Diamond's head
Done using a knife or a small hatchet for bigger diameters.
It is used to refine the aesthetics and to better tolerate the usage of an hammer it it is a stake.

Use the knife with the thumb for a better control.

A completed diamond's head.

Partridge's eye
After creating the hole, it is suggested to create this notches using the knife, to remove chippings and similar stuffs and to facilitate the movement of the cord. Finally, it enhances the aesthetics.

Invito (literally, "invite", even if it does not make any sense when translated)
It is a stretched partridge's eye aroud the hole, which facilitates the overlap of two modules (see the diagonal joint or the square joint).

In this cas, an hazel wood has been used, which can be found in the undergrowth, for quick and simple buildings.

The CatDrill

CatDrill is a new scout pioneering technique (it has nothing to do with carpentry) which that supports the classic pioneering (with ties) and the froissartage (with French origins). This is a light pioneering technique because it uses only light wooden poles that can be find in the undergrowth (e.g.: hazel) or branches found on the ground (e.g.: larch).

CatDrill intensively uses holes, where the cord is passed and resides. In this way it is possible to join different pieces of wooden poles (called "**modules**"), creating ties, sinks and a lot of other suffs which allow us to solve the most common problems found while building structures inside a scout camp.

The technique intensively uses physics principles, which allow the explotation of the materials characteristics. In this sheets, the **base schemas** used to build more complex structures are presented. An example is available in the picture below.

Building materials:

- Light wooden poles
- Nylon cord (4 or 5 mm; max 6 mm)

Needed tools:

- Knife
- Saw flick
- Hand drill with wood drill bits

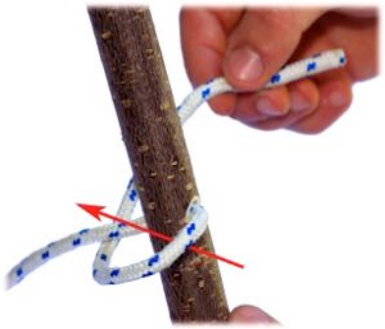
SELFBLOCKING

It constitutes the building base for other **CatDrill** joints. It allows to block a cord and a module in a really simple way. Really simple also to untie, it offers a lot of advantages in different applications.

1

Insert the end of the cord Inside the hole.

2



Execute a circle around the module.

3

Insert the end of the cord inside the buttonhole which appears near the hole.

4

Tight by pulling the other end of the cord and execute a simple knot.

Variant: double selfblocking
Creates to independent, blocked ends of the cord (instead of one).

1

Starting from the simple selfblocking, another selfblocking is realized on the other end of the cord.

2

3

The knot has to be tighten really well. No security knot is required.

Variant: selfblocking with hook
Sometimes, it is useful to be able to quickly untie a selfblocking or to create a temporary selfblocking.

1

It is a standard selfblocking, but the end of the cord is not fully extracted in order to create a buttonhole.

2

3

Be careful: the buttonhole has to be well tight and the end of the cord must be external compared to the hole (see the third picture).

SQUARE JOINT

It is one of the basic joint. It is used to firmly join two (nearly) perpendicular modules. It does not stop the rotation of the modules like a dovetail, but works like a square ligature.

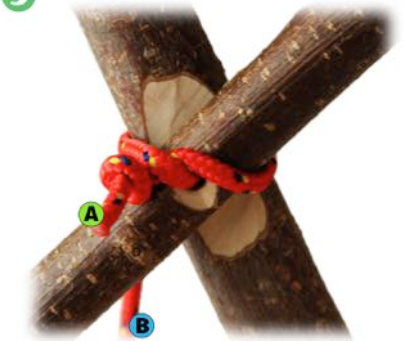
1

After checking that the two “invites” fit as expected, put the end of the cord (A) inside both the holes. Turn around diagonally as shown by the arrow.

2

Put the end of the cord inside the generated buttonhole, near the partridge's eye.

3



Execute a simple knot and move it near the joint. Then, thighten by pulling the opposed end of the cord (B).

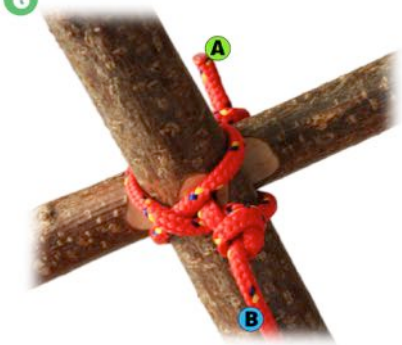
4

Reverse the modules and using the other end of the cord (B), turn around on the other diagonal, as shown in the picture.

5

Put the end of the cord in the generated buttonhole and tighten pulling up and down the end of the cord (B).

6



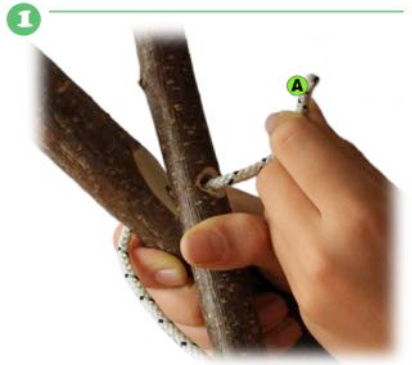
Conclude with a simple knot as security knot.

To better bind the joint, it is suggested to pull one end of the cord at a time. While pulling, move it up and down, to allow the cord to slide around the modules.

DIAGONAL JOINT

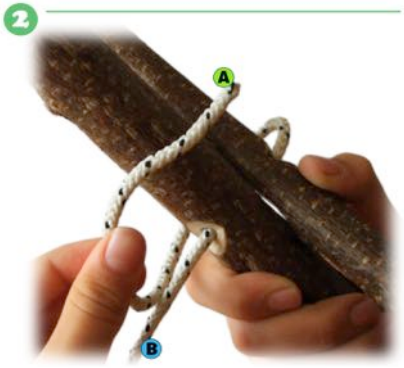
Allows to join two modules which creates an acute angle (instead of a right angle as in the square joint).
Even in this case, two "invites" on both modules are strongly suggested.

1



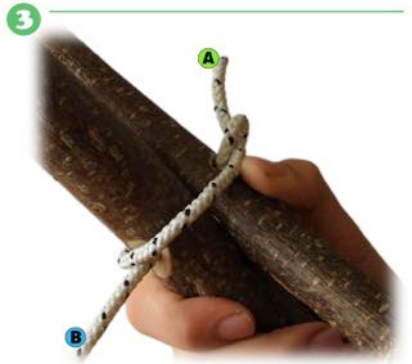
Pass the end of the cord (A) through both the holes.

2



Turn around the two modules.

3



Pass inside the buttonhole which appears near the partridge's eye.

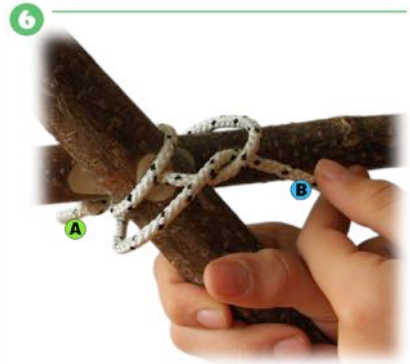
4

Execute a safety knot near the hole (as near as possible) and tighten it pulling the opposed end of the cord (B).

With the remaining end of the cord, (B) turn around the two modules.

5

6



Insert the end of the cord (B) inside the button hole, as shown in the picture.

Accurately thighten the joint and conclude with another safety knot.

7

TRIPOD PARALLEL JOINT

It allows the join of three parallel modules, which can move a little bit.

1

Pass the cord through the three holes, checking that the holes remain parallel.

2

Turn around one of the three modeules.

3

Pass through the bottonhole near the Partridge's eye and then autoblock the cord.

4

Execute a security node near the hole (as near as possible) and tighten it pulling the opposed end of the cord.

5

With the remaining end of the cord, turn around again and autoblock the cord as before.

6

Check that the cord does not overlap.

7

Thighen the joint and conclude with a safety knot.

It is suggested to drill the holes at least 5 cm away from the diamond's heads of the modules.

TRIPOD CROSSED JOINT

Allows the joint of three crossed modules, which constitutes a tripod (the broader base than the previous one)

Pass the cord through the three holes, checking that they stay parallel.

1

2

Turn diagonally around the three modules.

Pass the end of the cord inside the bottonhole which appears near the partrige's eye and selfblock it.

3

4

Execute a safety knot and accurately tighten the selfblocking.

With the other end of the cord, turn again around the opposed diagonal.

5

6

Rear view of the joint.

Pass the end of the cord inside the bottonhole.

7

8

Accurately tighten the joint and and conclude with another security knot.

It is suggested that the holes are made at least 5 cm away from the diamond's heads.

SIMPLE SPIRAL JOINT

It allows the joint of multiple parallel modules on another module, to realize planes (benches, tables, etc...)

1

Pass the end of the cord through both the holes and selfblock on the diagonal.

2

Accurately tighten and execute a safety knot.

3

Pass the end of the cord throught the hole in the second modules, as shown in the picture..

4

Execute it again and again until the second-last.

5

Conclude with a seflblocking on the diagonal, as done at the beginning.

The number and the distance between the modules depends on the kind of contruction we are building. With parallel internal modules, it is ok even if they are not too much tighten, otherwise other kinds of more complex joints are needed.