

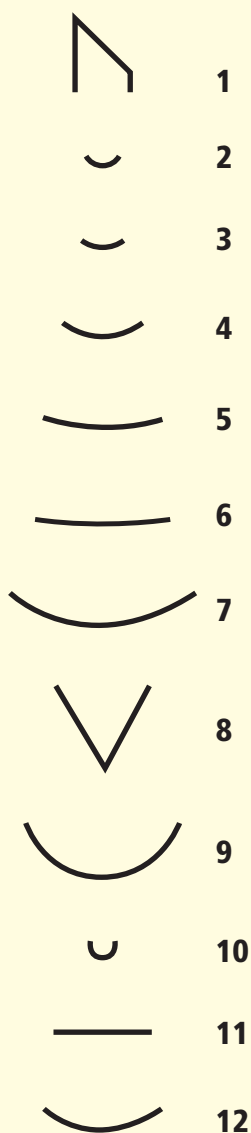
# Woodcarving by Numbers

with Mike Davies

## Celtic Designs

**Woodcarving by Numbers is a simple to follow programme, that guides woodworkers of all skill levels to become competent woodcarvers. Available as a tool and DVD package, simply match your carving tools to the numbered profile chart, and follow the step by step guidance through each project. Watch and learn the Significant Six Carving techniques in the 'Woodcarving Foundation Skills' DVD and work through the various projects, graded in difficulty, designed to put your skills to the test. The ultimate goal is to create designs of your own to add a unique point of difference to your woodworking projects.**

### Sweep Profile Reference Chart



**Pic 2**

It is thought that the Celtic civilization had origins in Britain and Western Europe stemming back to the Iron Age. Evidence is thought to date back as far as 500 BC. There are few written records remaining from this civilisation, however, their designs and symbols have transcended the globe and remain in use today.

### Celtic Designs

The internet is a rich source of Celtic designs to try, and many follow the same principals as the one demonstrated in this project. Simply type 'Celtic designs' into your internet search engine and then click images. You will find plenty of examples, and with a little research

you can discover the origins of the designs, where they have been used and the symbolism that they carry.

### The symbol in this project is thought to represent 'Family'.

- 1) You can enlarge the drawing in fig 1 to suit your own application, however, the example that I have carved has a diameter of 107mm.
- 2) **Pic 2.** Prepare your timber so that the face is clean and flat. You can use any timber to carve the design, and I have chosen oak. Print or photocopy your design onto paper, and then secure it to your timber. When marking out it is important that the design doesn't move, so



**Fig 1**

masking tape is a good idea to keep the design in one place.

3) In **Pic 3.** You will see how the design has been transferred onto the timber using carbon paper. When creating circles, try to use a compass to ensure that the curves are as accurate as possible. Always remember that your carving will be a direct result of the drawing, so if your drawing is inaccurate, then the carving will be too.

4) Begin by setting in the outer circle using the appropriately shaped tools from your tool collection. In my case I found that tool ref # 6 was the perfect profile.

**Please refer to the Significant Six Techniques tutorial or watch the Foundation Skills DVD for safety and guidance with your techniques.**



In **pic 4** note how the tool is angled, so that the bevel will form a cut that is 90 degrees to the timbers surface, to form a wall to the outer circle. Notice also that the first cut is set in on the waste side of the line. Try to avoid cutting directly on your line to begin with, as you can trim back to the line accurately after the majority of waste timber has been removed. Hold the tool firmly in the 'pinch position' make sure that you anchor the tool and tap the handle with a mallet to form your first incision.

**5)** In **pic 5**. Note how tool ref #6 has been used to set in the inner circle. Notice the angle that the tool is presented to the timber on this occasion. The inside of the tool has been used, therefore the tool is presented at 90 degrees to the timber's surface. Again, apply a gentle tap with the mallet. The objective is only to mark the timber at this stage. Avoid using heavy cuts as you set the cuts in deeper at a later stage. Also note that once again the cut is made on the waste side of the line.

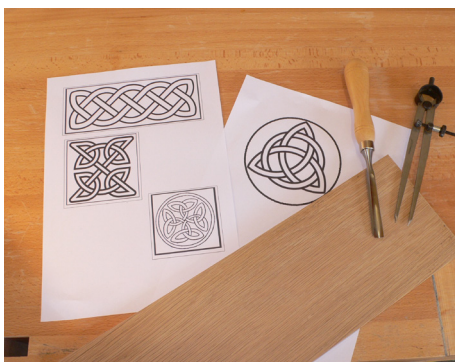
**6)** You can see in **Pic 6** how the waste timber has been removed. The overall depth of the design will relate to the overall diameter, but in my case I have aimed to maintain a depth of around 3-4mm. I have used tool ref # 3 to create an undulating effect on the base of the design. It is not necessary to create a perfectly flat base, although you could use a router to remove some of this waste if desired. Try to keep the work as clean as possible and avoid leaving splinters of timber still attached. Try to ensure that with each cut you remove the waste completely, rather than chewing at the timber leaving an untidy and ragged appearance.

**7)** After achieving the desired depth, you can see in **Pic 7** how the design is being cleaned up by trimming accurately to your marking lines.

This is why it is important to be as accurate as possible when marking out. Once again, trim the shavings at the base to allow them to be completely removed from the design. You can see how the entire outer perimeter of the design has been completed in **Pic 8**.

**8)** The next step is to begin setting in the internal components of the design. Once again remember to angle to tool appropriately to ensure that you achieve 90 degree cuts to the surface of the timber. **Pic 9**

**9)** Don't worry if the profiles of your tools do not match the curves of your design perfectly. There will always be occasions where you don't have the 'perfect' profile, therefore you can adapt to achieve the desired outcome. In **pic 10** you can see how tool ref # 3 has been used to get as close to the required profile as possible. Once the waste has been removed, as illustrated in **pic 11**, you can use tool ref # 1 to clean up the desired profile. After you have achieved the required depth, then cut accurately to the lines of your design, ensuring that you cut at 90 degrees to the timber's surface.



**Pic 2:**



**Pic 3:**



**Pic 4:**



**Pic 5:**



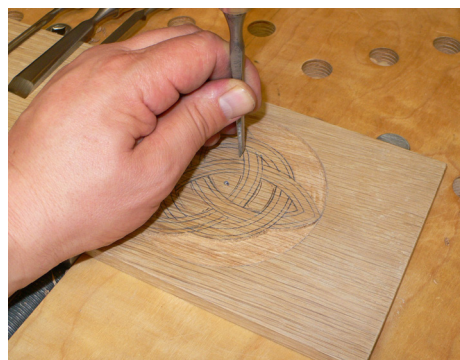
**Pic 6:**



**Pic 7:**



**Pic 8:**



**Pic 9:**



**Pic 10:**



**Pic 11:**



**10)** In **Pic 12** you can see how tool ref # 2 is being used to get as close as possible to the required outline. Tool ref # 1 is used once again to help clean up the required profiles. **Pic 13.**

**11)** A handy trick of the woodcarvers trade is to create a series of shaped punches for those difficult to reach areas. The punches can be made by filing steel bar into the required shape, and when used will help you to achieve clean, defined areas that would otherwise be very difficult to create. **Pic 14.**

**12)** Our next step is to create the 'under and over' effect of the woven pattern. I have used tool ref #6 to gently set in the pattern. Only set the cut in around 1mm at a time, and be extra careful to follow the design accurately. The last thing you want is to set a cut in in the wrong area. **Pic 15.**

**13)** Then with tool ref # 11, gently carve down to your set in line to achieve the woven effect. This is where the 'Anchoring' the tool and 'sliding' the blade come into play. (See significant six techniques). **Pic 16.**

**14)** When you have a clean woven effect, it is time to re-draw on your internal decoration for the bands. Remember how important it is that you take your time to ensure that your drawing is as accurate as possible. **Pic 17.**

**15)** With tool ref # 2, I have then carefully created the channel between the lines. It is important that the ridge line that you create, where the channel meets the surface, is a clean and gentle curve that follows the profile of the bands. Try to avoid having 'elbows' in your lines and ensure that the two tram lines on the surface of each band are parallel and of equal width. **Pic 18.** It will now become clear why you need to maintain a 90 degree angle when setting in vertical cuts around the perimeter of the design. If the cuts are angled, then the bands will become wider or narrower as you begin to create the woven effect.

**16)** In **pic 19** you will see the completed design. Now take some time to perfect your lines by gently trimming the profiles of the bands and ensuring all lines flow nicely into each other as they weave under and over. Try to achieve a clean finish directly from the tools. It is perfectly acceptable to use a fine sandpaper to help smooth away the final tool marks, but try to avoid rounding over your crisp, clean lines.

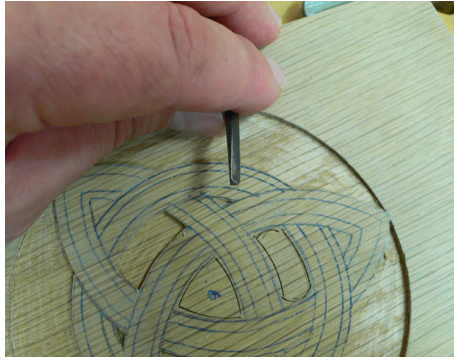
**17)** Some carvers will choose to leave the undulating pattern in the background of the design, created by the carving tools. However, an alternative is to create a stamped pattern **pic 20**. You can create a stamp by simply filing a series of 'V' channels across the ends of various shaped sections of bar. The idea is create a series of small pyramids that will create a random pattern of indentations into the timbers surface. This is particularly effective if you are planning to stain the work, as the stain will sit in the recesses of the stamped area, forming a darker colour bringing the carved design to life. **Pic 21.**



**Pic 12:**



**Pic 13:**



**Pic 14:**



**Pic 15:**



**Pic 16:**



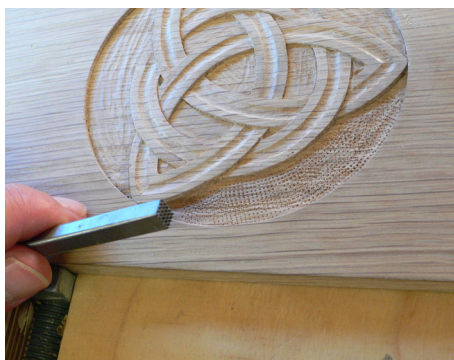
**Pic 17:**



**Pic 18:**



**Pic 19:**



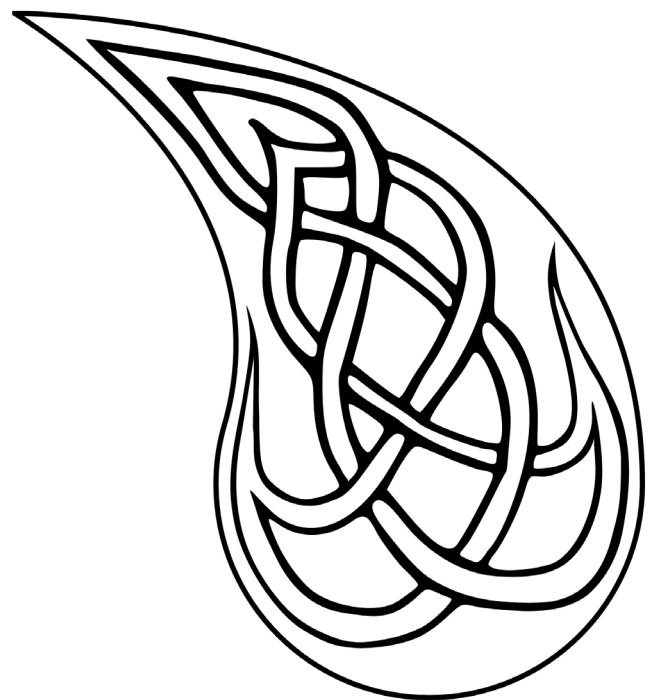
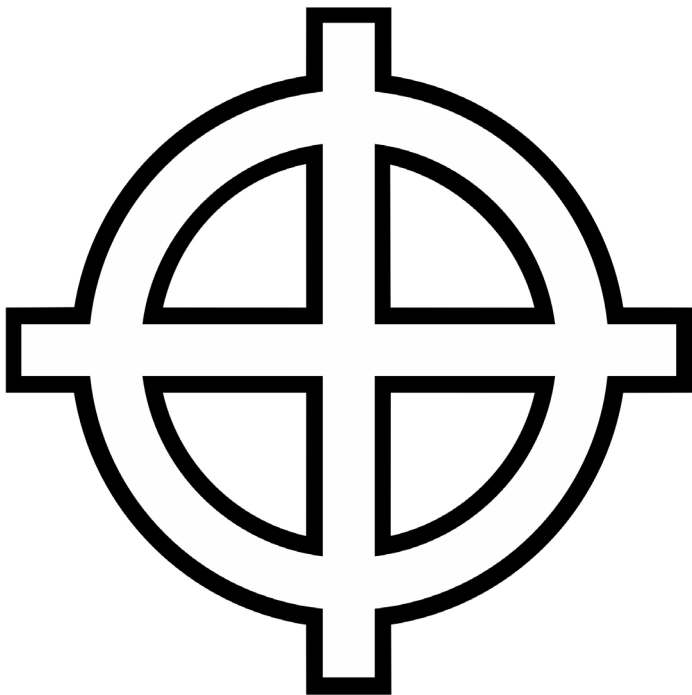
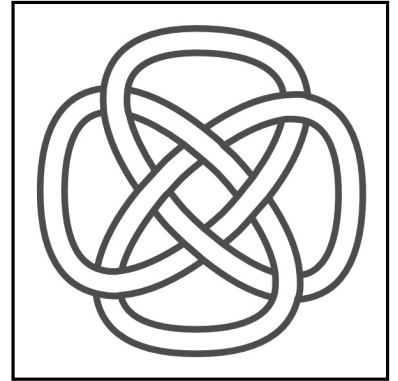
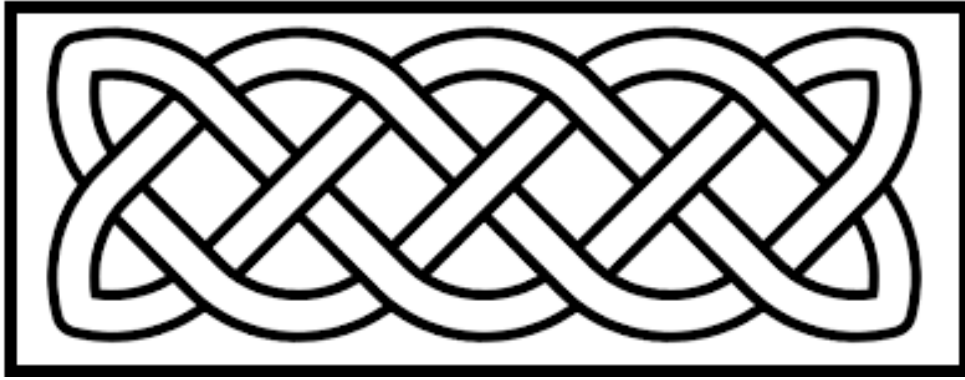
**Pic 20:**



**Pic 21:**

## The internet offers a rich source of design ideas to try.

Here are a few examples of alternative designs.



### About the Author

Mike Davies is an accomplished craftsman, who has completed projects for royalty, national trusts and private collectors alike. He has surveyed and restored works by many of the great designers and carvers from the past.

As a qualified teacher, he originally developed his 'Woodcarving by Numbers' educational system in 1994. It was created to help woodworkers of all skill levels to master the art of woodcarving.

Since then, his system has been published in magazines and books. It has been televised and used to teach students in schools and colleges around the world.

The information contained within this document, forms part of a DVD and tool package, which has been developed in cooperation with many of the world's leading carving tool manufacturers.

### Important Information and Disclaimers:

learnabout.TV and Mike Davies assume no responsibility or liability for injuries, accidents or damages resulting from the information conveyed herewith. The information or instructions are provided as general guidelines only and demonstrate woodworking activities performed by skilled and experienced craftspeople. These techniques can be dangerous. If you practice them, proceed carefully and at your own risk. The Sweep Profile Reference Chart is provided as a simple referencing system for this series of Woodcarving by Numbers tutorials. It does not refer to references used by the London Pattern Guide, Sheffield List or Continental System.

Please note that due to the printing process there may be variations between the sweep chart and actual tool profiles.

