

# Lashings

By

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# Objectives

- To explain how to tie lashings and the knots needed to tie them.
- To explain the uses for the various lashings and trestles they make.
- To explain how these trestles can make useful objects or structures with line and spars or poles.

# Knots used in lashings

- Clove Hitch
- Timber Hitch
- Square Knot
- Marline Hitch
- Wraps and Fraps

# Lashings we will cover in this program.

Lashings we will cover:

Square Lashing – used to lash two spars together where they will be used perpendicular to each other.

Diagonal Lashing – used to lash two spars together where they will be used at angles other than 90 degrees to each other.

Round Lashing – used to lash two spars that are parallel to each other.

Shear Lashing – used to lash two spars together that will be used to make an A Trestle.

Tripod Lashing – used to lash three spars together to make a tripod.

Danish Square Lashing - may be used instead of many of the above lashings.

Floor Lashing – used to tie a floor or table top to a frame.



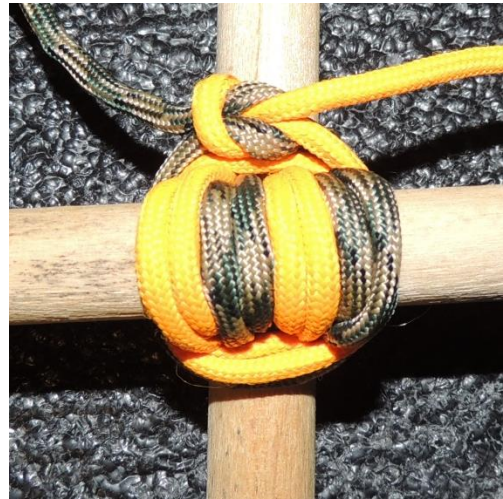
# Photos of Lashings



Square Lashing



Diagonal Lashing



Danish Square Lashing / Japanese Square Lashing Mk. II





# Floor Lashing



# Lashings we will cover in this program.

Continued

A Trestle – tied to make structures with lashings and spars.

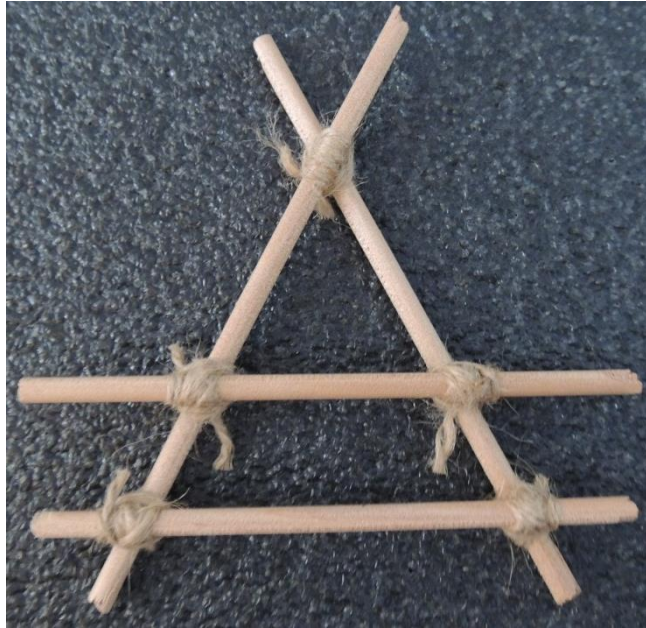
H Trestle – tied to make structures with lashings and spars.

X Trestle – tied to make structures with lashings and spars.

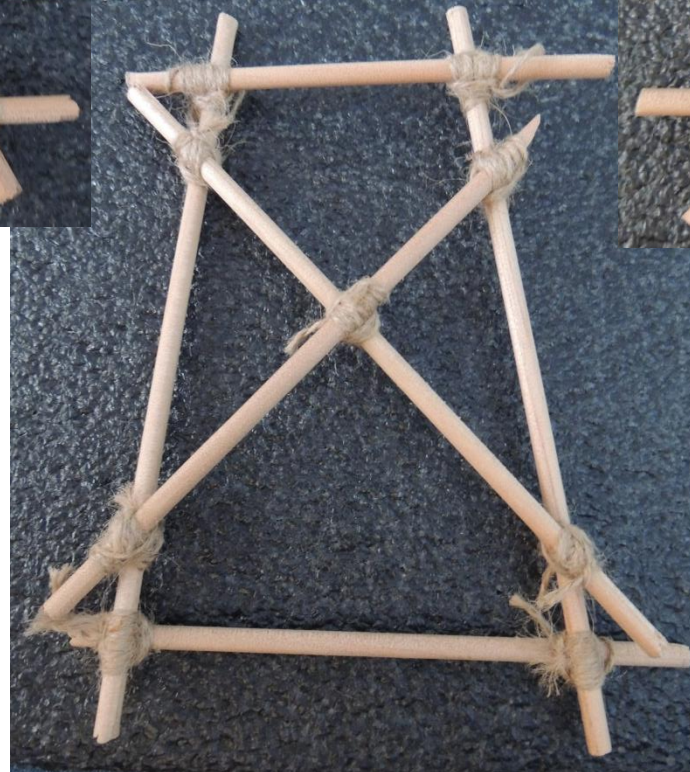
Some simple projects that can be made using these lashings.



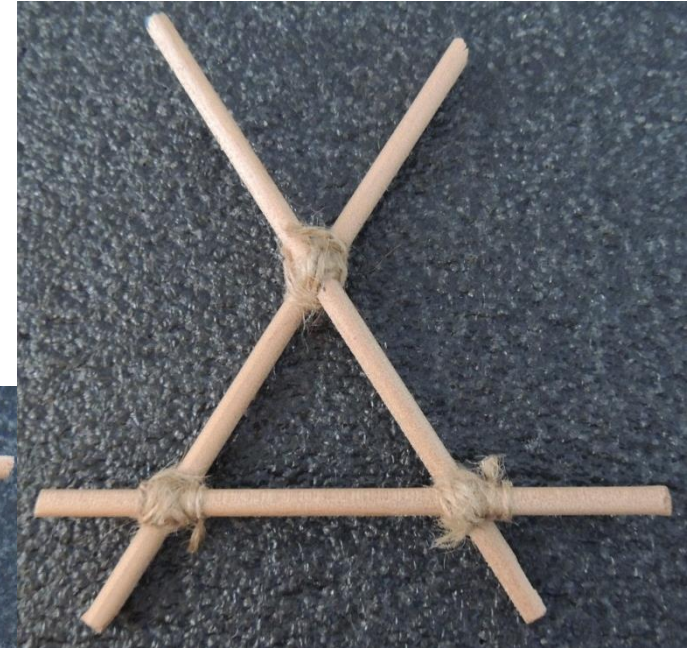
# Photos of Trestles



A Trestle



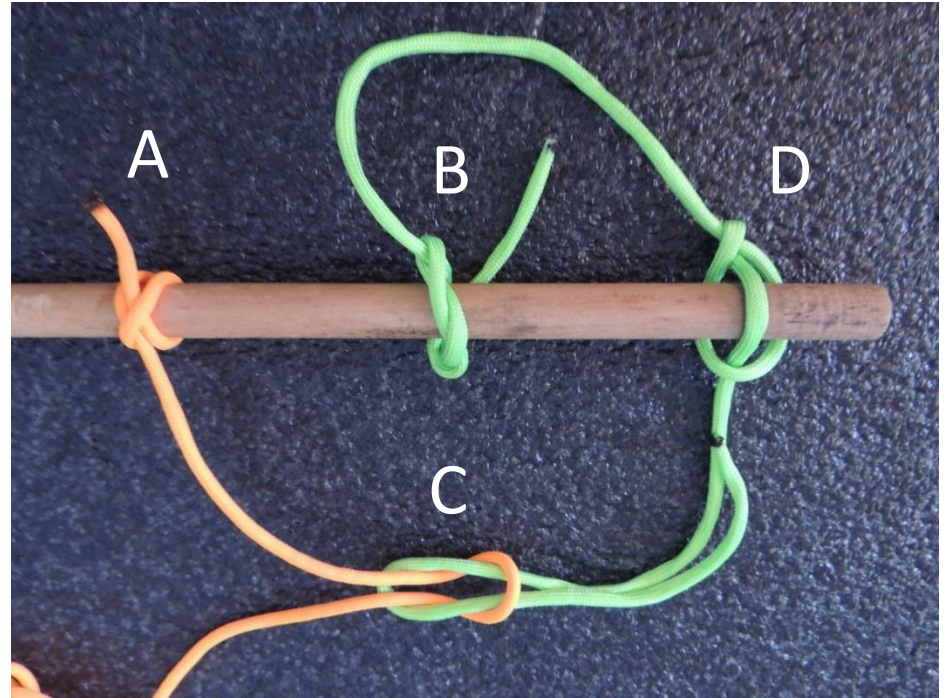
H Trestle



X Trestle

# Knots Needed For Lashings

- A. The Clove Hitch
- B. Timber Hitch
- C. Square Knot
- D. The Marline Hitch

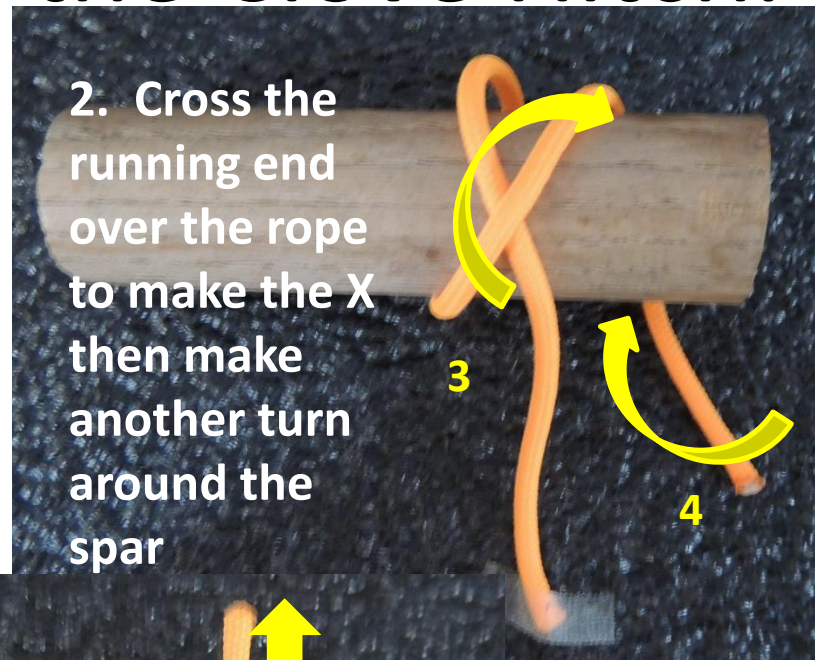
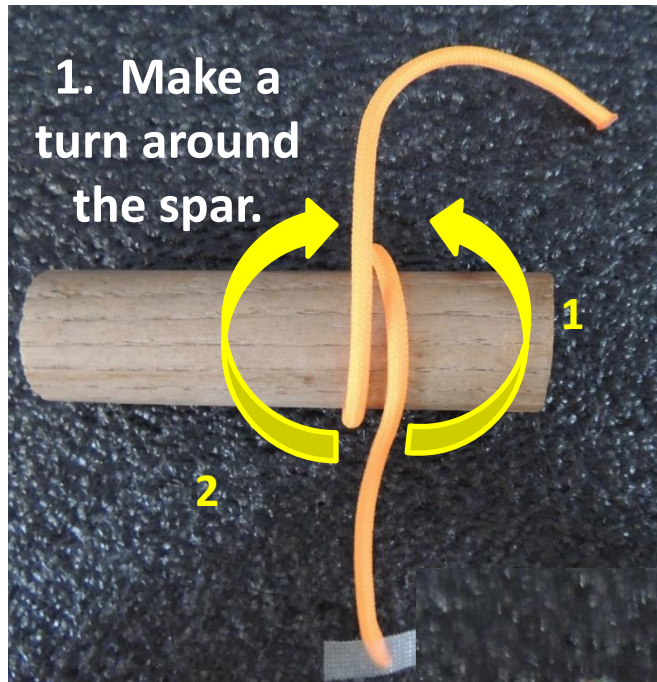


# Clove Hitch

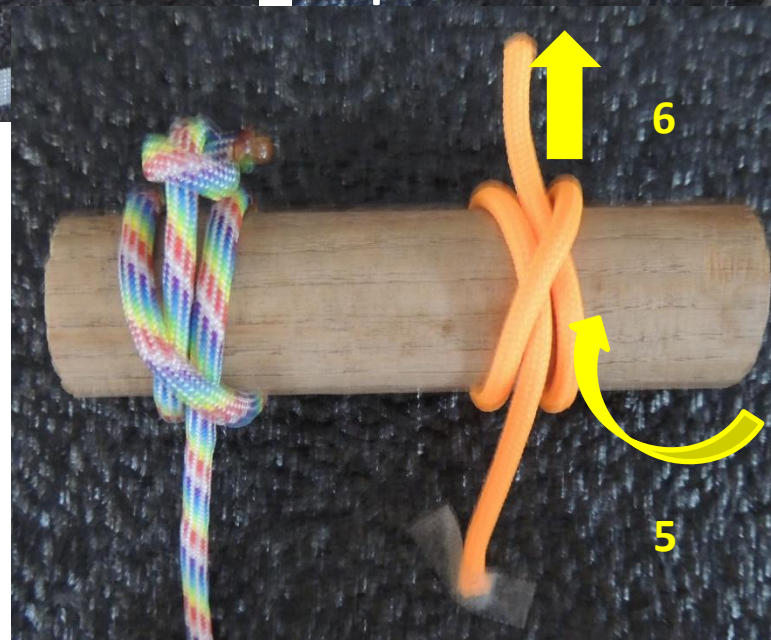
- Is used to join a rope to a spar or post.
- Take the running end of the line around the spar or post make a turn around the post.
- Take the running end across the first turn making an X.
- Continue around the spar of post again.
- Take the running end under the X and parallel to the original line.
- If the rope will be under tension from changing directions tie a stopper knot such as an Overhand Knot or Figure 8 Knot in the end of the rope.
- In lashings we use the Clove Hitch to start and finish most lashings.



# Illustrations of the Clove Hitch.



4. Tie a stopper knot to secure the hitch.



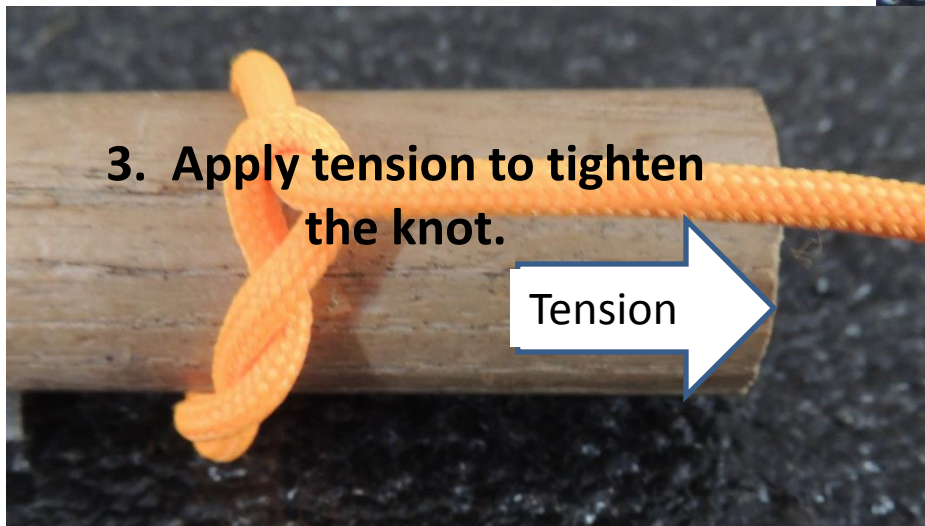
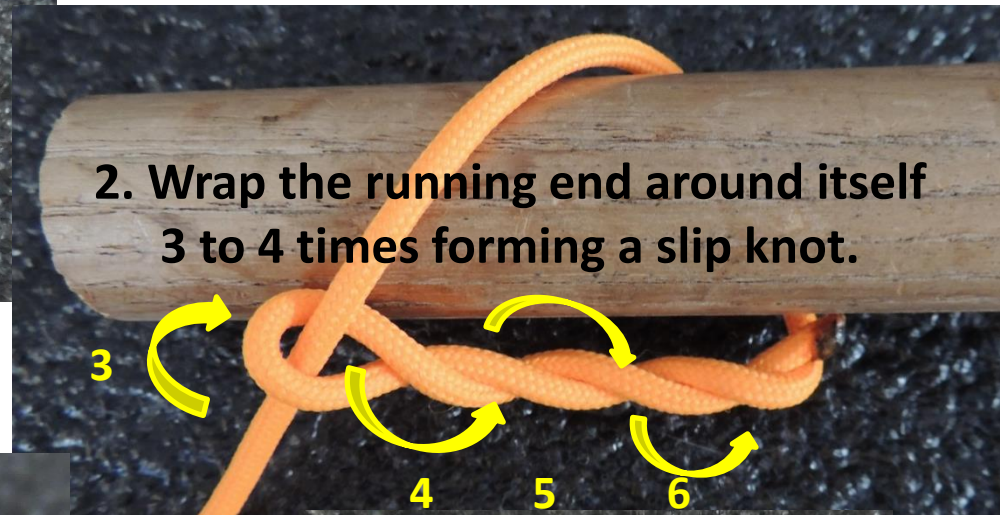
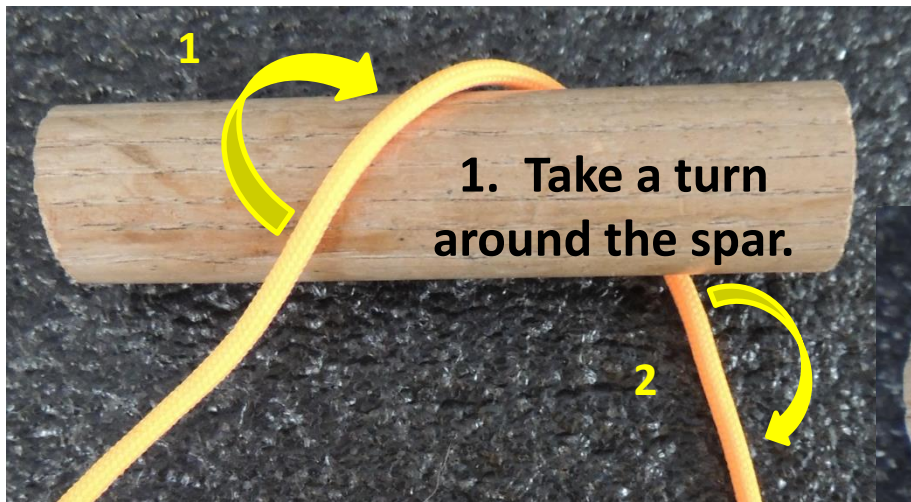
3. Take the running end under the X parallel to the standing part of the rope.



# Timber Hitch

- Used to secure a rope to a tree or spar that needs to be pulled along. It is easy to tie and untie around the log.
- To make this easier to tie we will tie it around a spar.
- Make a turn around the spar with the running end.
- Take the running end around the standing part of the line and wrap it around itself (the running end) at least 3 to 4 times. This makes a slip knot around the spar.
- Pull the standing part of the rope to tighten the loop.
- If you are pulling a long log over a distance where you will change directions adding a Half Hitch above the Timber Hitch will allow you to pull the log easier. The new hitch is called a Killick Hitch.
- In lashings we use the Timber Hitch to start a Diagonal Lashing

# Illustrations of the Timber Hitch.



# Square Knot

- Properly tied will join 2 ropes of equal size that can easily be untied.
- Tied by remembering either:
  - Right over left, left over right
  - What's on top stays on top.
  - It is basically 2 overhand knots tied on top of each other.

Take the running ends of two ropes and wrap one around the other one. Then wrap that one around the other rope again going the other way.

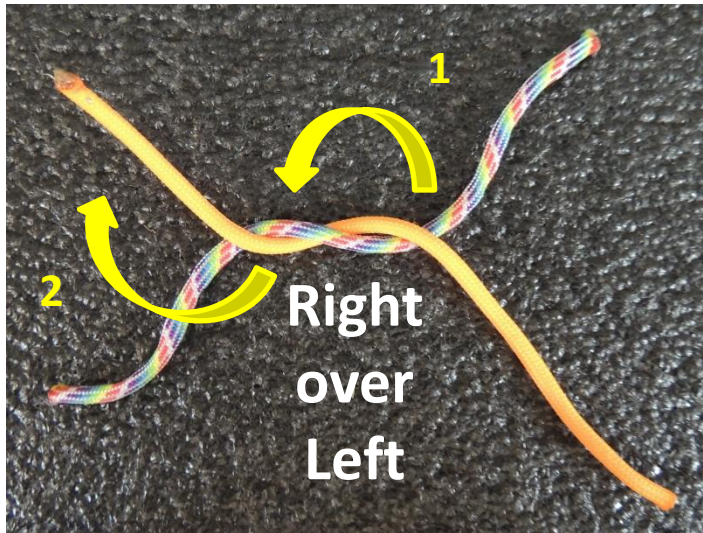
To untie the knot quickly, take one end and pull sharply across itself to loosen the top overhand knot. Repeat this if the lower overhand knot is also tight.

Not properly tied forms a Granny Knot that will not hold.

The Square Knot is used in lashing to finish the Danish Square Lashing



# Illustrations of the Square Knot.



**Square Knot**

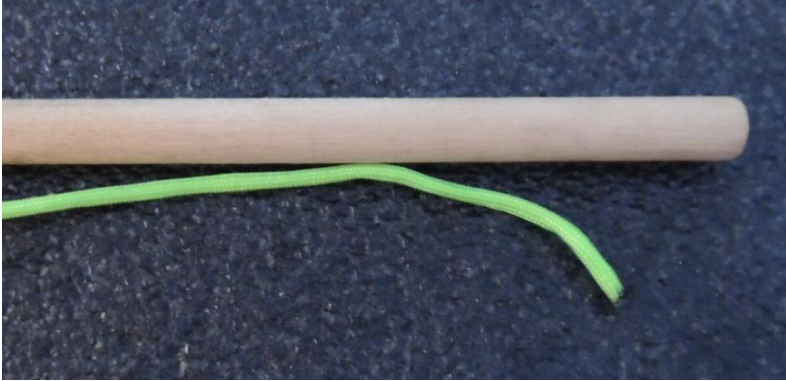


**Granny Knot**

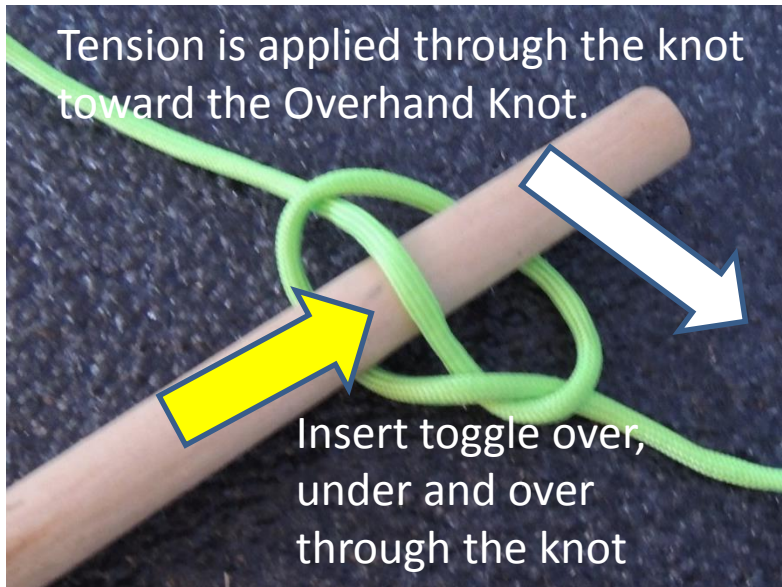
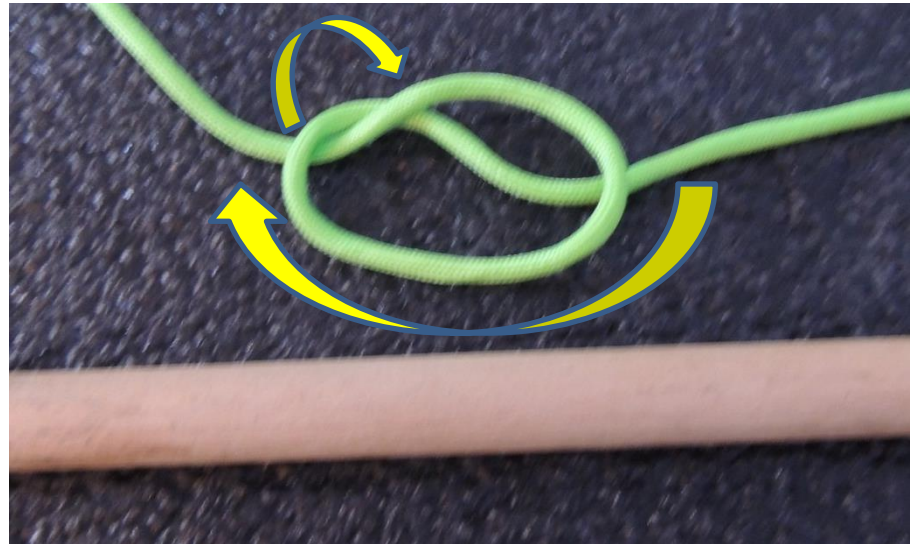
# Marlinspike Hitch

- The Marlinspike Hitch is used to provide additional force when tensioning the fraps on a lashing.
- It is also useful in creating a ladder using a rope and spars or poles.

# Illustrations of the Marlinspike Hitch



Make an overhand loop and draw the running line through the middle.

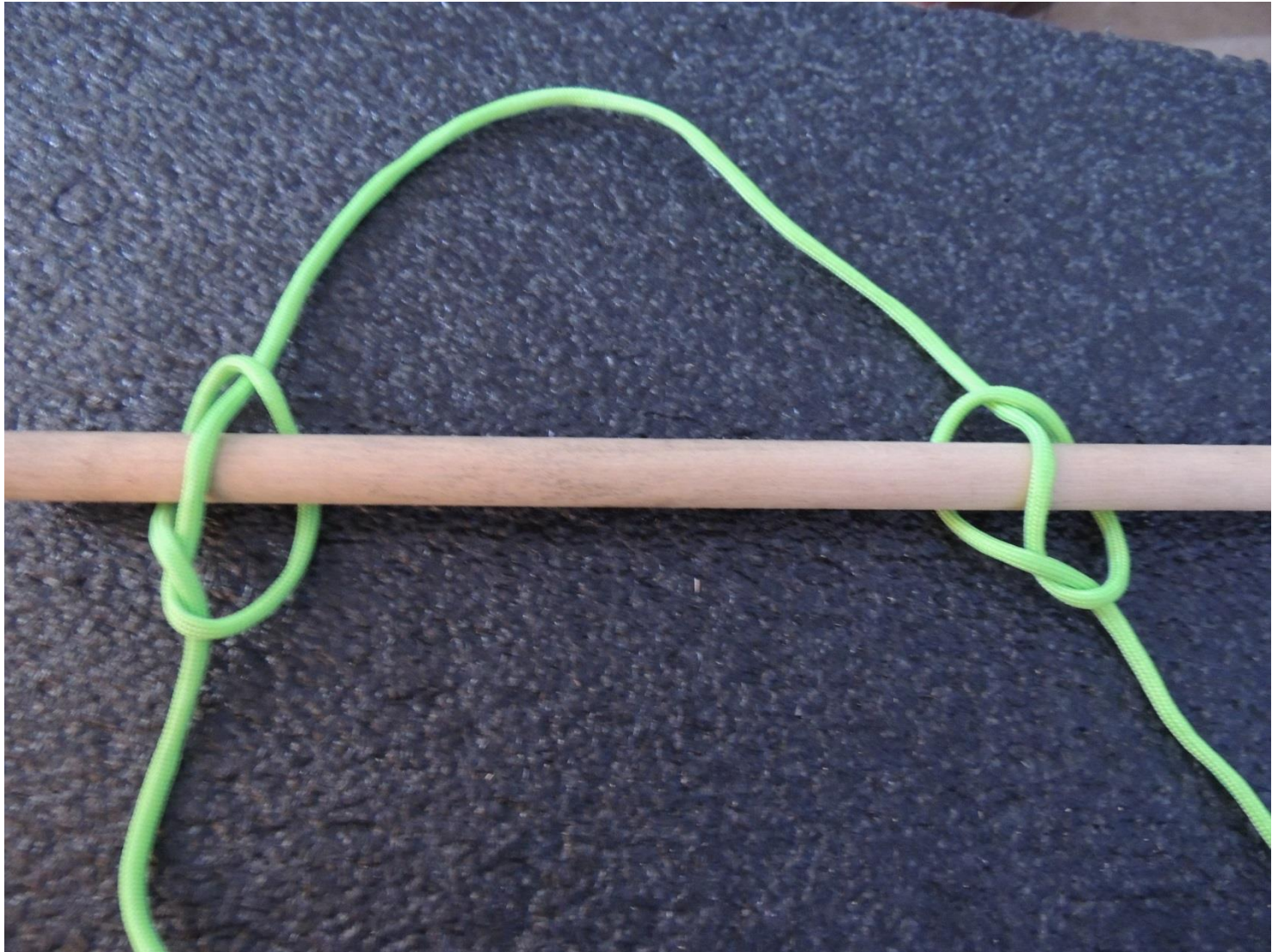


Tension is applied through the knot toward the Overhand Knot.

Insert toggle over, under and over through the knot



# Marlinspike Hitch used as a ladder.



# Wraps and Fraps

- Wraps indicates wrapping the rope around the spars or poles. Normally we wrap 3 to 4 times except in the round lashing.
- Fraps indicated where a rope is wrapped around the wraps of a lashing to tension the lashing. Normally we frap 3 to 4 times before securing the rope with a Clove Hitch or a Square Knot. Pulling the fraps tight with a Marlinspike Hitch increases the tension and tightness of the lashing.



# Illustrations of Wraps and Fraps.

Wraps -



Fraps -



Square Lashing



Diagonal Lashing

# Lashings

Square Lashing – used to lash two spars together where they will be used perpendicular to each other.

Diagonal Lashing – used to lash two spars together where they will be used at angles other than 90 degrees to each other.

Round Lashing – used to lash two spars that are parallel to each other.

Shear Lashing – used to lash two spars together that will be used to make an A Trestle.

Tripod Lashing – used to lash three spars together to make a tripod.

Danish Square Lashing - may be used instead of many of the above lashings.

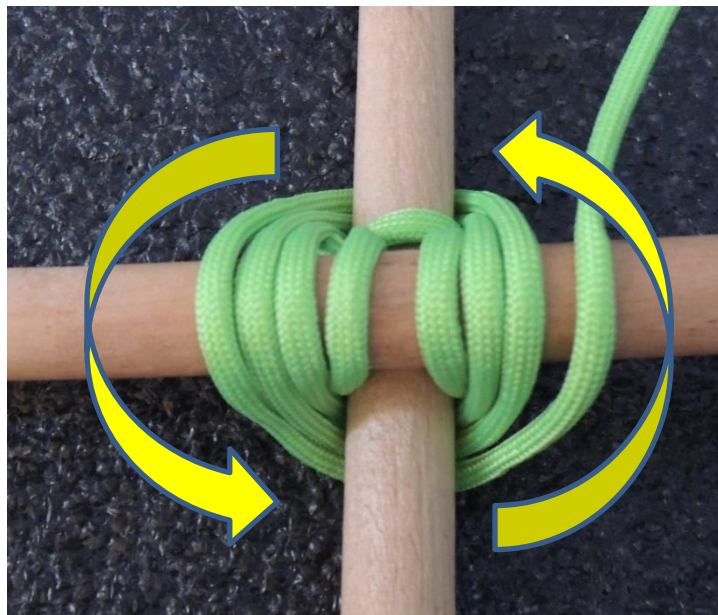
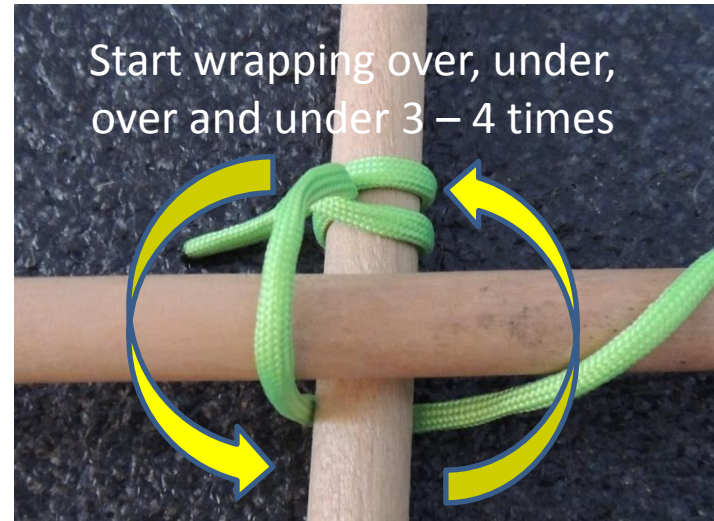
# Square Lashing

- Square Lashing – used to lash two spars together where they will be used perpendicular to each other.

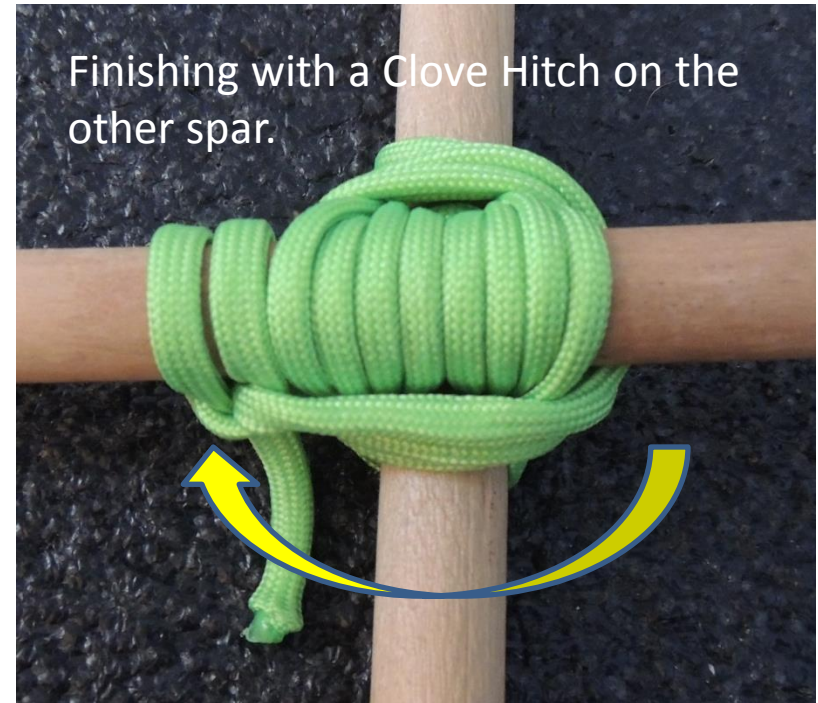
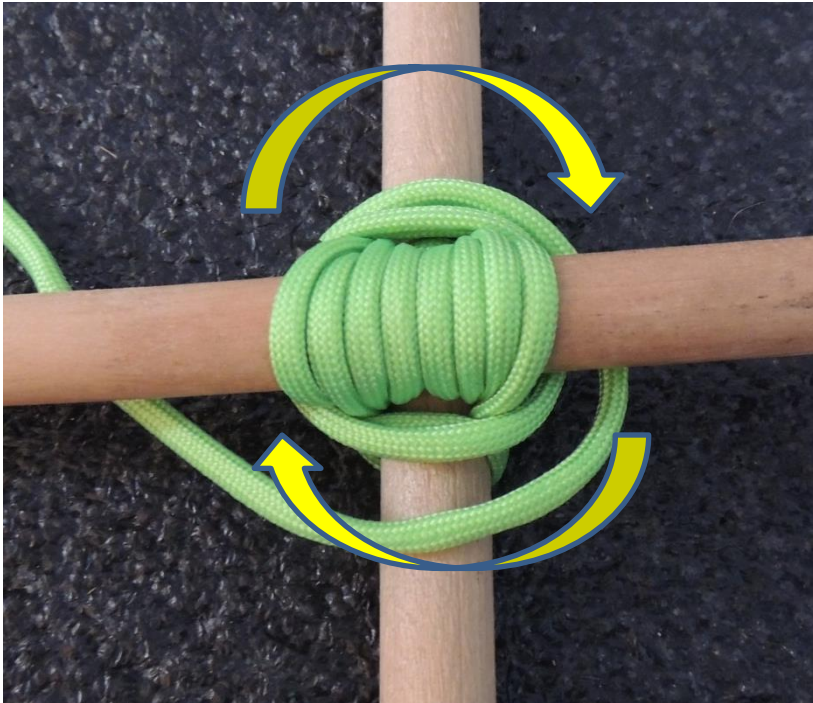




# Illustrations of a Square Lashing



# Square Lashings Continued



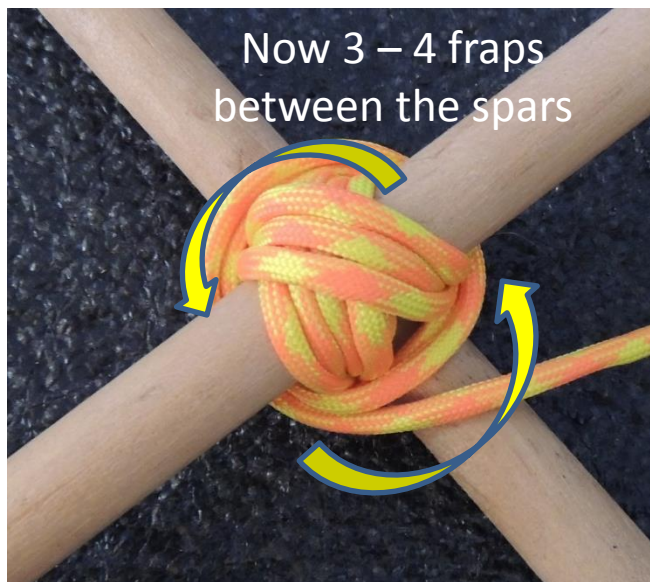


# Diagonal Lashing

- Diagonal Lashing – used to lash two spars together where they will be used at angles other than 90 degrees to each other.



# Illustrations of a Diagonal Lashing



# Round Lashing

- Round Lashing – used to lash two spars that are parallel to each other. You would normally tie 2 round lashings to secure the poles better.





# Illustrations of a Round Lashing



# Shear Lashing

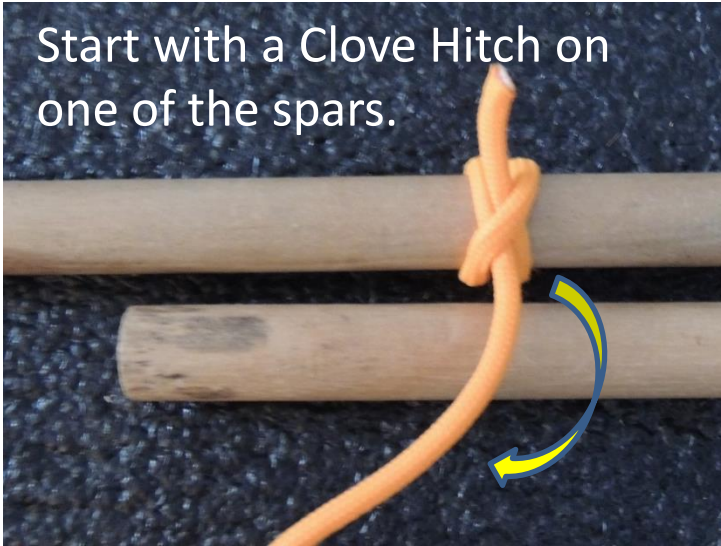
- Shear Lashing – used to lash two spars together that will be used to make an A Trestle or a longer pole using 2 Shear Lashings.



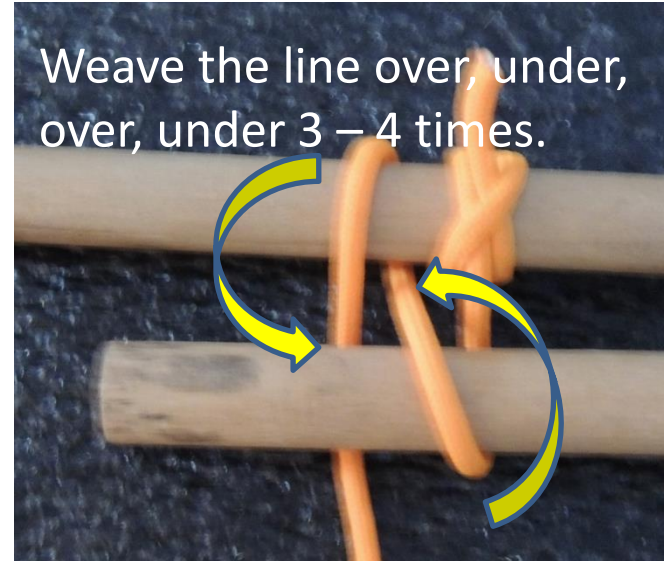


# Illustrations of a Shear Lashing

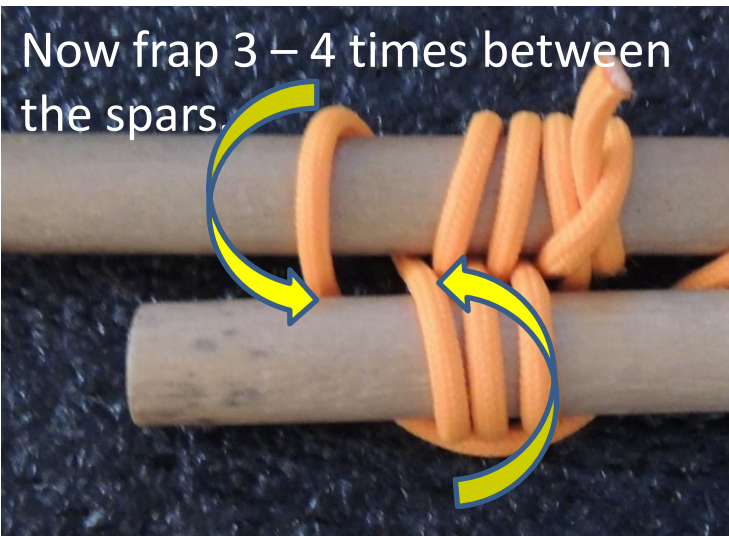
Start with a Clove Hitch on one of the spars.



Weave the line over, under, over, under 3 – 4 times.



Now frap 3 – 4 times between the spars.



Now frap 3 – 4 times.



# Shear Lashing Continued

Finish with a Clove Hitch on the other spar.



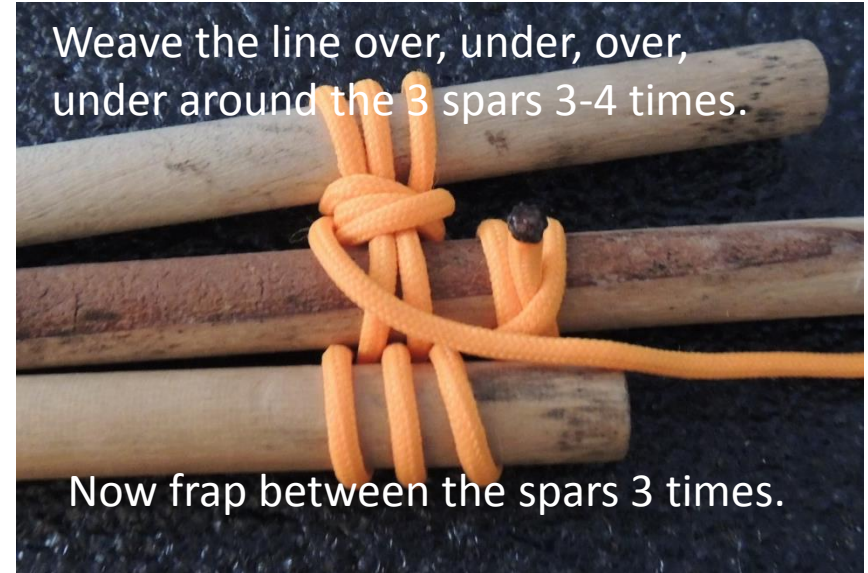
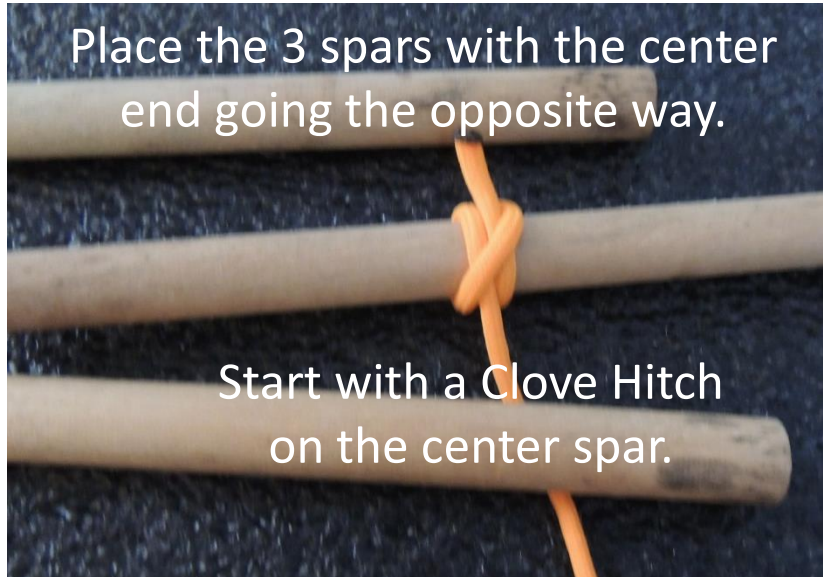


# Tripod Lashing

- Tripod Lashing – used to lash three spars together to make a tripod.



# Illustrations of a Tripod Lashings



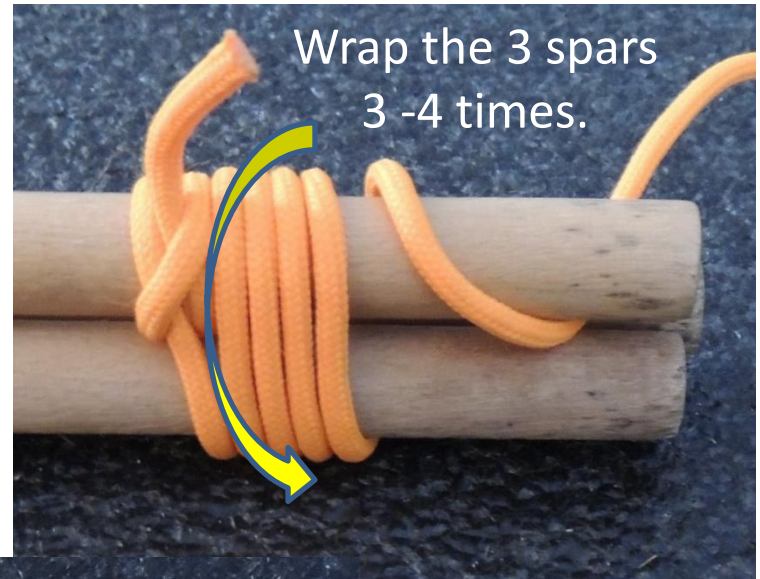


# Tripod Lashing 2

Start with a Clove Hitch on one spar.



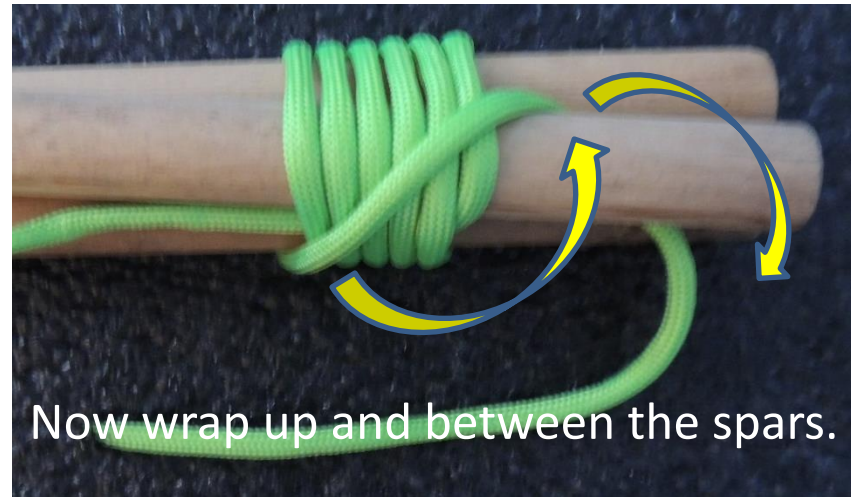
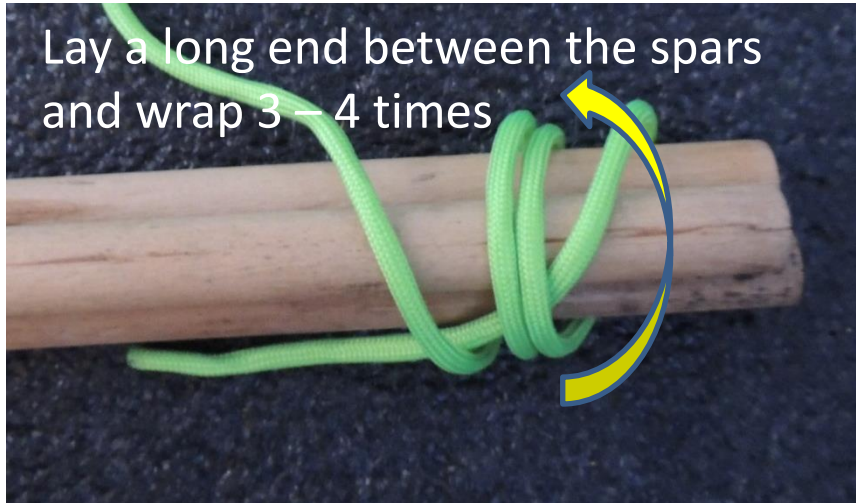
Wrap the 3 spars  
3 -4 times.



Finish with a  
Clove Hitch on  
one of the spars.



# Tripod Lashing 3





# Danish Square Lashing / Japanese Square Mk II.

- The Danish Square Lashing can be used instead of a Square Lashing, a Diagonal Lashing and a Tripod Lashing with practice.
- Many feel it is easier to tie since the spar is more secure with 2 lines as you tie the lashing.
- To make it easier to see the lashing we are using 2 different color lines secured with a Double Fisherman's Knot when tying the lashing photos



# Illustrations of a Danish Square Lashing

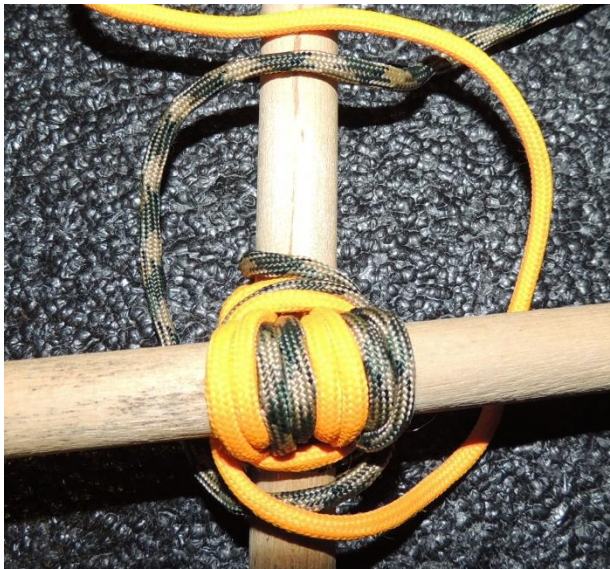
Center the middle of the line behind one spars.



Going in opposite directions



wrap each line 3-4 times.



Frap each line in opposite directions 3 times.



Finish with a Square Knot.



# Floor Lashing

- Floor Lashing is used to make a deck or a table top attached to a frame.
- There are many ways to do this and I will show the two that I use.





# Illustrations of Floor Lashing

1. A frame is made with Square or Danish Square Lashings

2. Start the Floor Lashing with a clove hitch tied at one side.

3. One way to tie this lashing is to wrap over diagonally then under the cross spar.

4. When you get to the other side go back the other way to make an X pattern.

5. Secure with a Clove Hitch.



6. Another way to tie the Floor Lashing is to again start with a Clove Hitch tied at one side.

7. Instead of going diagonally over the floor member just go across the spar and under the cross member. This makes a wrap on alternating sides of the cross member.

8. When you get to the other side go back the other way so that there will be a loop securing each side of the cross member.

9. Secure with a Clove Hitch.



# Trestles

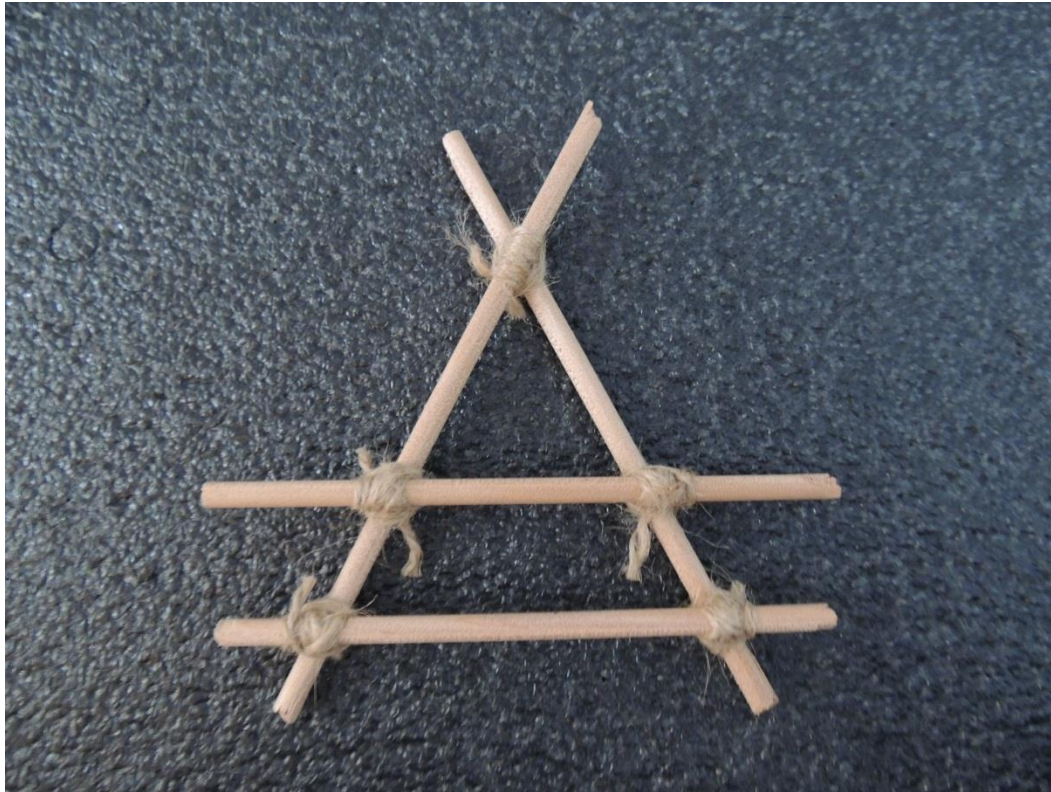
A Trestle – tied to make structures with lashings and spars.

H Trestle – tied to make structures with lashings and spars.

X Trestle – tied to make structures with lashings and spars.

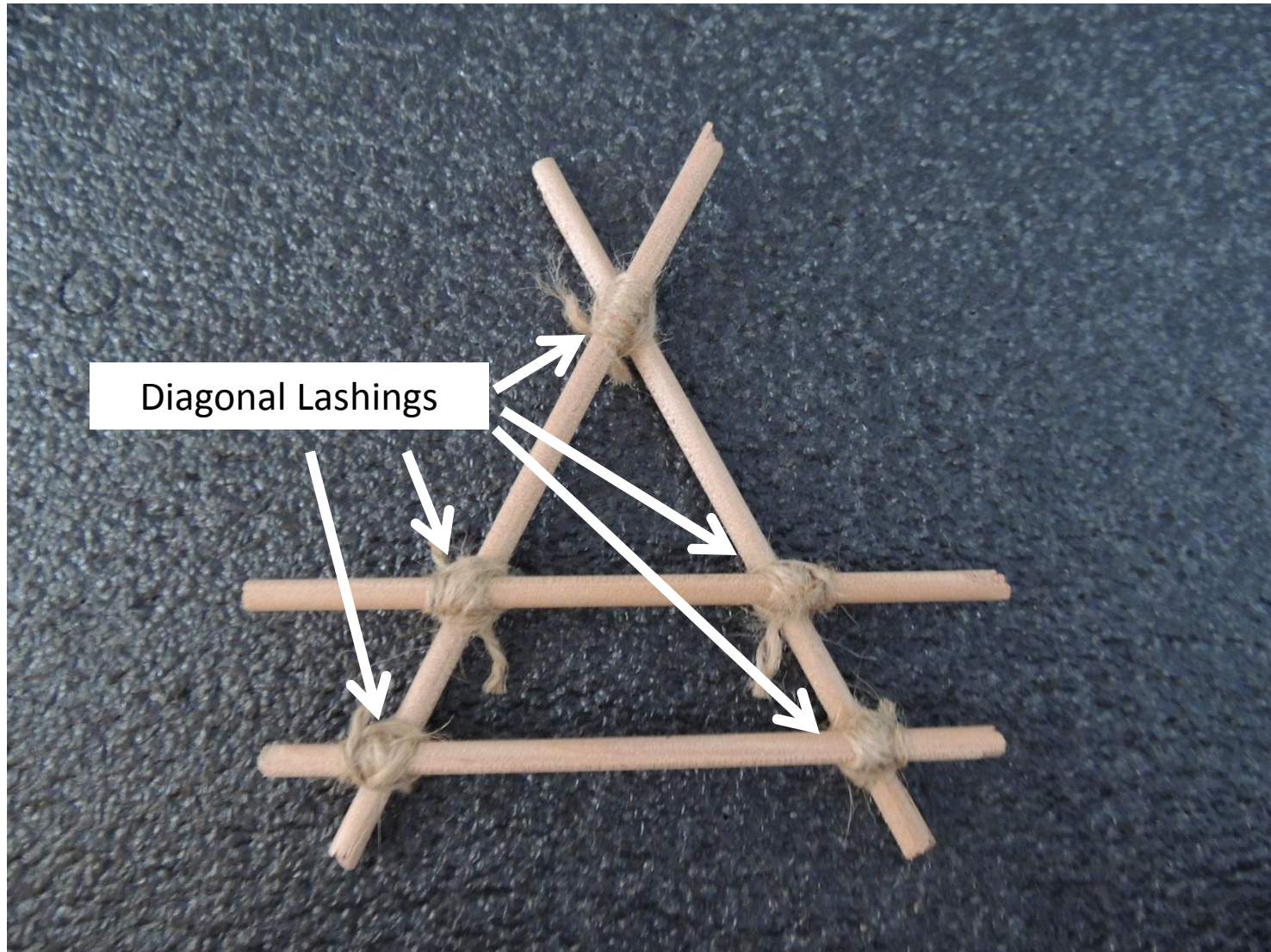
# A Trestle

- A Trestle – tied to make structures with lashings and spars.



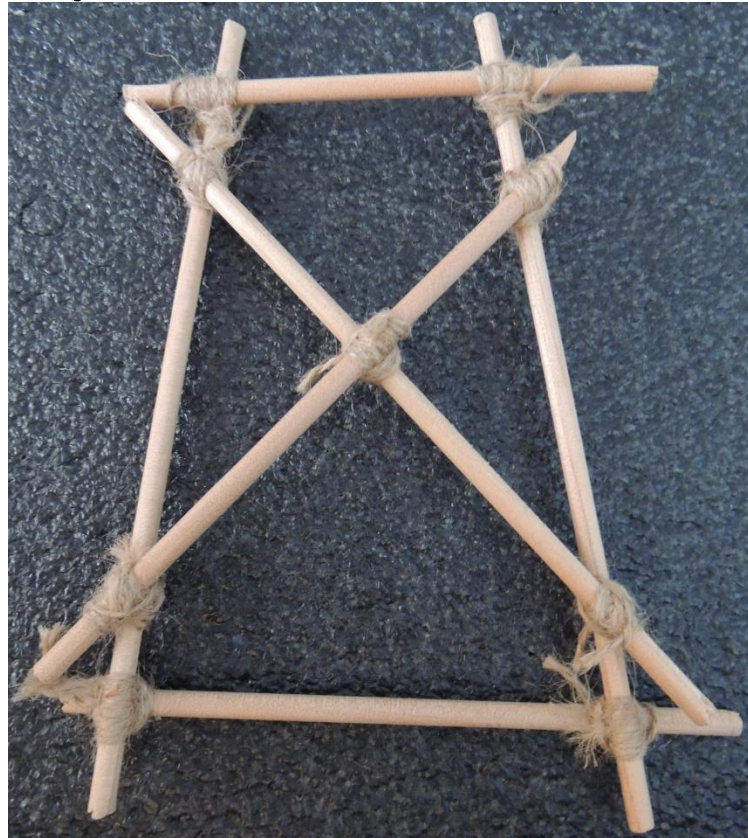


# Illustrations of an A Trestle



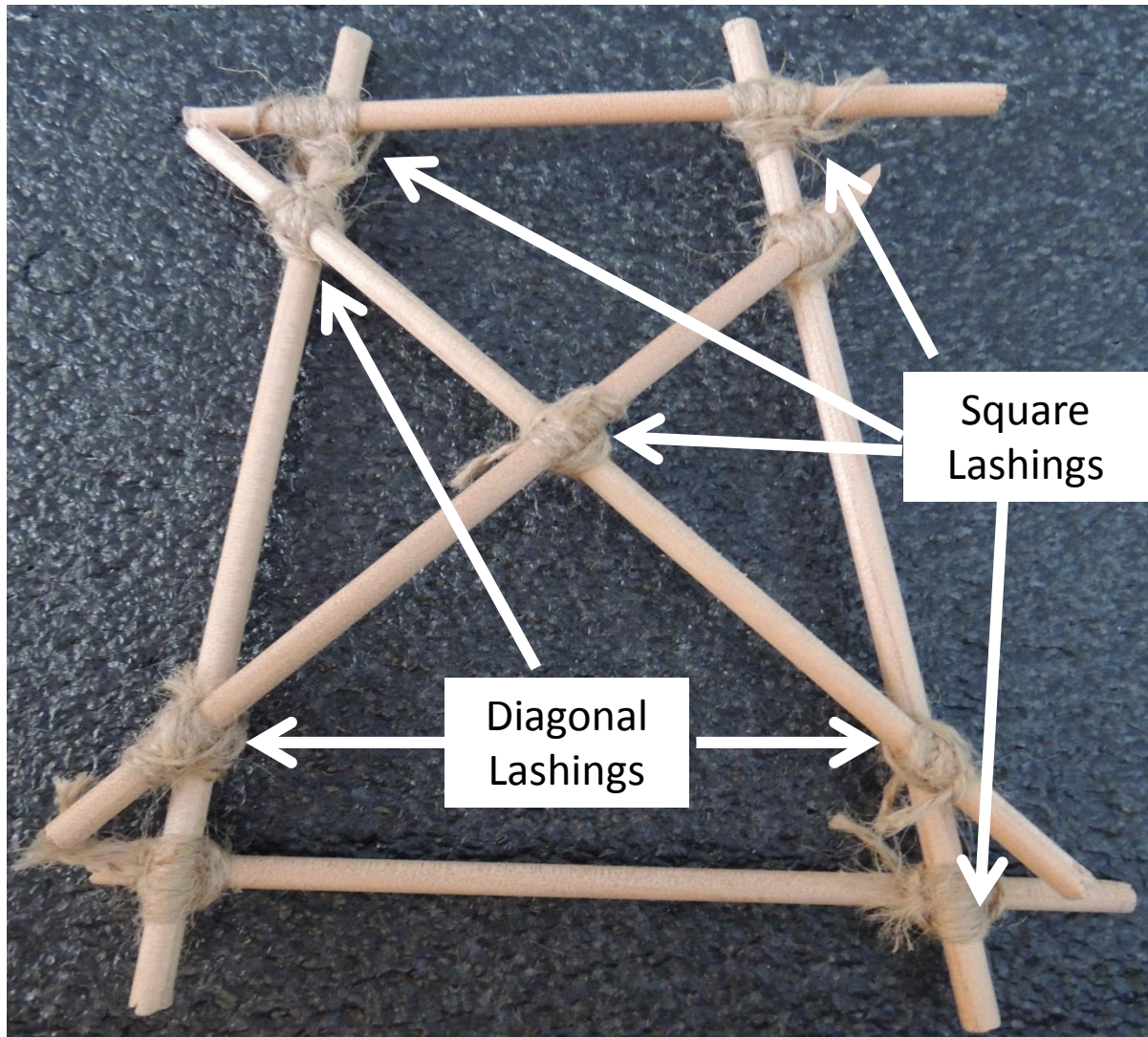
# H Trestle.

- H Trestle – tied to make structures with lashings and spars.





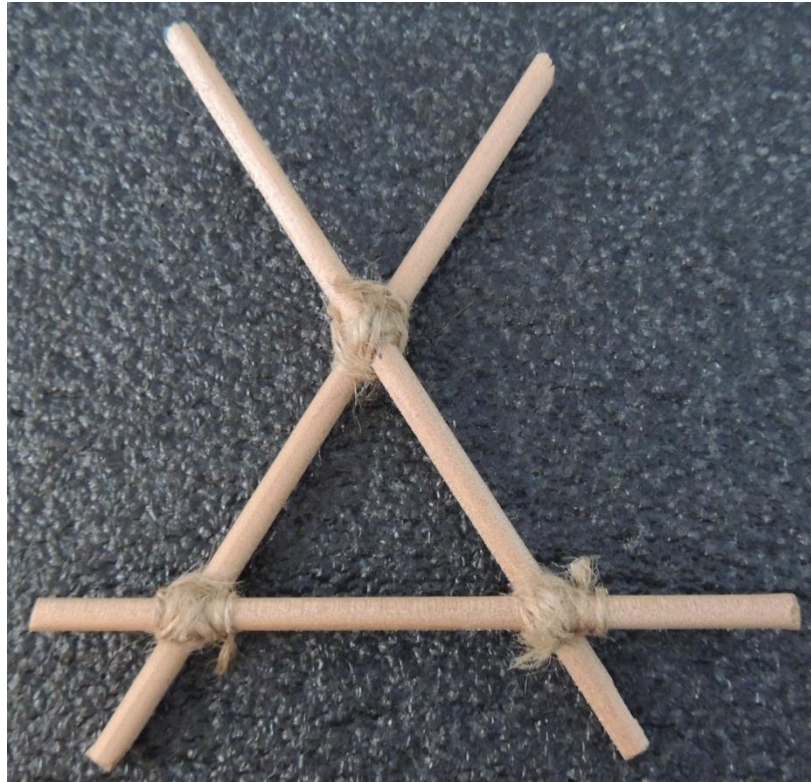
# Illustrations of an H Trestle



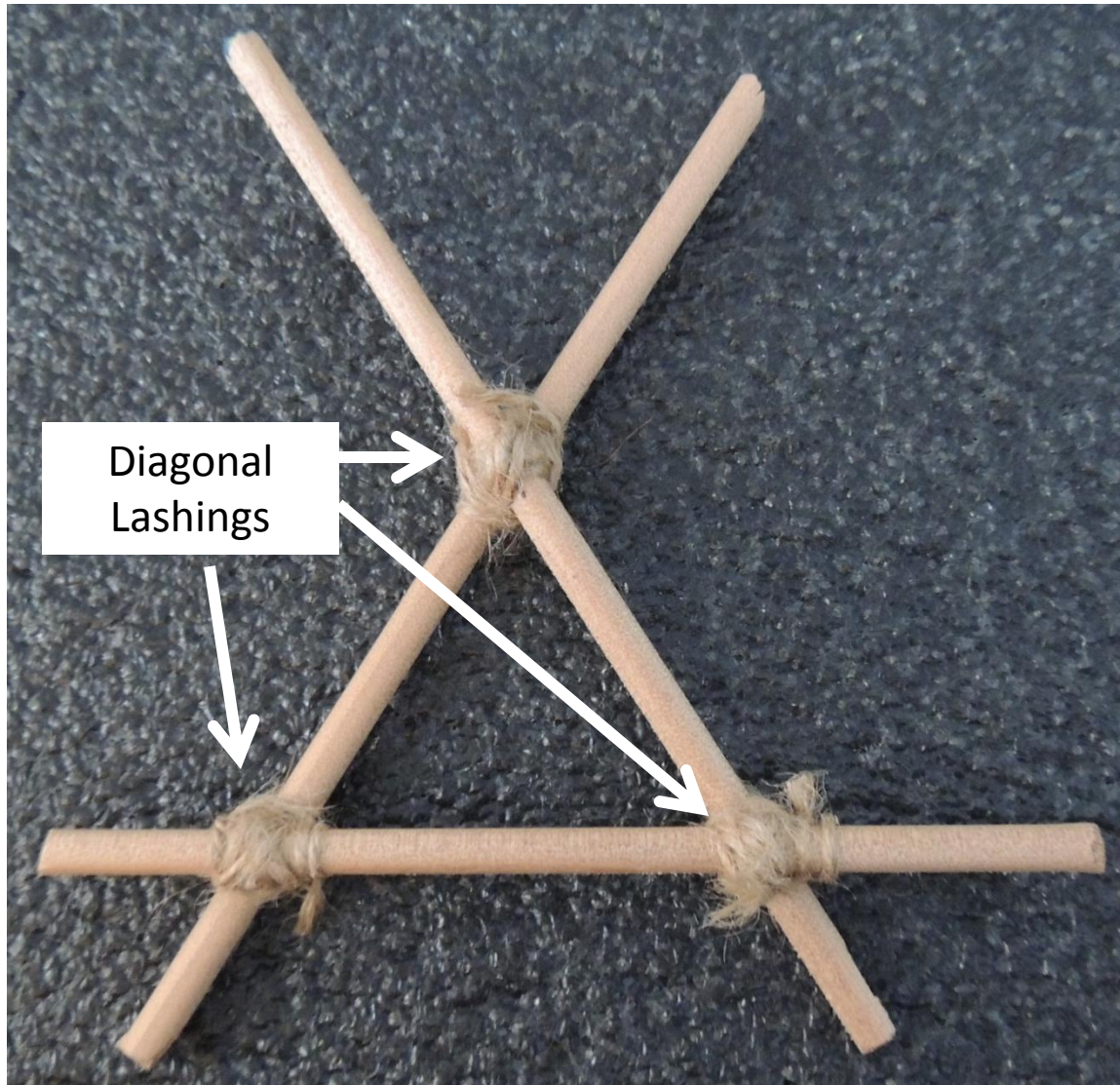


# X Trestle

- X Trestle – tied to make structures with lashings and spars.



# Illustrations of an X Trestle



# Making Various Items and Structures

- Stretchers
- Flag Poles
- Fencing
- Shelters



# Stretchers

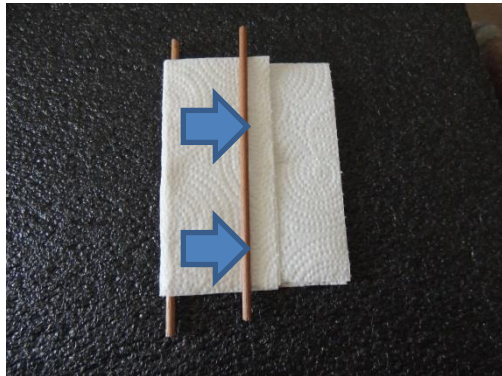
The fastest way to make a pole stretcher is as follows.



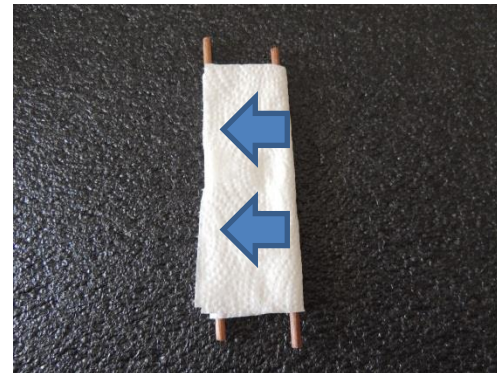
1. First you need two poles and a tarp or blanket.



2. Lay the first pole about 1/3 of the across the blanket. Try to leave a little pole on each end for handles

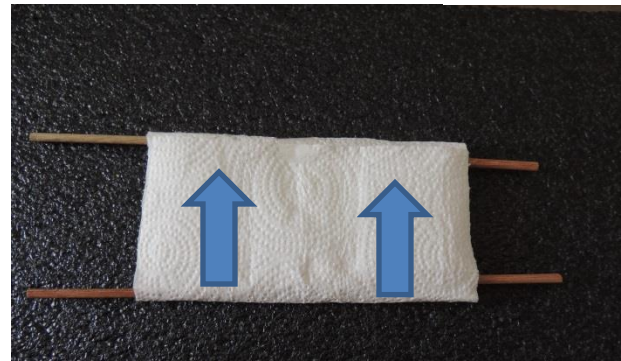
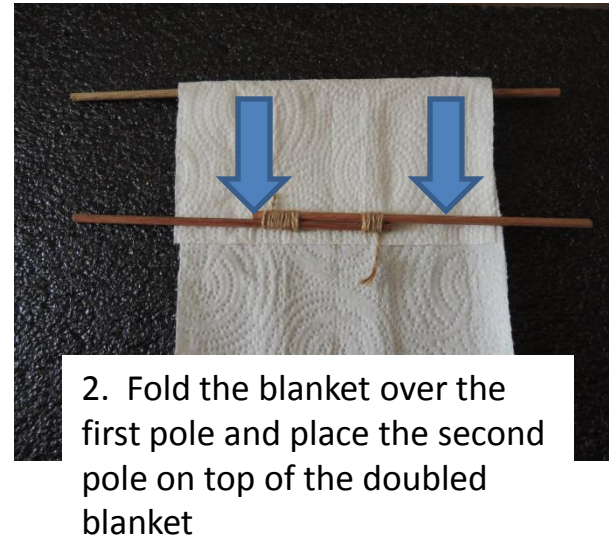
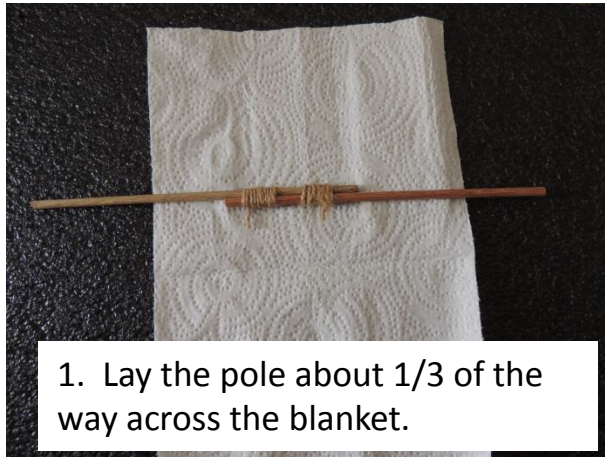


3. Fold the blanket over the first pole and place the second pole on top of the doubled blanket.



4. Fold the blanket the other way to complete the stretcher.

If you have a taller victim or shorter poles you can lash 2 poles together using two Shear or Round lashings on each side.

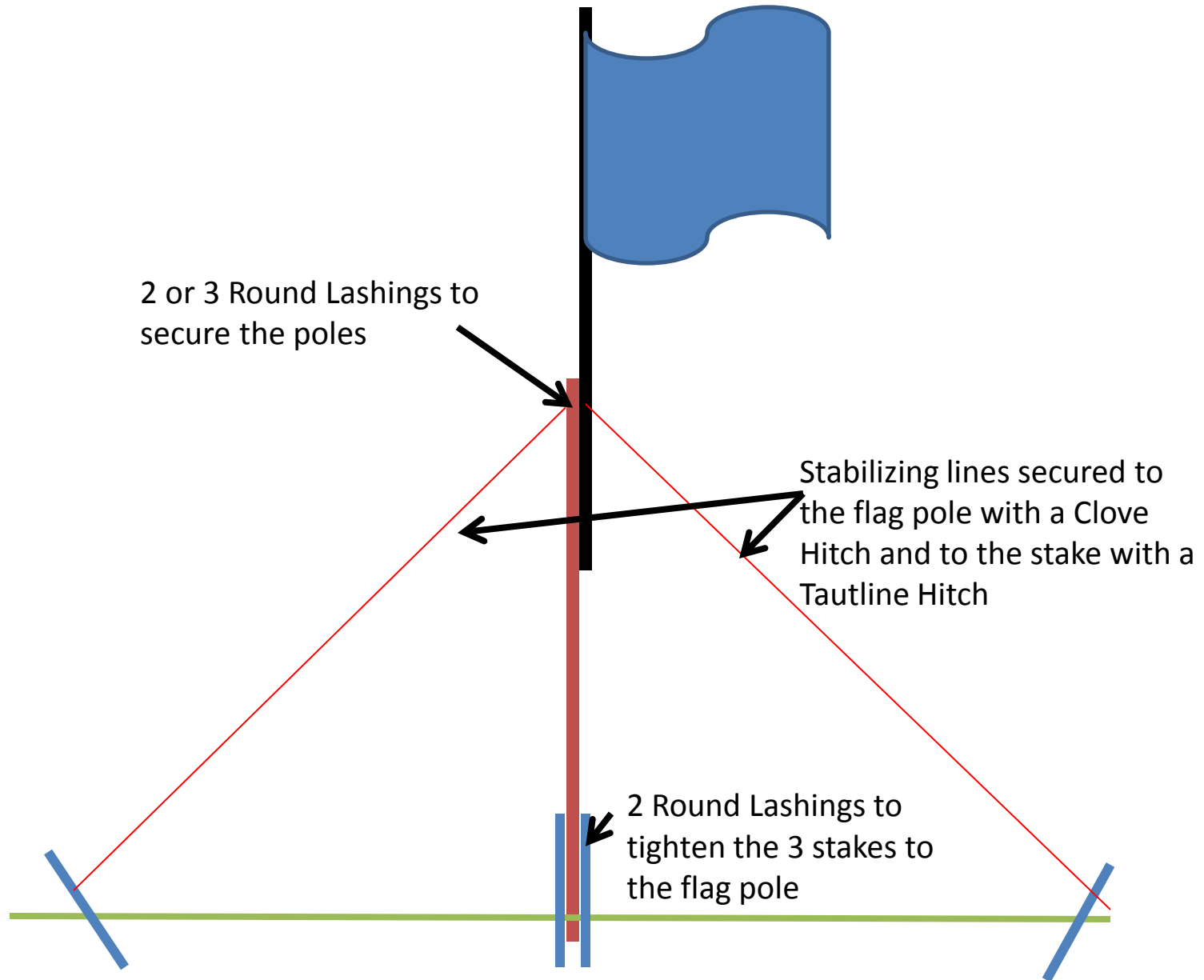


3. Fold the blanket the other way to complete the stretcher.

# Flag Poles

- To make a taller flag pole use 2 or 3 Round lashings to secure the poles together.
- 3 stakes can be driven into the ground in a circle with the flag pole in the center. The use a round lashing to tighten the stakes around the flag pole.
- For added security stabilize the flagpole with 3 lines at 120 degrees apart if possible. The lines are secured to the flag pole with a secured clove hitch and a tautline hitch at the stake end so tension can be adjusted.
- The longer poles can also be useful as a reaching rescue tool or probe.



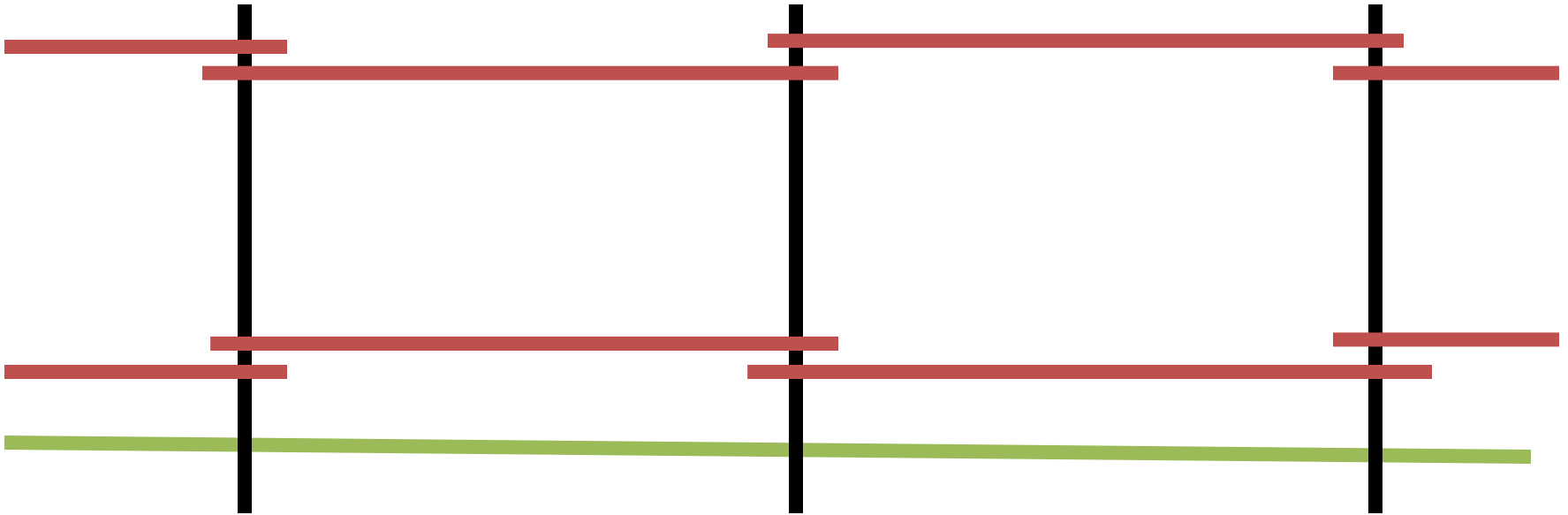


# Fencing

- A rigid pole(s) between to upright poles is many times a more effective barrier than a rope between the same to upright poles.
- Drive the uprights in first then secure the horizontal poles with a square lashing at each end.
- The is also an effective drying rack.

Square Lashings or Danish Square Lashings can be used at all points to secure the horizontal poles to the upright poles. A diagonal pole would strengthen this further.

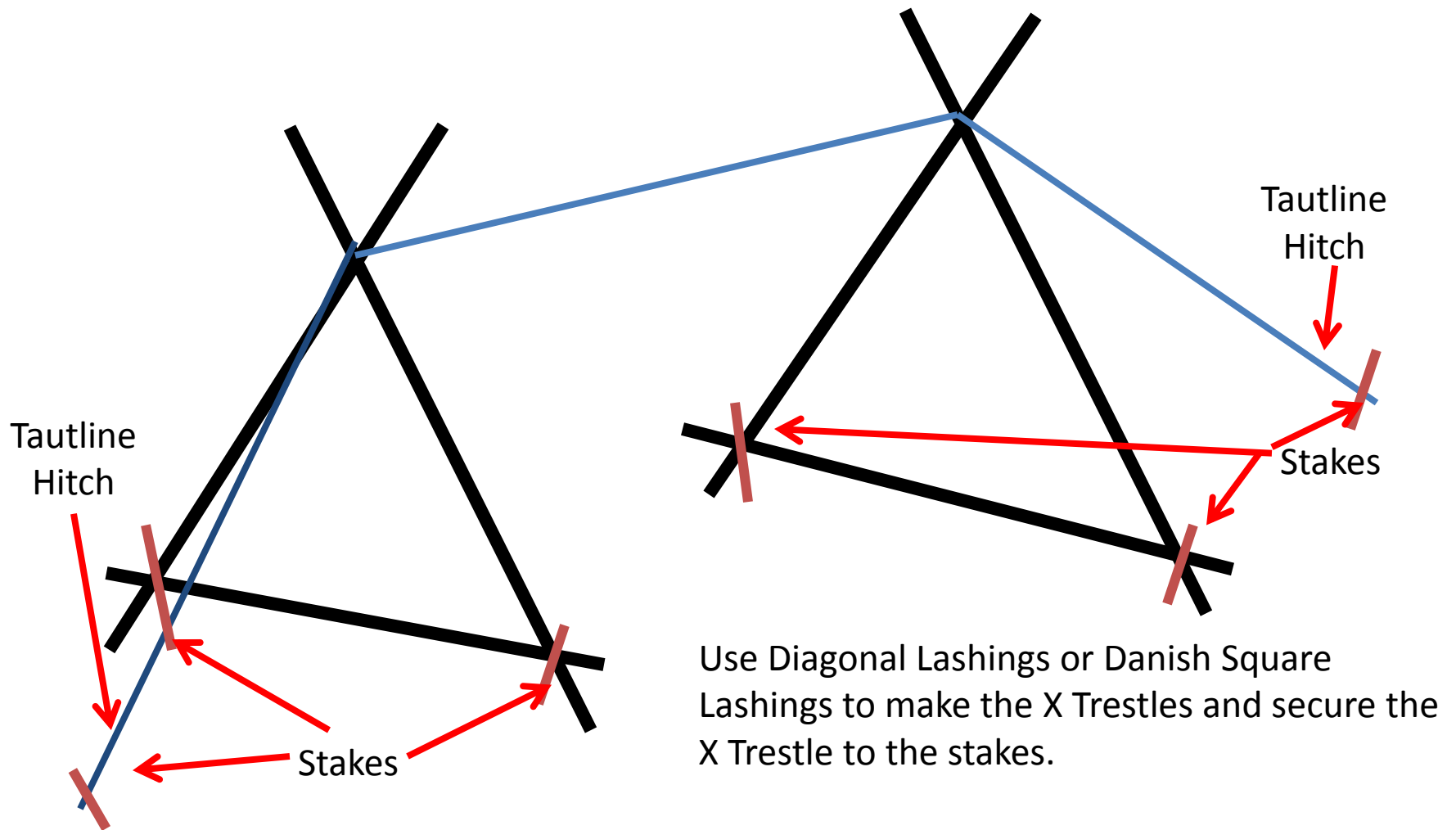
Drive the upright poles in 1 to 2 feet to secure





# Shelters

- Two X Trestles with a line between them in the top V makes a good frame for a tarp shelter.
- Stake the lines and the X Trestles down.
- Secure a tarp to the back of the structure then the tarp goes up over the line where the tarp is also secured.
- This takes more time to make than a line shelter but it is more stable.



## In closing:

- Lashings and the structures that can be made using them are tools that can prove useful in an emergency where you will be stationed for a longer period of time.
- Your imagination and the materials at the scene will determine what and how you can make it.