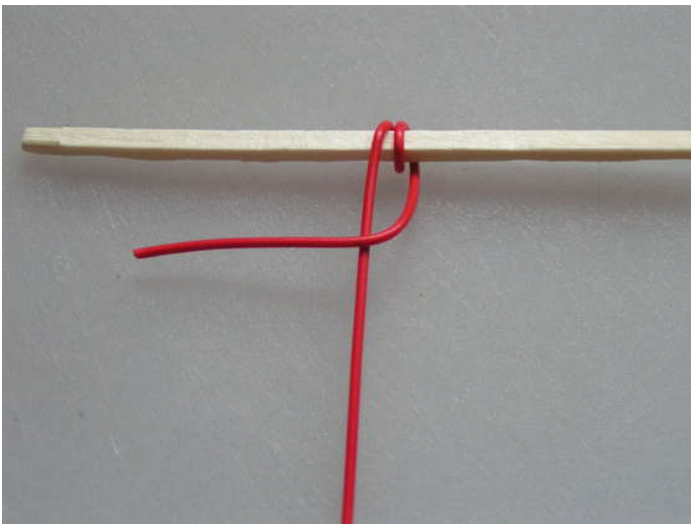


Image Notes
1. First half-hitch complete.

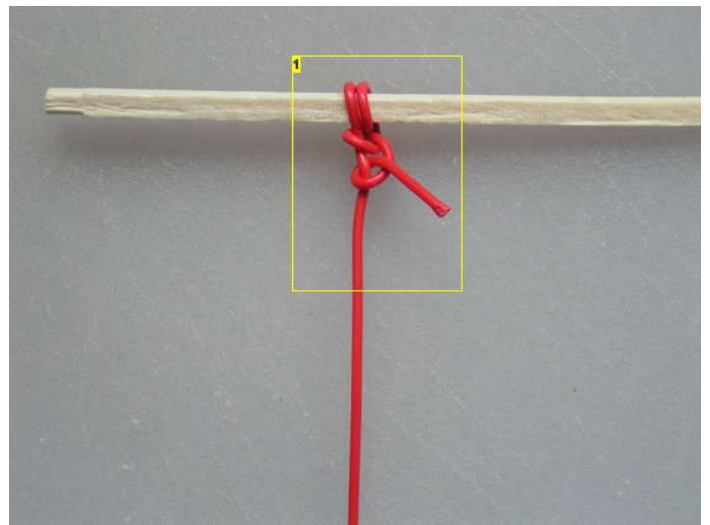
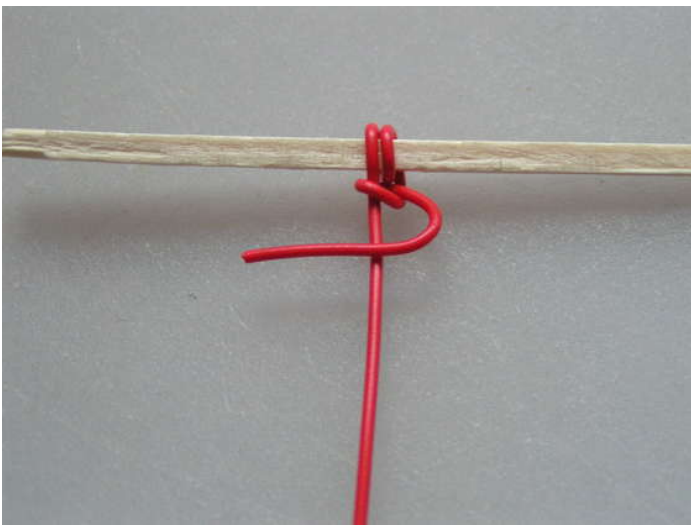


Image Notes
1. The completed round-turn and two half-hitches.

step 8: Lark's Head Hitch

This simple knot is very effective for fastening closed loops together - it's the knot used to fasten rubber bands together - and is useful for tying tape loops when climbing.

Pass one loop ("loop A") through the other ("loop B"), and fold it back towards itself.

Thread the part of loop A that did not go through loop B through the part of loop A that *did* go through loop B, then pull tight.

That takes a lot longer to read than do - it's a lot clearer in the images.

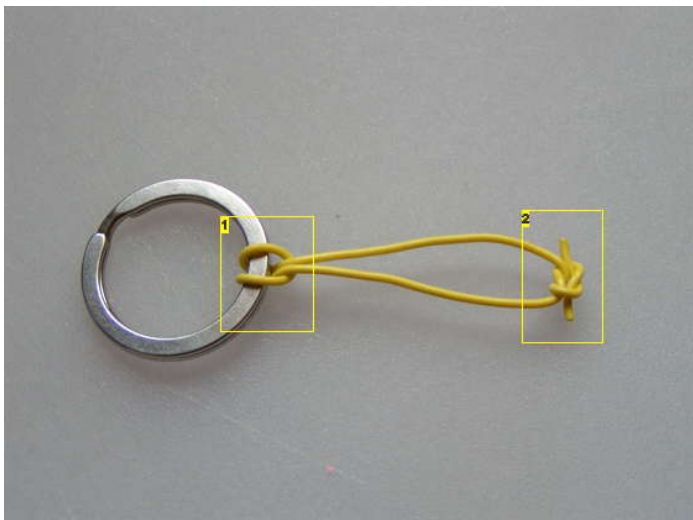


Image Notes

<http://www.instructables.com/id/A-pocket-full-of-knots/>

1. The completed lark's Head Hitch.
2. Oh, look, a reef knot!

step 9: The Constrictor

This knot is quick and easy to tie with a little practice, and incredibly useful - it is used to tie rope ladders with wooden rungs, and sees a lot of action in theatres and music arenas, being able to hold lighting rigs with ease.

Turn a loop in the line, then turn that into a figure-eight shape. Notice that the loop crosses at the middle of the figure-eight on the same side as it crosses the main line.

Turn the figure-eight round until the top loop is on the opposite side of the main line, and the crossing-point of the figure-eight is on top of the main line.

Put your thumb through one loop, your fingers through the other loop, make them meet on the other side and lift.

(If you are tying this in wire, as I am, then the two loops on either side need bent downwards, away from the camera's point of view.)

Pass your pole or beam through both of the loops as the hang, and pull tight.

You should see that the line on both sides of the knot passes under the line from the other side, all held in place by a diagonal loop. This is the constriction which provides the friction to lock the whole knot in place. If the crossing points do not lie on a curved surface, the friction is lost and the knot will "roll" along the line, so this knot is most effective on round poles, staves and branches.

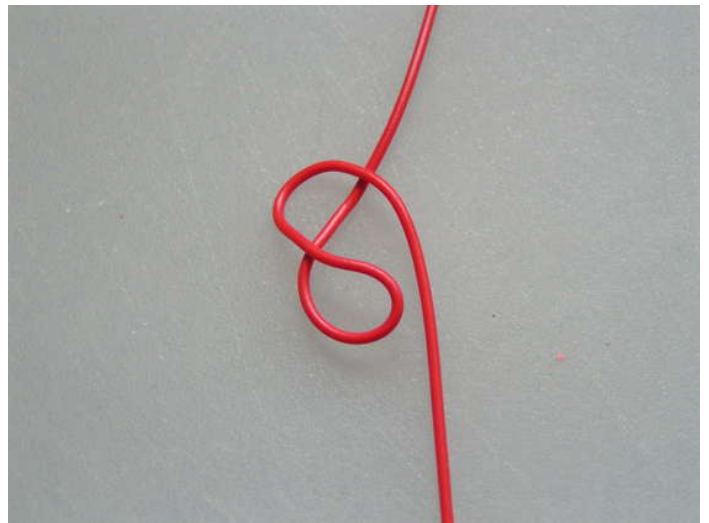
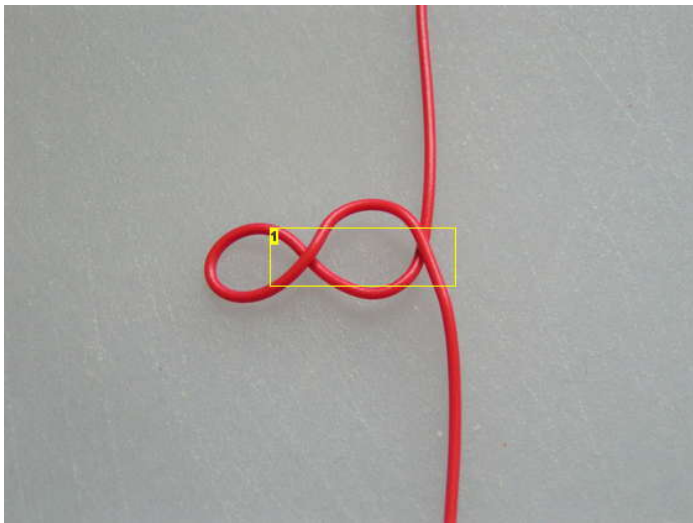
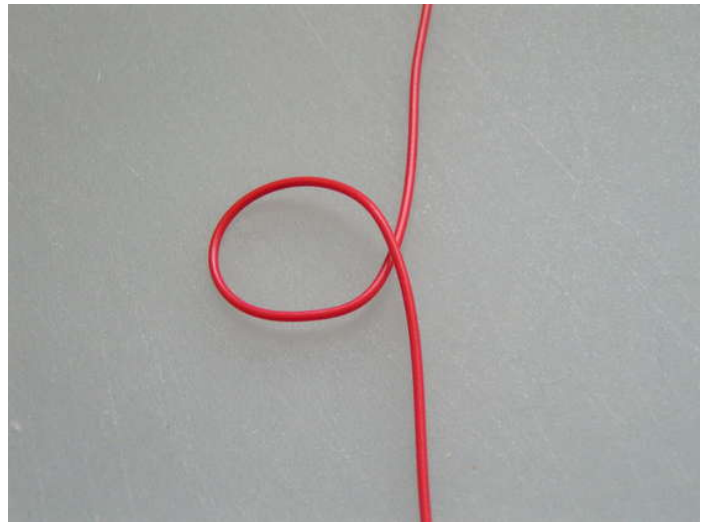
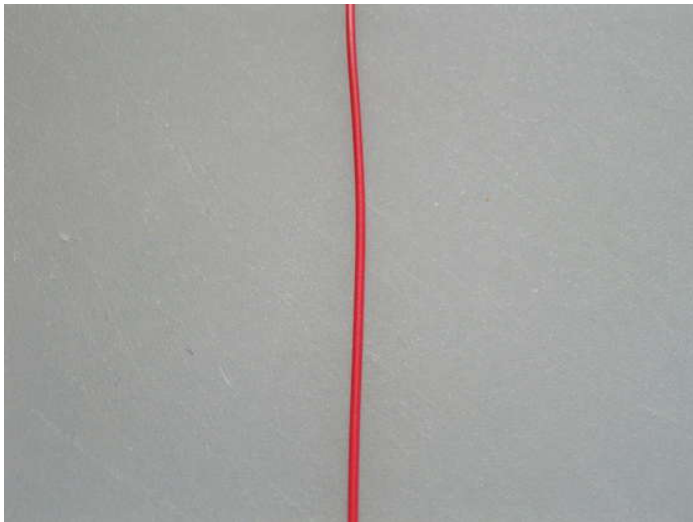


Image Notes

1. Be aware of the way these two points cross.

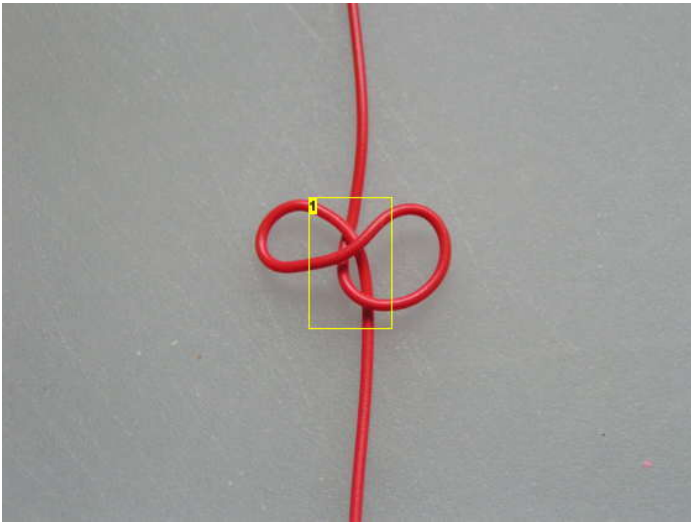
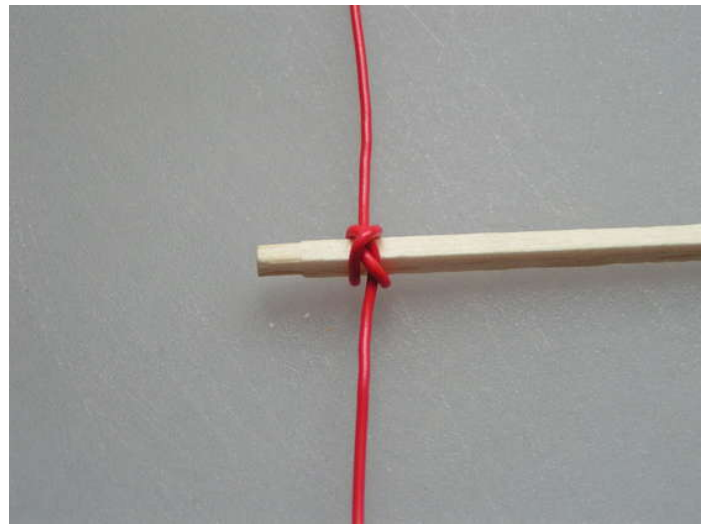
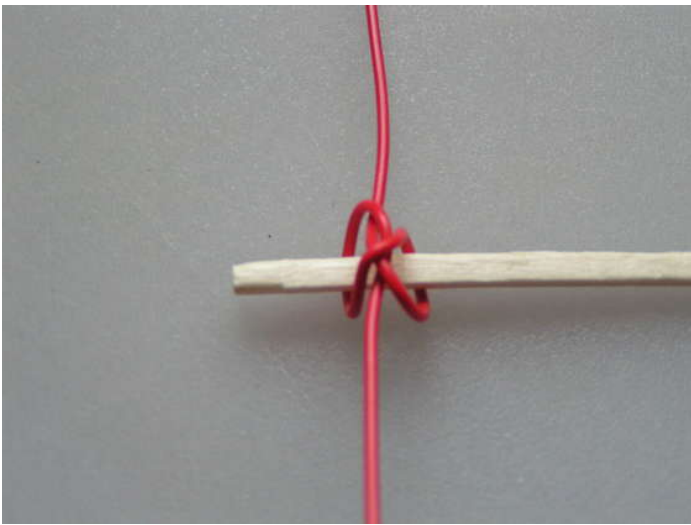


Image Notes

1. If you are tying this in line, pinch and lift this part.



step 10: Laying out the knots.

Cut a piece of card to match the inside of your tin.

Arrange your knots on the card in a way that you find pleasing. If you are tying hitches, tie them around a length of bamboo skewer or a match. I found that an extra-long match for lighting barbecues was exactly the right length when the head was trimmed off.

You may want to combine more than one knot on the same piece of wire, but it is not required. In this example, I have fastened the example of a bowline to the match with a lark's head hitch.

Once you are satisfied with the arrangement, a drop of superglue ("crazy" glue, "CA glue") on the back of the knots will hold them in place without being obviously "there".

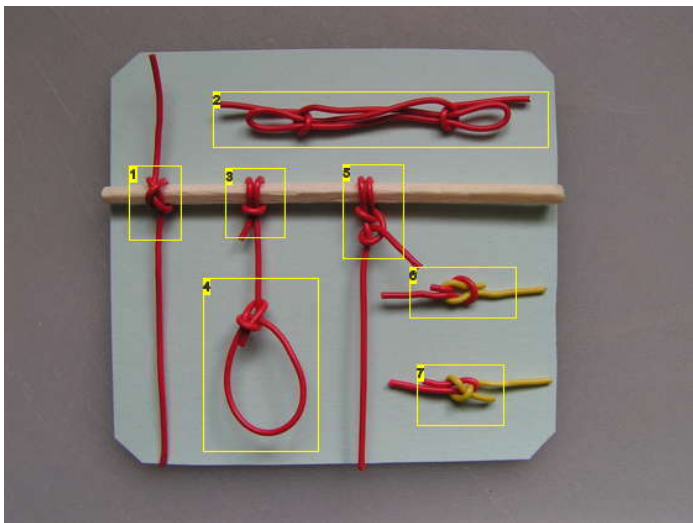


Image Notes

1. Constrictor.
2. Sheepshank.
3. Lark's Head
4. Bowline.
5. Round-Turn and Two Half-Hitches.
6. Reef.
7. Sheet Bend.

step 11: Preparing the tin.

You are not very likely to want your tin to continue to show what it used to hold, especially if that was cigars.

You could sand the tin down to bare metal, or paint over the warnings.

I sprayed my tin British racing Green, and tied a reef knot in a loop of wire which I super-glued to the outside of the tin. I used small drops of glue, but added them every couple of millimetres to stop it getting caught and pulled off as it is pulled in and out of my pocket.

Your knots will need labelled to finish the display.

If your handwriting is good, and your pen finely-tipped, you could label them by hand.

Otherwise, you can print out labels on your PC and glue them beside the knots, or make a key to stick inside the lid of the tin (which would serve the extra function of covering the cigar-related text inside the lid).

Congratulations, you're done. Now go and find a Scoutmaster and demand a badge...

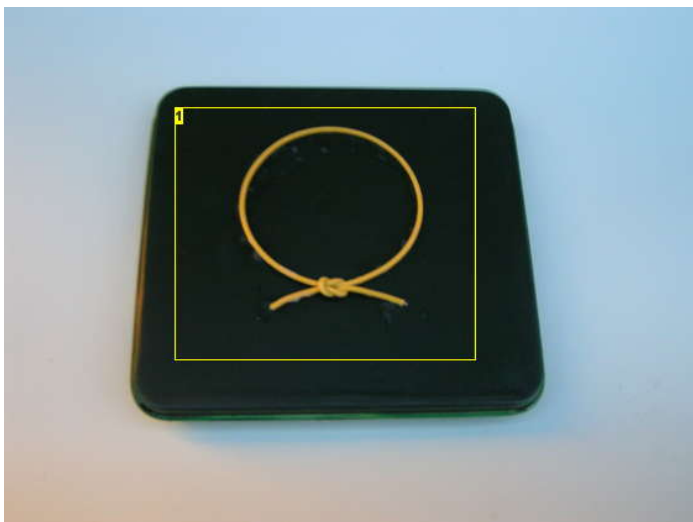
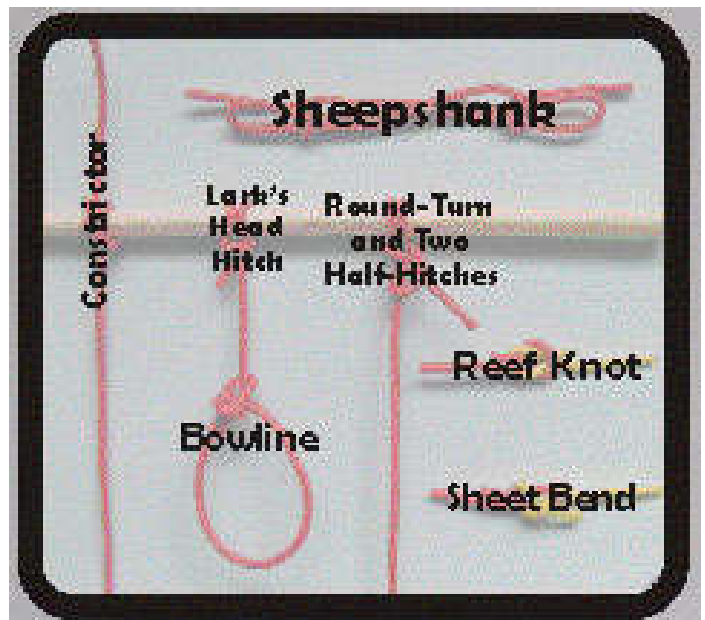


Image Notes

1. Inspired by the border of the Sea Scout logo.





struckbyanarrow says:
this is kinda of cool but you should of mentions altoids tins they rock!!!!!!!!!!!!!!

Aug 29, 2008. 6:15 PM [REPLY](#)



Kiteman says:
Simple reason: I didn't have an Altoids tin (they're not so common in the UK).

Aug 30, 2008. 1:14 AM [REPLY](#)



Adrian monk says:
That's weird, since the curiously strong altoids claim to hail from England!
Hmm, want to buy one from me off ebay? :D

Aug 30, 2008. 7:08 AM [REPLY](#)



Kiteman says:
Oh, they may be English, but they're more often sold in corner shops than supermarkets (for no reason I can see), and then only in the better-stocked shops.
Far more popular are Polos and gum.

Aug 30, 2008. 8:32 AM [REPLY](#)



Adrian monk says:
That's weird. It's exactly the opposite here-supermarkets are lousy with them, but the little stores? Forget it.

Aug 30, 2008. 8:42 AM [REPLY](#)



unpicky says:
great instructable and fantastic pictures! i like the fact that you use different colors of wire

Aug 1, 2008. 2:52 PM [REPLY](#)



Kiteman says:
Thank you. I "pinched" the colours idea from knot books - they usually use different colours of rope for clarity.

Aug 1, 2008. 3:30 PM [REPLY](#)



joejoerowley says:
Nice!! Well Done! Is there a boy scout program in the uk? Is it affiliated with the US scouts? Just wondering, thanks

Mar 15, 2008. 2:40 PM [REPLY](#)



Kiteman says:
Splutter!
The Scouting movement was *invented* here, one hundred and one years ago.

Mar 15, 2008. 3:14 PM [REPLY](#)

As early as 1908 Scouting was starting in many of the British outposts of the Empire. After a trip to South America, Scouting started in Chile, and it was already crossing the channel into Europe. The big step across the Atlantic, and into the United States came more by chance. In 1909, an American business man, William Boyce, was lost in the fog of London, when a small boy approached him, and offered to take him to his hotel. Once there, the boy refused any offer of money for the service, saying that it was his good turn as a Boy Scout. Joyce was intrigued by this and tracked down B-P. before he left London to discover more of this. When he got back to the U.S.A. he went about setting up the Boy Scouts of America. By 1918, its numbers had risen to 300,000, and had reached the million mark before the end of the twenties.



Southpaw_Jim says:
Brought up a lot of memories reading that. I had forgot William Boyce's name, but I remembered Lord Baden Powel. Almost 20 years since i learned all of that. I still remember the scout laws, the oath, and of course the motto. I received my Eagle in 1993.
Now i am wondering if all the focus on being Politically correct, has caused them to change any of the wording around.
Also this makes me wonder, does the European scouts have the same scout Laws? What is the wording difference in their scout Oath?
Sorry, thinking out loud, and a little off subject.

Apr 7, 2008. 10:10 AM [REPLY](#)



Kiteman says:
BP's original oath:
On my honour I promise that---
1. *I will do my duty to God and the Queen.*
2. *I will do my best to help others, whatever it costs me.*
3. *I know the scout law, and will obey it.*

Apr 7, 2008. 10:26 AM [REPLY](#)

Current UK version:

*On my honour, I promise that I will do my best,
To do my duty to God and to the Queen,
To help other people,
And to keep the Scout Law.*

Current US version:

*On my honor, I will do my best
To do my duty To God and my country
And to obey the Scout Law;
To help other people at all times;
To keep myself physically strong, mentally awake, and morally straight.*

BP's original laws:

1. A SCOUT'S HONOUR IS TO BE TRUSTED.
2. A SCOUT IS LOYAL
3. A SCOUT'S DUTY IS TO BE USEFUL AND TO HELP OTHERS.
4. A SCOUT IS A FRIEND TO ALL, AND A BROTHER TO EVERY OTHER SCOUT, NO MATTER TO WHAT SOCIAL CLASS THE OTHER BELONGS.
5. A SCOUT IS COURTEOUS
6. A SCOUT IS A FRIEND TO ANIMALS.
7. A SCOUT OBEYS ORDERS
8. A SCOUT SMILES AND WHISTLES
9. A SCOUT IS THRIFTY

Current UK Scout Law:

1. A Scout is to be trusted.
2. A Scout is loyal.
3. A Scout is friendly and considerate.
4. A Scout belongs to the worldwide family of Scouts.
5. A Scout has courage in all difficulties.
6. A Scout makes good use of time and is careful of possessions and property.
7. A Scout has self-respect and respect for others.

Current US Scout Law:

A Scout is:

1. trustworthy,
2. loyal,
3. helpful,
4. friendly,
5. courteous,
6. kind,
7. obedient,
8. cheerful,
9. thrifty,
10. brave,
11. clean, and
12. reverent.

The wordings may vary, but the meanings are the same.



unpicky says:
i hope you're giving credit where credit is due

Aug 1, 2008. 2:51 PM [REPLY](#)



Kiteman says:
Huh? For what?

Aug 1, 2008. 3:29 PM [REPLY](#)



Southpaw_Jim says:
Thank you, and it is good to see the US one hasn't changed since i learned it.
Jim

Apr 7, 2008. 8:10 PM [REPLY](#)



Ribs says:
What you've said there is all mostly correct but you've left out some important details. Scouts was started by Robert Baden-Powel (later to be lord baden powel) Who was in the British army during the Boer war or South African war. During the..... Anglo-boer war the siege of Mafikeng (a town in the north-west province) took place. Baden powel and his british troops where trapped in the town for something around 200 days. During that time BP started using young boys as messengers and for various other tasks because there not enough men to do them and he soon realized how much it benefited the boys and how much they enjoyed it. When BP returned to England he wrote a book called scouting for boys. the reception of this book was quite overwhelming and in a few months there where small scout groups all over England. BP saw this and decided to start a formal scout movement which started with the experimental camp for scouts and guides on brownsea island. The cub movement started quite a bit later when BP realized that the scouting idea may work for younger boys too.

Apr 6, 2008. 2:33 AM [REPLY](#)

So it is not south America but south Africa where scouting actual started. But it is true that scouting did get taken to america by William boyce.



Kiteman says:

Apr 6, 2008. 4:11 AM [REPLY](#)

You didn't read the extract (which is from the Scouting organisation's own history site) properly - after BP took a trip to South America, *South American* scouting started in Chile.

The text was not a response to "how did scouting start?", but to "how did scouting start *in the USA*?"

Click the link and read the whole thing.

The book, by the way, was originally published as a part-work, and it was after only the first 2 or 3 chapters had been published that boys started forming groups. When he discovered this fact, BP altered the focus of later chapters from *scouting skills* to *scouting philosophies* (self-discipline and citizenship, for instance).

(Actually you've just inspired me to dig out my 1963 edition of *Scouting for Boys* and re-read it.)



Johenix says:

Mar 22, 2008. 9:36 PM [REPLY](#)

There is some evidence that William Boyce (or was it Joyce?) had heard of the Boy Scouts before the lost in the fog incident and had planned to meet Lord Baden-Powell for some time.

Like the Salvation Army, the Boy Scout/ Girl Scout movement started in the United Kingdom.

We need more Boy Scouts on Wall Street.



dchall8 says:

Mar 16, 2008. 8:19 AM [REPLY](#)

Pretty funny! Every good scout should know where the scouts originated.



joejoerowley says:

Mar 15, 2008. 5:46 PM [REPLY](#)

Oh! My bad, I didn't know that. Very Interested!! Are you a scout master ?



Kiteman says:

Mar 15, 2008. 6:06 PM [REPLY](#)

Cub Leader - my pack name is *Mang - the bat who brings the night*.



joejoerowley says:

Mar 15, 2008. 6:15 PM [REPLY](#)

Cool! So are cubs the younger group?



Kiteman says:

Mar 16, 2008. 3:55 AM [REPLY](#)

Nearly - there are now *Beavers* as well (age 6-8), then *Cubs* (8-10.5), *Scouts* (10.5 - 14), *Explorers* (14-18), then *Network* up to about 25.

<http://www.scouts.org.uk/>
<http://www.scoutbase.org.uk/>



joejoerowley says:

Mar 16, 2008. 11:02 AM [REPLY](#)

Cool, I am not a scout. In america they won't let anyone with parents that are homosexual join and my parents don't believe thats cool so they won't let me join. (There not gay btw)



Kiteman says:

Mar 23, 2008. 1:48 AM [REPLY](#)

??!??

As far as I'm aware, that is not the case. Such discrimination may, in fact, be illegal over here.



joejoerowley says:

Mar 23, 2008. 8:24 AM [REPLY](#)

Opps, my bad got my facts wrong. It is against scout leader/masters and scouts them selves but most gay parents wouldn't let there kids join. Here is an article on someone experience w/ this problem.



Kiteman says:

Mar 25, 2008. 3:35 PM [REPLY](#)

Good grief. That's appalling.

Over here, all leaders and most parents have a "CRB" check - that is, their criminal background is examined to check suitability for access to children.

Sexual offences can restrict access to minors, financial irregularities can restrict access to group funds etc.

None of the questions in the check refer to the applicant's sexuality.

I am pretty sure, in fact, that discrimination like that you linked to is in contravention of the *European Convention of Human Rights*, and the *International declaration of Human Rights* as well.

"Land of the free"?



joejoerowley says:

No Joke about the "land of the free". That saying has lost all of its meaning it should be "Land of the free, if you are Caucasian and heterosexual"

Mar 25, 2008. 3:55 PM [REPLY](#)



chardster says:

No, it should be, "Land of the free, if you are caucasian and heterosexual, with a penis..."

Jul 27, 2008. 5:16 PM [REPLY](#)



w00ty32 says:

Sad, america is. Why can't they be like the military..... "dont ask, don't tell".

Mar 26, 2008. 7:38 PM [REPLY](#)



joejoerowley says:

That reminds me of a great onion video. :)

Mar 26, 2008. 8:23 PM [REPLY](#)



Khaos11 says:

+1

NICE

Mar 21, 2008. 4:58 PM [REPLY](#)



Kiteman says:

+1?

Could I scrounge a click on the Vote button as well?

Mar 22, 2008. 4:50 AM [REPLY](#)



Khaos11 says:

that's what i meant

Mar 31, 2008. 8:25 AM [REPLY](#)



Kiteman says:

Cool, thank you.

Mar 31, 2008. 1:38 PM [REPLY](#)



rhondalicious says:

This is FANTASTIC! I'm a Cub Scout leader, and I totally need to do something like this with my boys - the last group I did knots with, they struggled with some tricky bits while tying - I'm betting that using wire will make it much easier, since it won't slide around on them as they are trying to figure things out.

Now I just need to think of a box - I don't think anyone I know smokes cigars...

Mar 27, 2008. 7:25 PM [REPLY](#)



Kiteman says:

It doesn't have to be a cigar box - you could glue a lot of matchbox trays side-by-side and put a knot in each box.

Mar 28, 2008. 7:21 AM [REPLY](#)



rhondalicious says:

Hmm, that could work too - I'm even thinking an Altoids tin might work, since I think my boys only need to learn small sized knots - depends on how dexterous their fingers are!

Mar 28, 2008. 11:30 AM [REPLY](#)



Kiteman says:

Oh, and any chance of a vote?

Mar 28, 2008. 7:22 AM [REPLY](#)



rhondalicious says:

Ooh, sure! I didn't even notice the big vote button at the top until you mentioned it!

Mar 28, 2008. 11:26 AM [REPLY](#)



lawizeg says:

Nice one, yet again, kiteman! I love your instructables!

Mar 27, 2008. 11:45 AM [REPLY](#)



DGerman says:

Use of 2 colors is great. +1

I have a bag of 3' soft white nylon 1/2" ropes with 1/2 of the length painted black. Useful for bowline too.
"Pedro knows"

Mar 22, 2008. 5:57 PM [REPLY](#)



craz meanman says:

great ible! you got me with that witty advertisement of yours lol. i believe that it was appropriate an thus you get my vote. but... "You could consider this to be eight Instructables in one, since will also learn how to tie seven different knots." doesn't make much sense. why would there be 8 ibles for 7 knots?

Mar 21, 2008. 4:48 PM [REPLY](#)



Kiteman says:

One for the actual tin as well.

7 knots + 1 display idea = 8 'ibles. Best value in the whole contest, never mind the quality, feel the width...

Mar 22, 2008. 4:49 AM [REPLY](#)



craz meanman says:

lol. you sound like a salesperson. don't worry i voted for you (i think). like one of those salespeople who are really proud of their stuff... maybe with out enough justification too... lol

Mar 22, 2008. 8:17 AM [REPLY](#)



nerdnurture says:

Cool! This is small enough to actually bring it with you to a place where a person might need it!

Mar 20, 2008. 4:08 PM [REPLY](#)



technick29 says:

+1 because I wanted to learn how to do more knots. :D

Mar 20, 2008. 1:04 PM [REPLY](#)



Kiteman says:

Any chance of a vote as well?

Mar 20, 2008. 1:19 PM [REPLY](#)



technick29 says:

Already done my friend. I know how it feels to be in a competition.. ;)

Mar 20, 2008. 2:31 PM [REPLY](#)

[view all 81 comments](#)