

# Woodcarving by Numbers

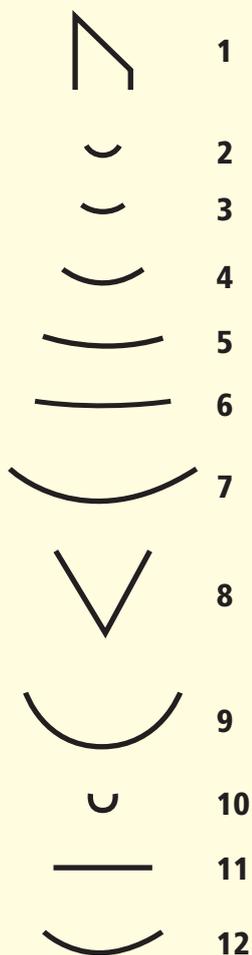
with Mike Davies

## Guilloche

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.

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

### Sweep Profile Reference Chart



### Guilloche



The term Guilloche is of French origin, and describes a decoration which can be found widely in ancient Greece and Rome.

A typical guilloche design is formed by two or more bands, which are interwoven to form a repetitive pattern. In many cases the bands are interspersed with other designs, colours or textures. The same basic elements of guilloche also feature strongly in Celtic, Anglo Saxon and early Scandinavian decorative arts, producing in some cases extremely elaborate and complex patterns.

The principals of guilloche can also be found in Islamic and Moorish artwork and these were refined extensively during the renaissance, drawing on classical medieval and Moorish influences. We can see these designs being used to decorate English furniture dating from the 16th century onwards. At first, the decoration was simply carved, however, it was later painted and inlaid into the fine furnishing of the Georgian period.

Guilloche can be found in many different guises, however, it is the continuous interwoven bands

or ribbons that are the defining principle. The decoration can be used to decorate rails, mouldings, panels or even turned items such as bowls or spindles.

For this design, I recommend using a piece of timber measuring 450mm x 150mm x 20mm. This particular style and design might typically be found carved into oak, however, feel free to experiment with local species that carve nicely.

1. Photocopy or redraw the design to scale referring to Figure 1. Recreate the drawing so that each square of the grid measures precisely 20mm. It is advisable to use a compass to form the circles. Once the drawing is accurately reproduced, you could make a stencil, which will help when marking out long lengths of the repetitive design.

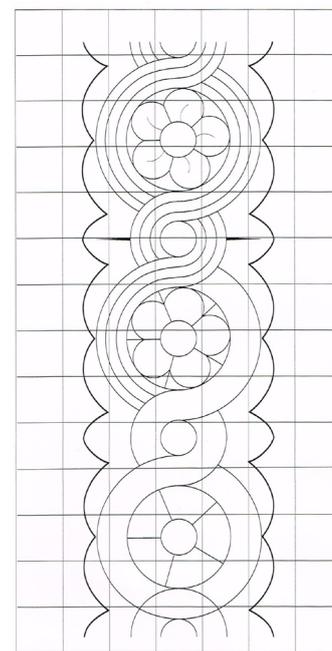


Figure. 1

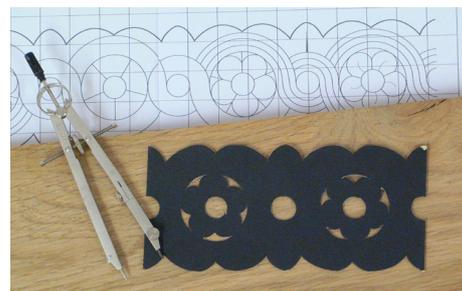


Photo: 1

2. In Photo 2 you will see how certain sections of the circles have been erased, producing the continuous over and under configuration of the woven band.



**Photo. 2**

3. Take a look at the significant six techniques tutorial and Foundation Skills DVD.

4. With carving tool # 6, set in vertical cuts around the outside perimeter of the larger circles. Be careful to ensure that you anchor the tool at all times and that the cuts are at a 90° angle to the timbers surface.



**Photo. 3**

Stop the cut on one side where it meets the outside of the smaller circle and on the other where it meets the inner berry. You can then use the same carving tool to make angled cuts towards the vertical 'set in' cut, which will help to remove the waste timber and define your bands.



**Photo. 4**

5. Our next step is to develop the smaller circles as shown in photo 4. Place the cutting edge of carving tool # 5 on the circle, ensuring that the blade is vertical to the timbers surface. Now set in the profile by gently tapping the handle with a mallet to create a shallow incision. Next, reposition tool # 5 and take a further cut towards the set in circle at a slight angle to the incision. The result should be the removal of a tiny segment which gives the circle greater definition. You may need to repeat this procedure until you reach the required depth of around 2 to 3 mm.



**Photo. 5**

6. Now set in the smallest inner circles as shown in photo 5. Using carving tool # 4.



**Photo. 6**

7. Select carving tool # 5 & 12 to set in the profiles of the leaf shapes at the bottom and top of the design. This stage can be seen in photo 6.



**Photo. 6**

8. Define the outside leaves by removing the surrounding timber. This process will also define the edge of the border. Use carving tool # 12 for this task. Clearing the waste should be done using two directions of cut. Remember those six techniques, anchor the tool, slide the cut and use the right hand to carve to the right hand side of the side of each leaf and the left hand to carve to the left. You will see in photo 7 how this initially creates a high ridge line as you begin to remove the waste, however, you can then remove the ridge to achieve the final finish.



**Photo. 7**

Carving tool # 1 can also be used to clear the waste in any awkward or confined spaces. Take extra care not to carve over the border line by mistake. It is important that all lines appear crisp and as straight or flowing as possible. Avoid 'awkward elbows' in your lines at all costs!!

9. Next, set in the flower petals with vertical cuts from carving tool #4. This process can be seen in photo 8. Be sure to set in the cuts vertically to the timbers surface. Hold the tool in the pinch position, make sure you anchor and set in the cut with a gentle tap from your mallet.



**Photo. 8**

10. Now it's time to shape the bands to create the essential interwoven pattern. Use carving tool number 1 & 11 for this task. Try to moderate the highs and lows at equal depths, so try not to cut below 2 to 3 mm at the lowest point. See photo 9.



**Photo. 9**

**11.** In photo 10, you can see how the flower petals have been defined with carving tool #4. Then use carving tool # 12 to carefully remove the waste material from the area surrounding each petal. The procedure is the same as that used for the leaf shapes along the border. To define the petals further, make a single cut for each petal, sliding the cutting edge of the carving tool # 4 so that it follows its own radius to form a uniform fan effect. A slicing cut should then be made on the right hand of each incision to give the illusion that the petals are overlapping each other.



**Photo. 10**

**12.** Use carving tool # 4 and take a small scoop out of each petal towards the flowers centre.



**Photo. 11**

**13.** We can now finish shaping the leaves. In Photo 12 you will see how the curved shape of each leaf has been carved down, using carving tool # 5 & 6, towards the perimeter of the larger circles. The centre leaves should then be carved gradually down towards the edges of the smaller circles with carving tool # 4.



**Photo. 12**

**14.** It's time to add more detail to the design as shown in photo 13. You can use a compass for accurate marking, but avoid pressing too hard or you will risk marking the work with the point of your compass.



**Photo. 13**

Take time now to round over the berries in the centre of the design. Use tool # 1 & 4 for this process.

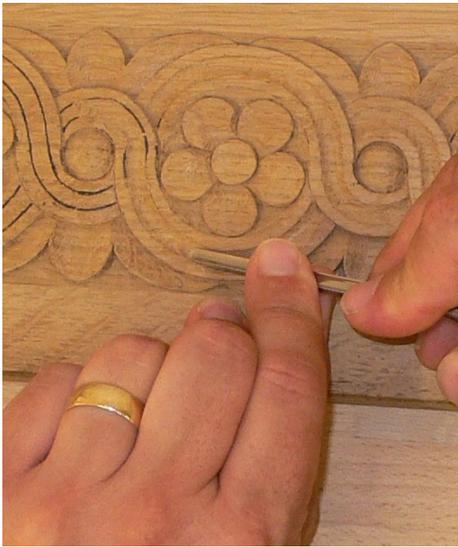
**15.** With tool ref # 5 you can take a small scoop from the centre of the flower, creating a dished effect. Take this opportunity to remove any marks left by the compass.



**Photo. 14**

**16.** Following your pencil lines, and create a channel into each band using carving tool # 2. These channels enhance the interwoven effect as shown in photo 15. Try to keep the ridge lines as clean and flowing as possible without forming any unwanted 'elbows'.

Remember to slide your carving tool to maximise the effectiveness of the cutting edge. This is especially relevant at this stage as you will unavoidably meet areas of awkward grain.



**Photo. 15**

**17.** To add the finishing touches, use carving tool # 8 to form small veins on each flower petal. You can use tool # 1 for the V in the centre leaves of the boarder decoration. **See photo 16.**

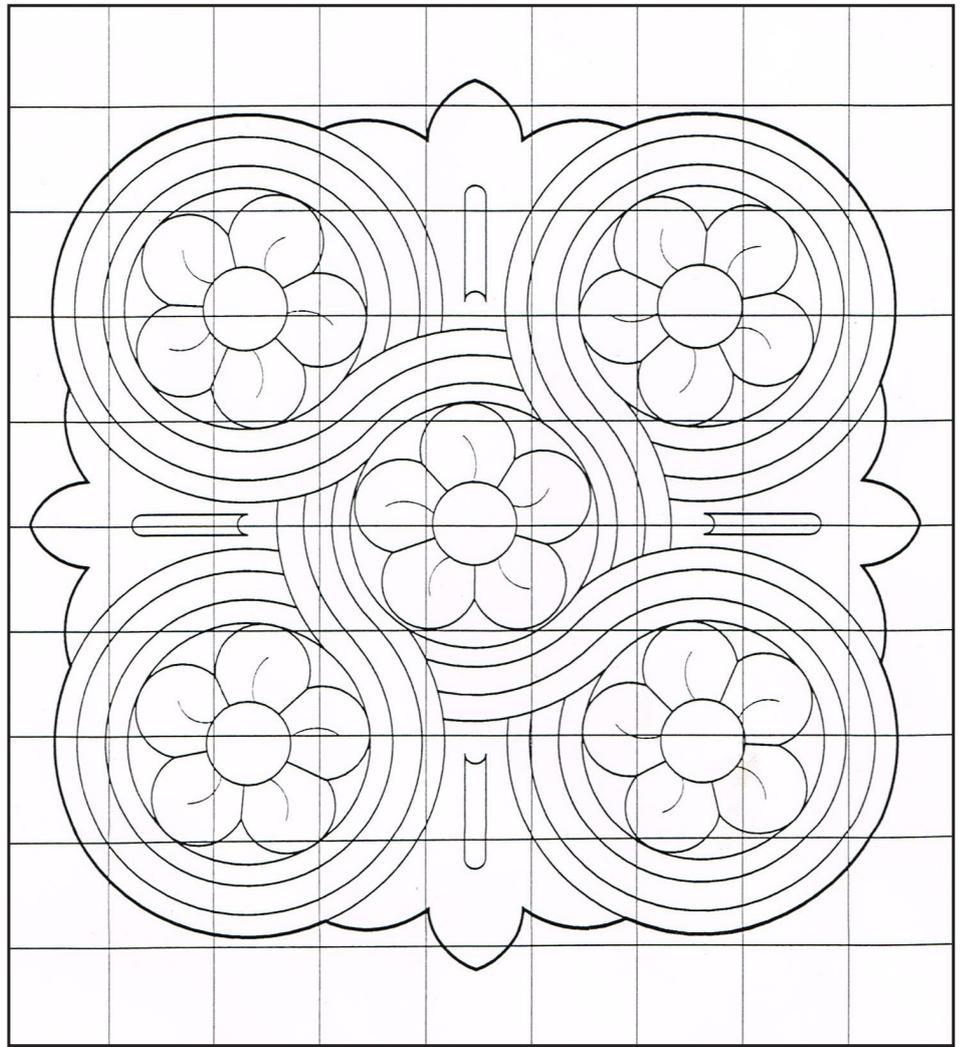


**Photo. 16**

**18.** It may be necessary to give the work a light sanding to remove pencil marks. However, leaving a few remaining tool marks may give the project a more authentic look as carvings from this period were relatively unsophisticated.

Once you have tried this design for rails, why not give the panel project a go as detailed in figure 2. Simply recreate the drawing so that each square of the grid measures precisely 20mm.

Design ideas: Try an 'Image' search in your internet search engine for 'Celtic Patterns' and you will find many great design ideas!!



**Figure. 2**

### 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.