When to Use Knots and Lashings

A good knot must pass three tests: 1) It is easy to tie, 2) it stays tied, and 3) it is easy to untie.

Below are 12 knots that fall into five categories. Also below are methods to prevent rope ends from fraying.

The five categories for these knots are bindings, bends, loops, hitches and lashings.

BINDING KNOTS

A binding knot restricts an object(s) with a single line. Tying your shoe and tying up package are examples of binding knots.

A **square knot** tied with a single rope line is a binding knot.

Use a binding knot to tie bandages, packages or most any type of object.

BEND KNOTS

A bend knot joins two separate rope lines together.

- A **square knot**, also called a reef knot or joining knot, can be used to join two lines of the same diameter (thickness).

A **sheet bend** joins two lines of different diameters.

Use a bend knot to lengthen a rope by tying two lines together.

LOOP KNOTS

A loop knot creates a closed circle at the end of a line.

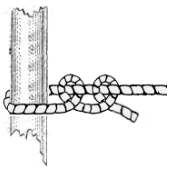
A **bowline** ties a loop that will not adjust in size once tied. It is referred to as a rescue knot because it can be tied around oneself one-handed, and is used to lift people out of dangerous situations.

A **taut-line hitch** is actually a loop knot that easily adjusts its loop size under tension, but remains secure once the knot is taut (pulled tight).

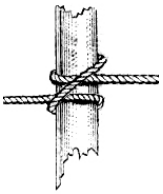
Use a loop knot for tying down cargo, hold down a automobile's trunk lid or hold just about anything in place.

HITCH KNOTS

A hitch ties a rope to an object like a post or ring. Think of hitching a horse to a "hitching post."



Two half-hitches is knot that holds a line when being pulled from a post in one direction.



A **clove hitch** is a knot that holds a line to a post when being pulled in two directions, like a bridge's rope handrail. *Clove* means "two" just like a deer's hooves are cloven – in two parts.

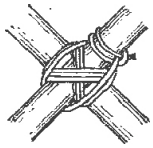
Use a hitch knot anywhere an attachment of a line is needed such as posts, eye ring grommets, or stakes. The clove hitch pulls from two directions like securing lines along a series of posts, or as starting or ending of a lashing (see below).

A **timber hitch** ties a rope to a piece of wood; it is intentionally difficult to undo.

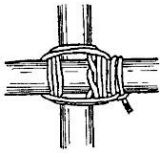
Use a timber hitch to secure a line to a tree, a log or to drag a log along the ground. The timber hitch is used to start a diagonal lashing (see below).

LASHING KNOTS

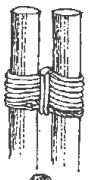
A lashing knot holds two poles together; think of the log wall forts of the American frontier.



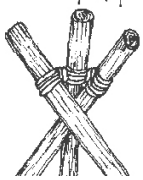
A **diagonal lashing** begins with a timber hitch and ends with a clove hitch. This lashing binds poles that cross each other at a 45° to 90° angle. Cross bracing at 90° is only used if a gap exists between poles.



A **square lashing** begins and ends with a clove hitch and binds poles at a 90° angle. It is stronger than the diagonal lashing, but the square lashing cannot be used if a gap exists between poles.



A **shear lashing** begins and ends with a clove hitch and binds poles at a 0° to 45° angle. Use this when poles must flexibly swing apart in a scissors motion such as the shear legs of an A-frame.



A **tripod lashing** begins and ends with a clove hitch and binds poles to be arranged to form a pyramid. Use this to hang a pot above a fire or hold a water-dispensing device over the ground.

Use lashings to build without nails useful simple structures like a tripod, a chair, a hang-drying rack or a flagpole. *Pioneering* is the use of spars and lashings to build complex structures with trestle triangles like a tower, a shelter or a bridge.

There are times to not use lashings. Do not build structures without permission while camping – never build lashing structures in backcountry. If lashing is permitted, only use approved materials, then untie all structures and practice principles of leave no trace.

WHIPPING

Whipping intends to stop a rope end from unraveling.

- Tie a rope end with a simple **overhand knot** and wrap it with **duct tape** for a temporary fix.

A **whipping knot** uses twine to bind natural-fiber rope.

Heat fusing with a candle or match melts the end of artificial-fiber ropes made of plastic or nylon.

References:

- http://www.ropeworks.biz
- The Boy Scout Handbook