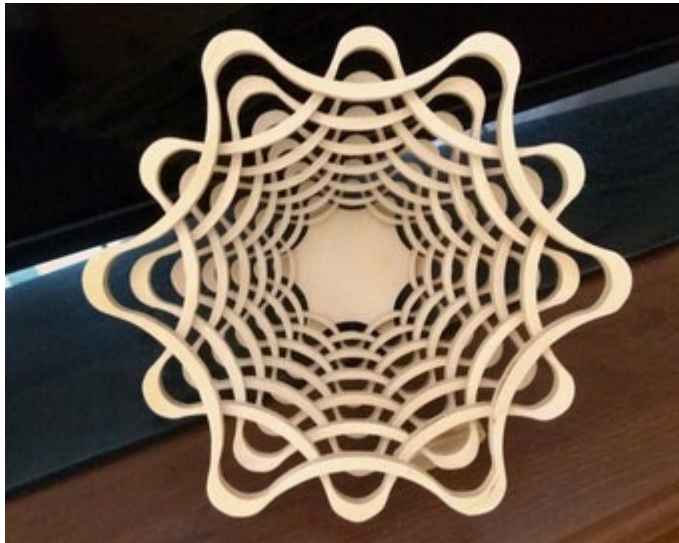


# Scroll Saw Fretwork Bowls

## Making and Customizing

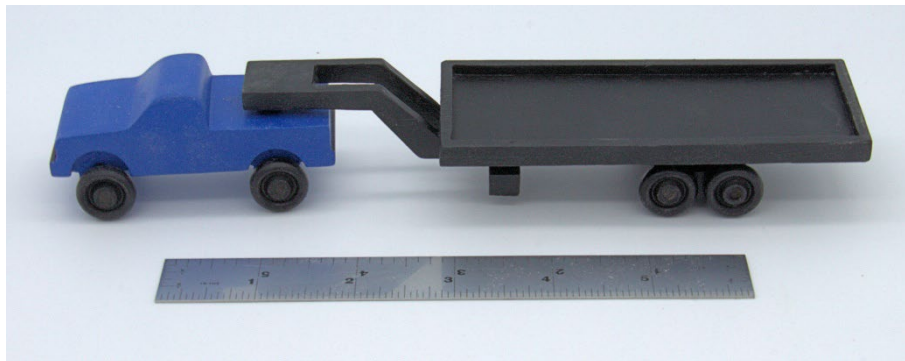


Presented by  
Patrick Crawford

It all began with a Christmas present from my wife...

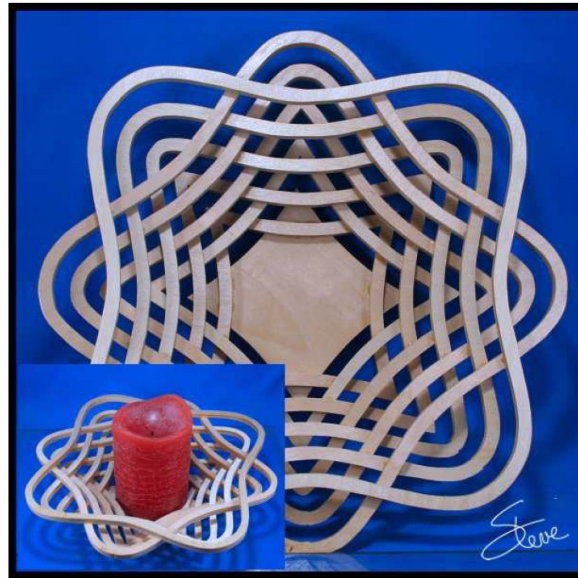


# Trying new projects



While looking for new projects...

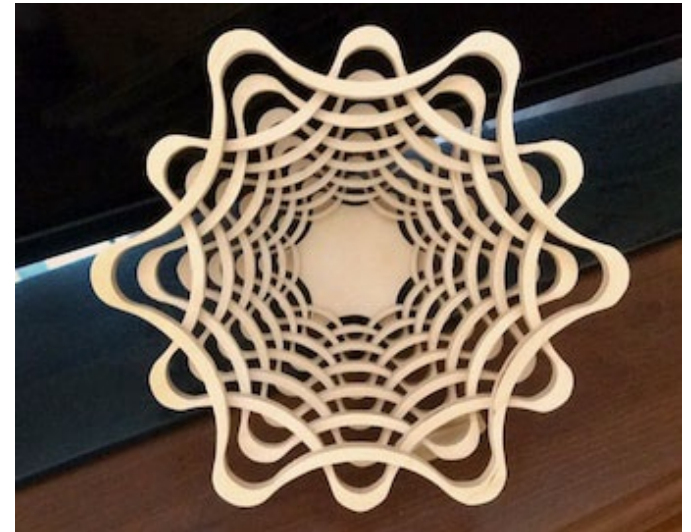
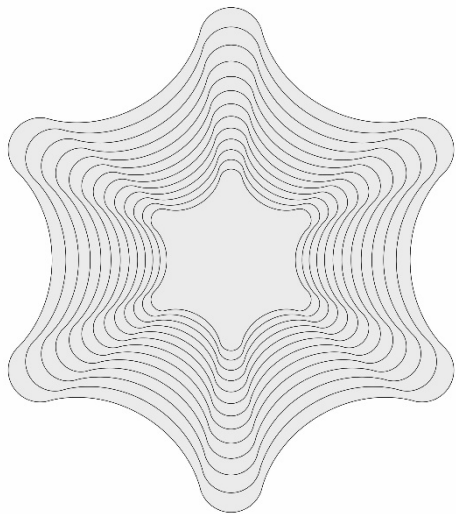
Came across the pattern for this bowl and instructions on how to make it.



Leading me on a search for similar patterns.

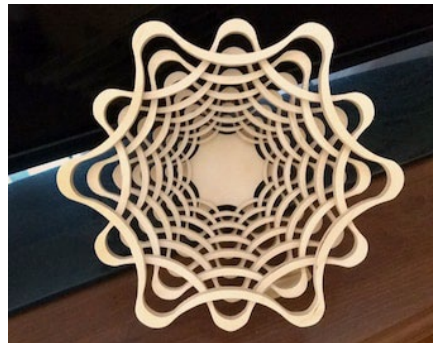
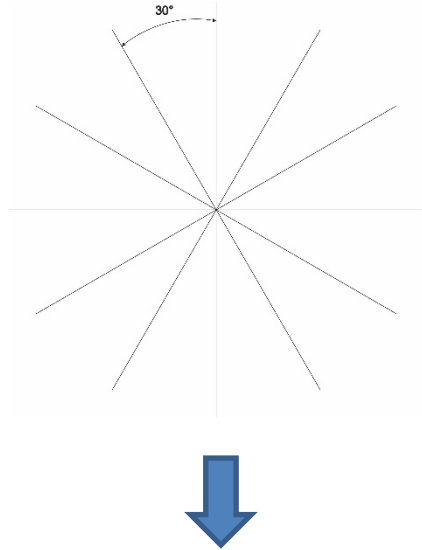
# What are scroll saw fretwork bowls?

Bowls made up of stacked concentric rings cut out using a scroll saw

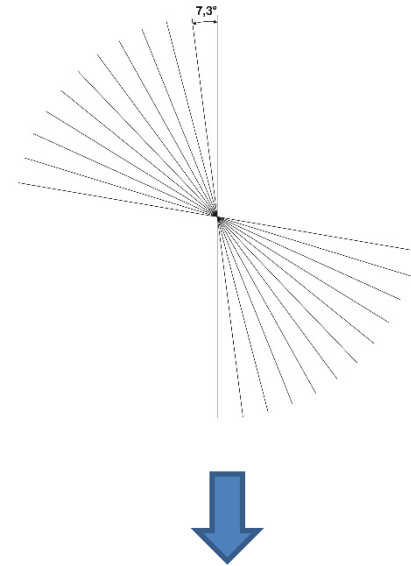


# Two Basic Styles

## Alternating Layers



## Spiral Layers



# Always work safely

- Dust mask or respirator
- Safety glasses (magnification is optional)



# Basic Process - 1

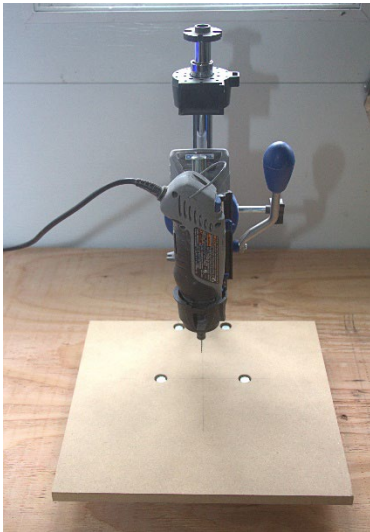
- Sand top and bottom of board to 220 grit
- Cover the board with painters tape
- Fasten pattern to the board with glue stick or spray adhesive (e.g., 3M Super 77)
- Drill blade access holes using a #60 or #68 micro-drill bit
- Cut out the layers using a 2/0, 1, or 3 scroll saw blade



# Using Micro-Drill Bits

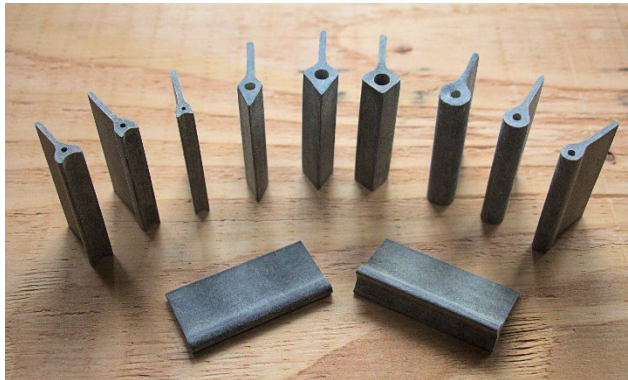


#68 vs. 1/16"



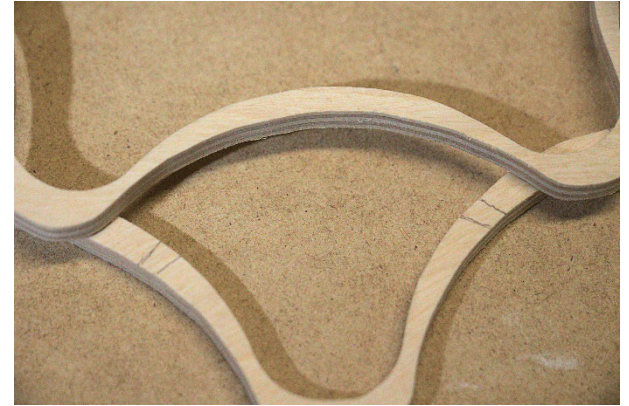
# Basic Process - 2

- Smooth and sand the edges of all the layers to at least 220 grit
- Contour sanding grips and micro-files help



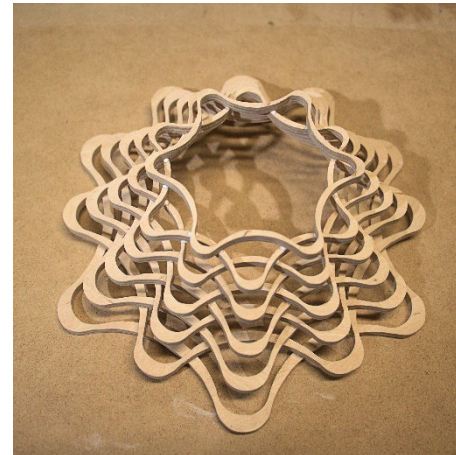
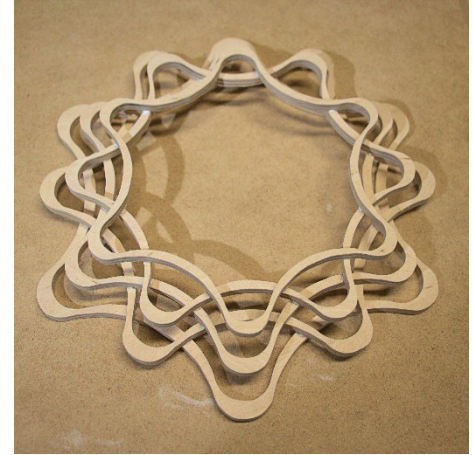
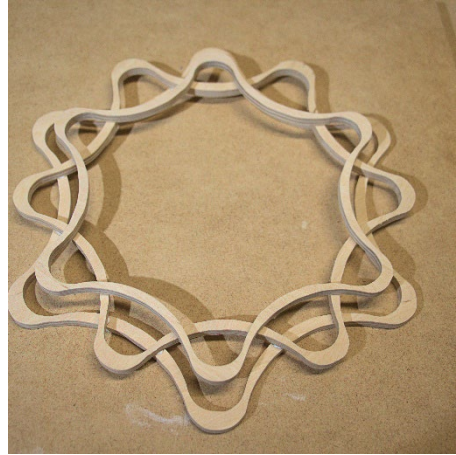
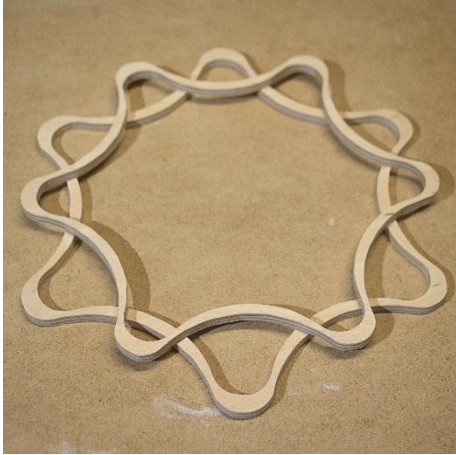
# Basic Process - 3

- Start with the top layer
- Set next layer in desired position and mark areas to be glued

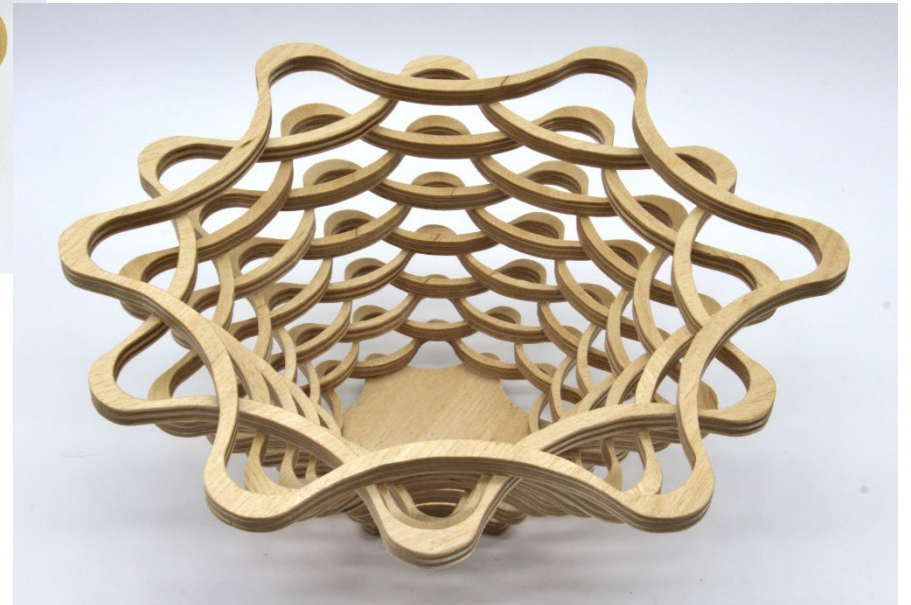
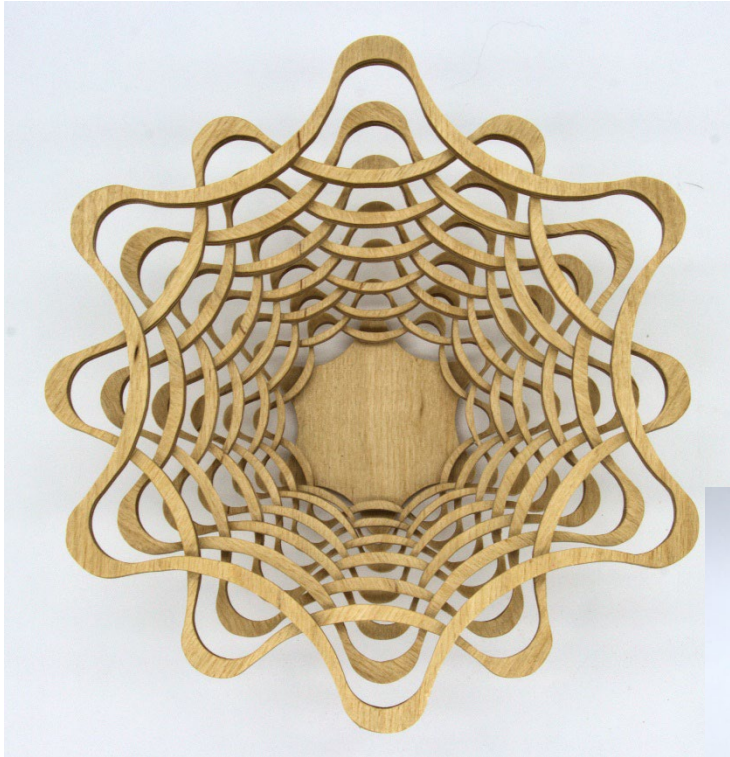


- Apply Weldbond glue to marked areas and set the next layer in place
- Repeat for remaining layers

# Basic Process - 4



# The Finished Bowl





# My Initial Impressions

## Issues

- Look pretty but need some colour
- 8" x 8" is too small to be useful

## Potential Solutions

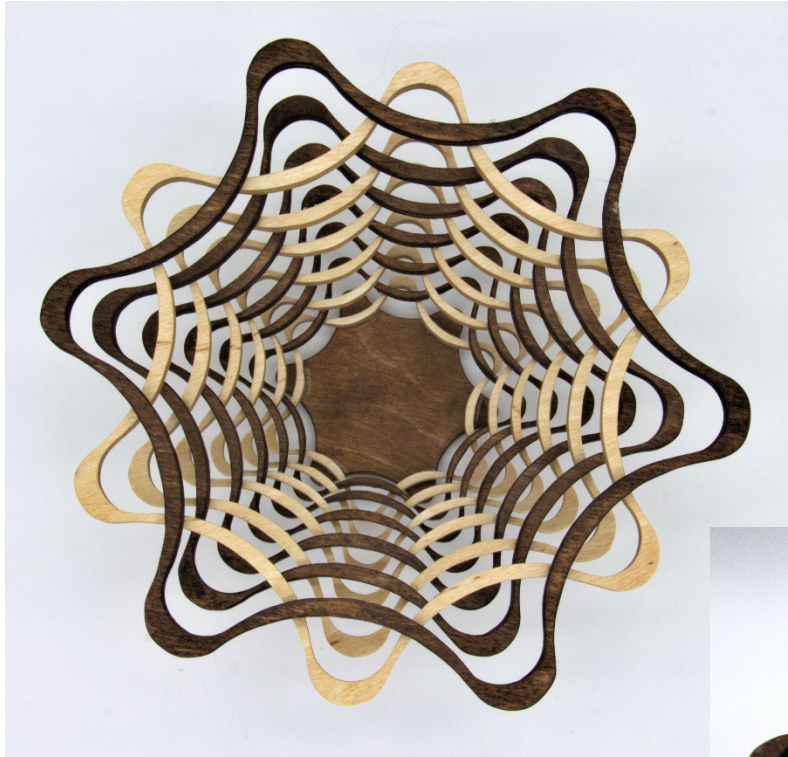
- Stain some rings different colours
- Use different coloured woods
- Increase the size of the bowls

A vertical strip on the left side of the slide shows a close-up of a wood grain. The wood has a warm, brownish-orange hue. A faint, thin, dark circular line is visible, tracing a path across the wood grain, possibly indicating a specific technique or a mark made during an experiment.

# Experiment 1

- Stain of every second ring
- Could also use different coloured craft MDF plywood or hard woods for alternating rings
- Won't work for spiral bowls

# Experiment 1 Finished Bowl

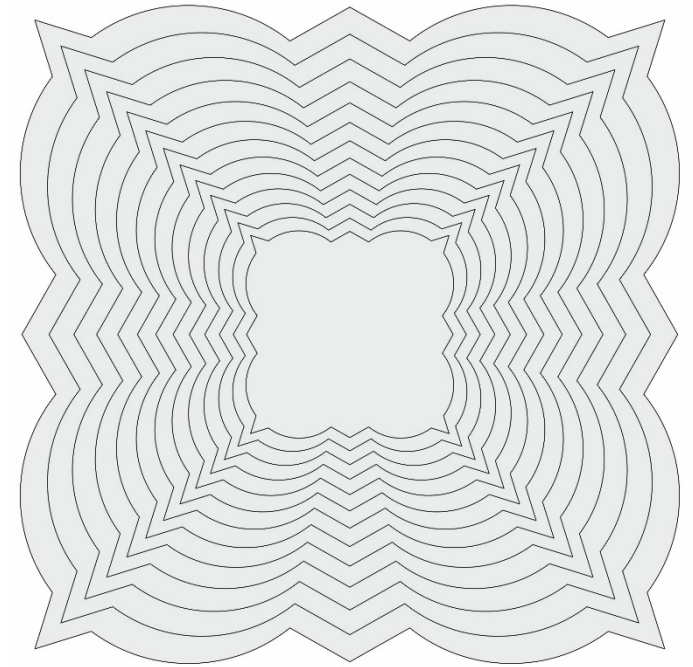
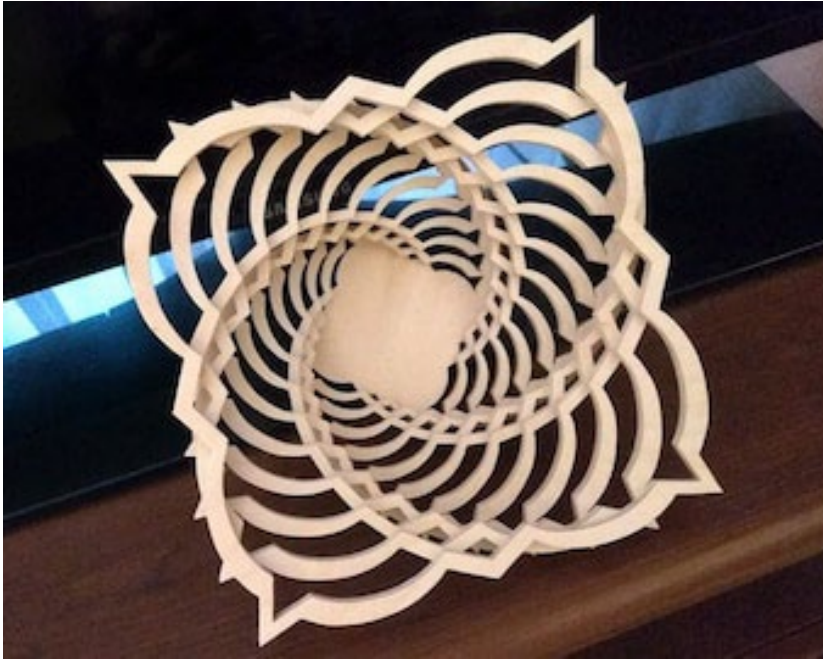




# Experiment 2

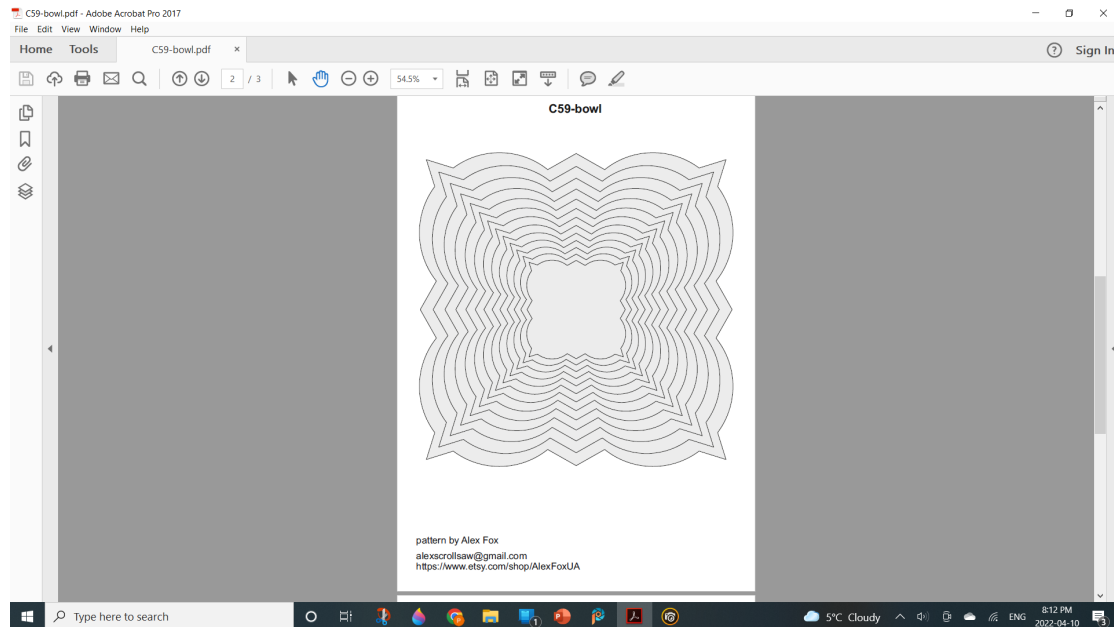
- Make a spirally layered bowl with four sections of alternating colours using 1"x 6" S4S hardwood lumber
- Layers need to be wider due to potential weakness of glued joints
- Bowl needs to be larger to make the bowl proportional to the wider rings

# Experiment 2 Pattern



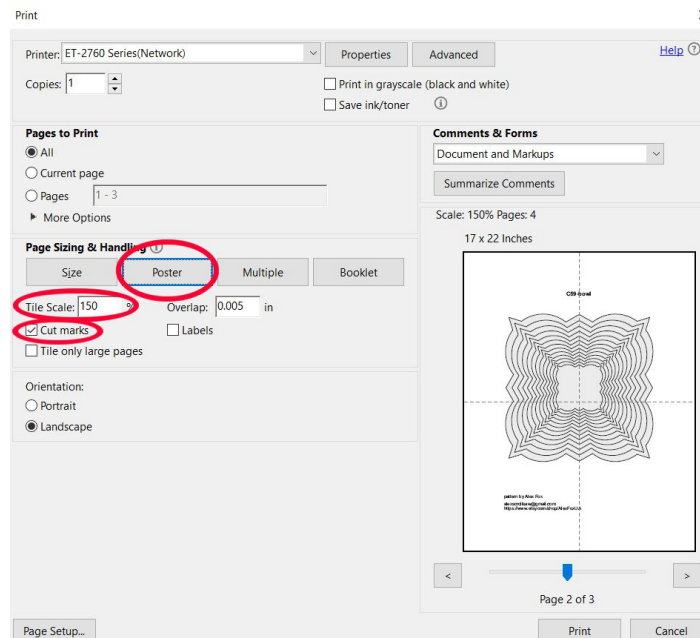
# Printing a Larger Pattern - 1

Use a PDF version of the pattern and print using Adobe Acrobat

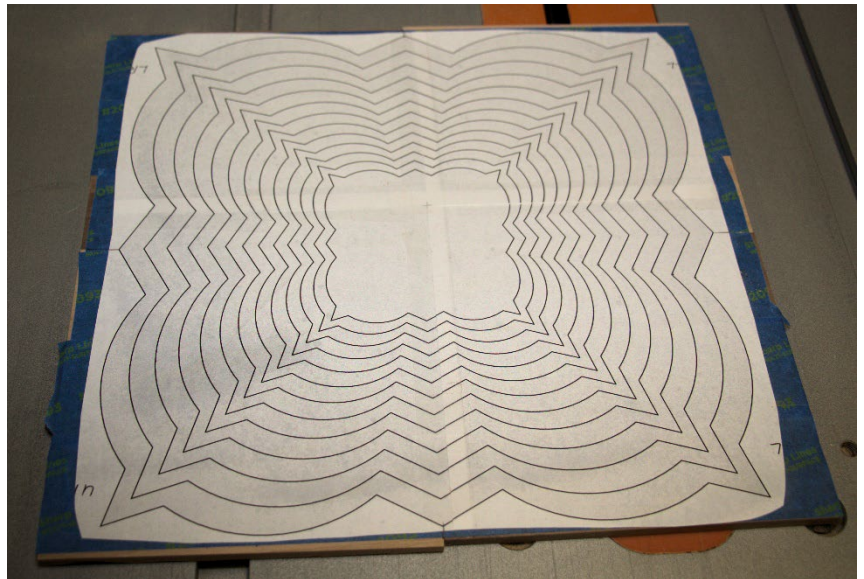
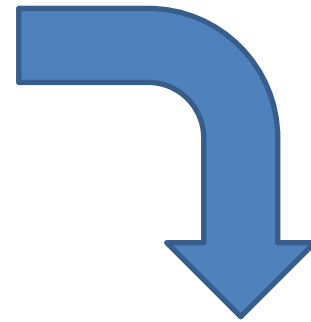
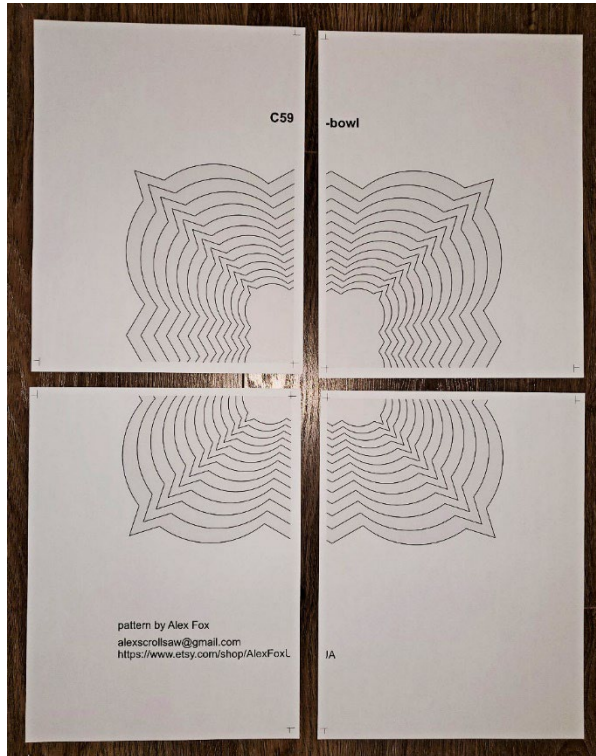


# Printing a Larger Pattern - 2

- Click on 'Poster' to print pattern over multiple pages
- Set 'Tile Scale' to get wanted pattern size
- Click on 'Cut Marks' to get marks to needed to help join pages together

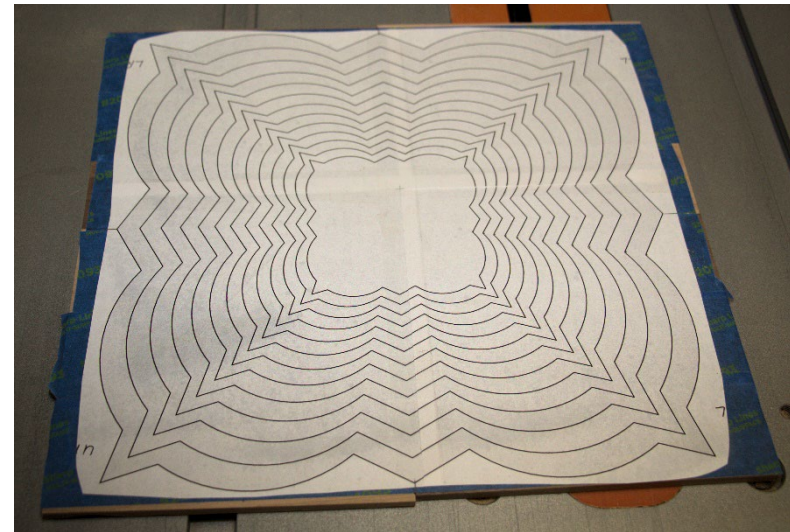


# Align and Tape the Pieces Together

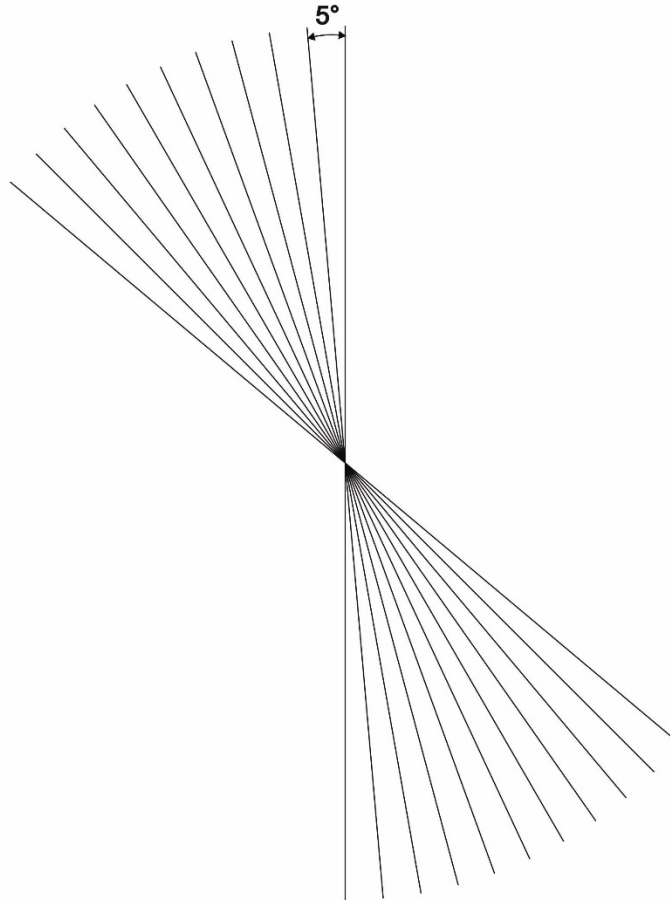


# Experiment 2 Wood Blank

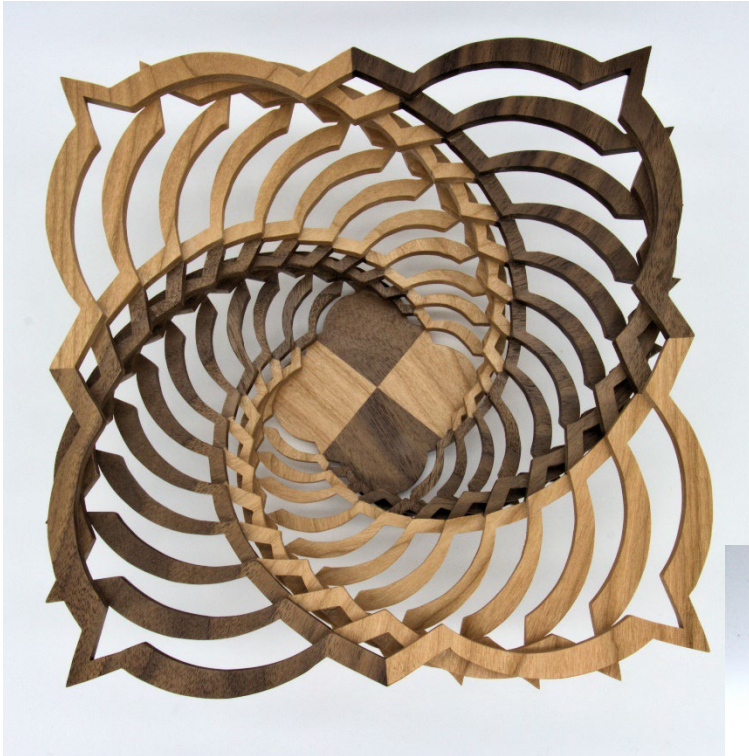
Made up of 4 squares of  $\frac{1}{4}$ " thick cherry and walnut



# Experiment 2 Gluing Pattern



# Experiment 2 Finished Bowl



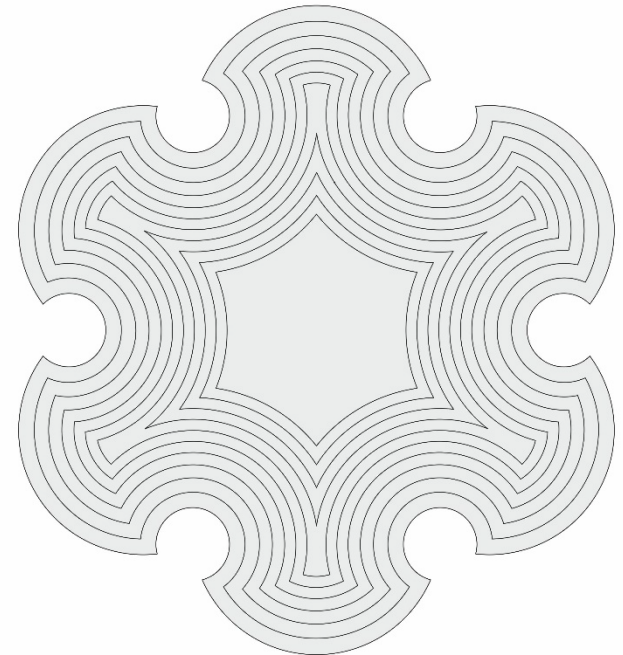


# Experiment 3

- Make a spirally layered bowl with sections of alternating colours using 1"x 6" S4S hardwood lumber
- Layers need to be wider due to potential weakness of glued joints
- Bowl needs to be larger to make the bowl proportional to the wider rings

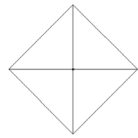
# Experiment 3 Pattern

To be made up of 6 segments of alternating cherry and walnut

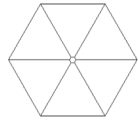


# Calculating Segment Size - 1

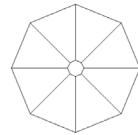
360 degrees ÷ # of segments = degrees



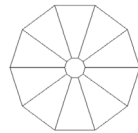
4 segments – 90°



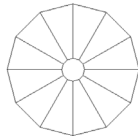
6 segments – 60°



8 segments – 45°



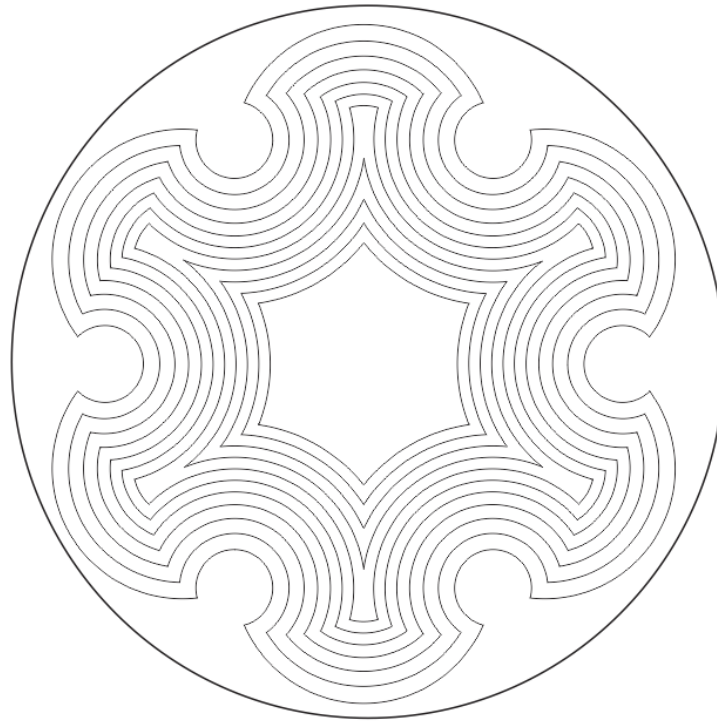
10 segments – 36°



12 segments – 30°

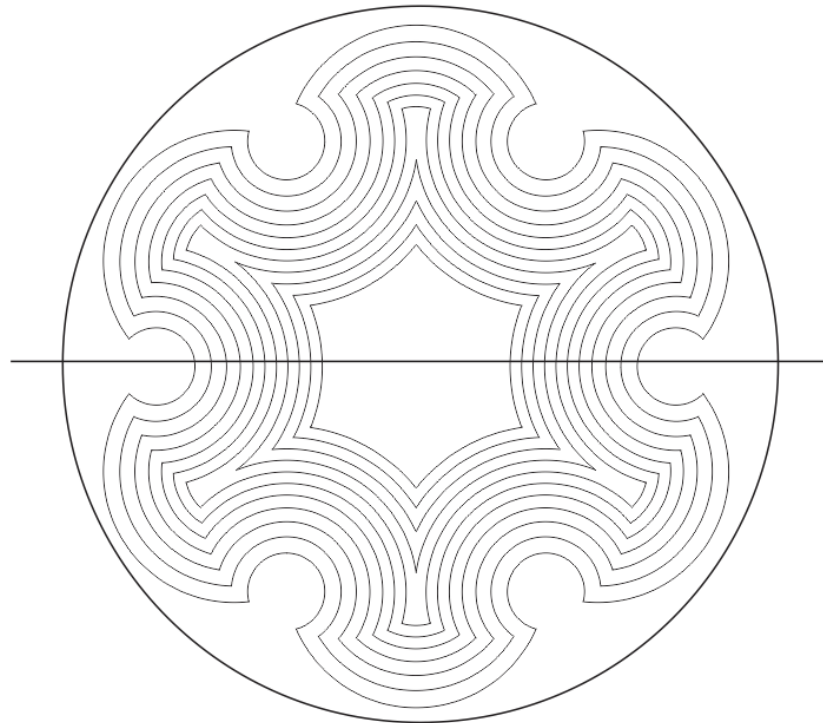
# Calculating Segment Size - 2

Draw a circle around the pattern, about 1" larger than the widest part of the pattern



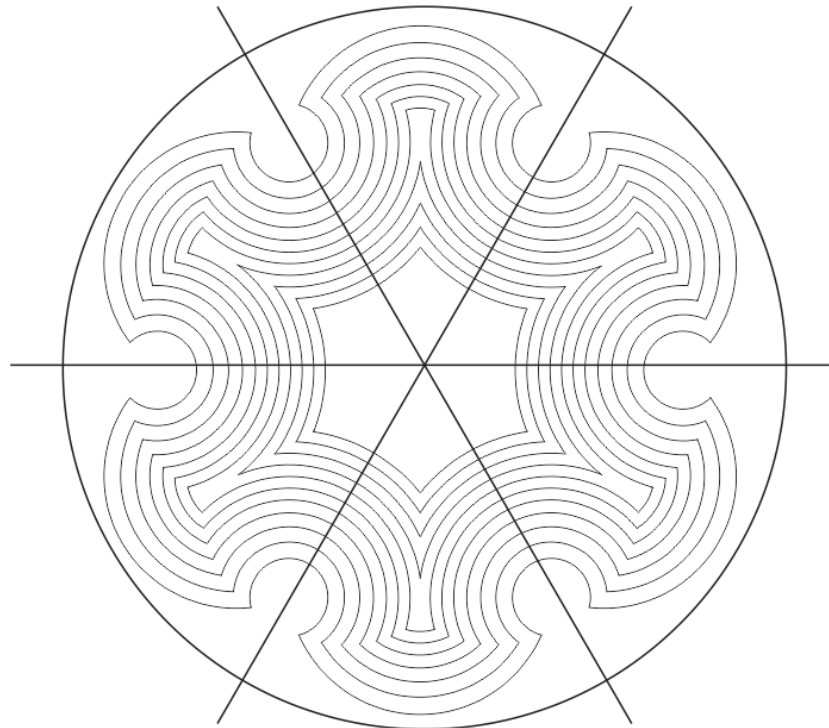
# Calculating Segment Size - 3

Draw a line straight through the centre of the circle along where segments will join



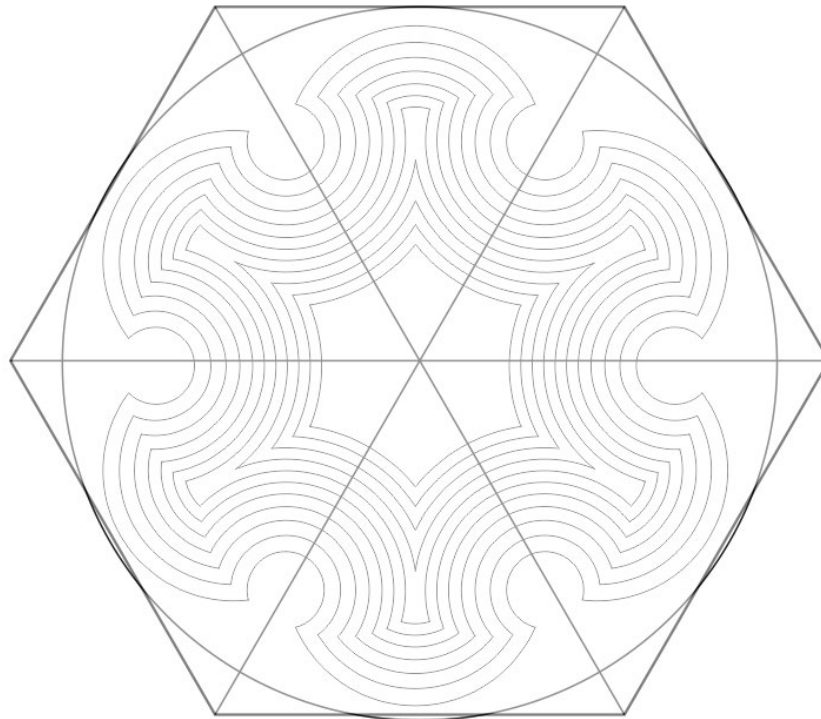
# Calculating Segment Size - 4

Using a protractor mark  $60^\circ$  and  $120^\circ$  on one side of the line and using these marks draw lines across the circle



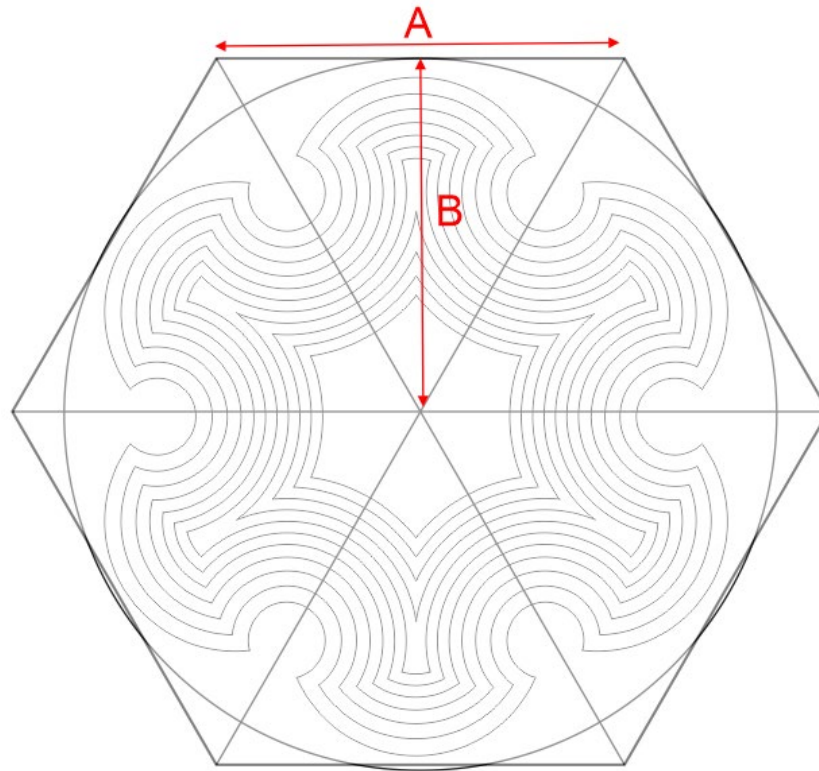
# Calculating Segment Size – 5

Draw tangents between the segment lines to form an evenly spaced hexagon around the pattern



# Calculating Segment Size - 5

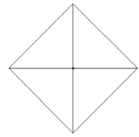
- A – Segment edge length
- B – Board width



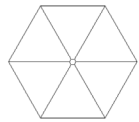


# Calculating Cutting Angle

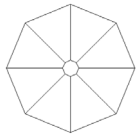
$$\text{Cutting Angle} = 360^\circ \div \# \text{ of segments} \div 2$$



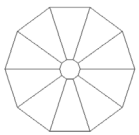
4 segments –  $45^\circ$



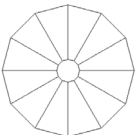
6 segments –  $30^\circ$



8 segments –  $22.5^\circ$



10 segments –  $18^\circ$



12 segments –  $15^\circ$

# Segment Size and Angle Using 'Segmented Project Planner'

Segmented Project Planner\*

File Edit View/Select Calculate Help

Project File: C:\Users\Owner\Documents\SPP\Projects\Hexagonal Scroll Saw  
Saw Width: 1/8" Cutting Mode: Economy  
Cutting Accuracy: 1/32" Grain Matching  
Glue-Up Tolerance: 1/8" Units: English, in., fractional

Lyr	Sides	Layer Height	Outer Diameter	Wall Thickness	Gap Width	Gap Count	Gap Material	Side Incline	Stagger	Material Thickness	Miter Angle	Blade Tilt	Edge Length	Board Length	Board Width	Glue Diam
1	6	1/4"	11"	4-1/4"						3/4"	30.000°		6-1/2"	39-3/4"	5-11/32"	1
2																

Display Type >> Project Outline Project Detail Current Ring Local Rings

Print Cookie Log

Solid Color Paint Ring Open Project

Seg Design Paint All Save Project

Seg Image Paint Bckgrnd New Project

Split Layer Clear Ring Preferences

Combine Lyr Clear All Turning Rpt.

Substitute Exit

Current Color

Layer 1 Side View Top View

Proj. Hgt.: 1/4" Proj. Cost: \$0.00 Min. Wall: 4-1/4" Min. Lyr.: 1 Displaying Project

Type here to search 7°C Mostly cloudy 11:03 AM 2022-04-05

# Printing the 'Cut Report'

## Segmented Project Planner - Project Details

Saw Width: 1/8"  
 Cutting Accuracy: 1/32"  
 Glue Up Tolerance: 1/8"

New  
 C:\Users\Owner\Documents\SFP\Projects\Hexagonal Scroll Saw Fretwork Bowl.spr

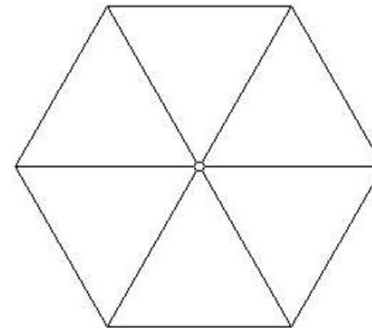
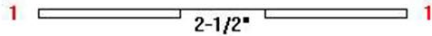
2022-04-05 11:05:49 AM  
 Cutting Mode: Grain Match  
 Units: English, in., fractional

Layer	Sides	Material Color	Qty	Layer Height	Outer Diameter	Wall Thickness	Side Incline F.A.G.	Material Thickness	Miter Angle	Blade Tilt	Edge Length	Board Length	Board Width	GlueUp Diameter	Board Foot Cost	Ring Cost
1	6		6	1/4"	11"	4-1/4"		3/4"	30.000°		6-1/2"	139-21/32"	5-11/32"	13"	\$0.00	\$0.00

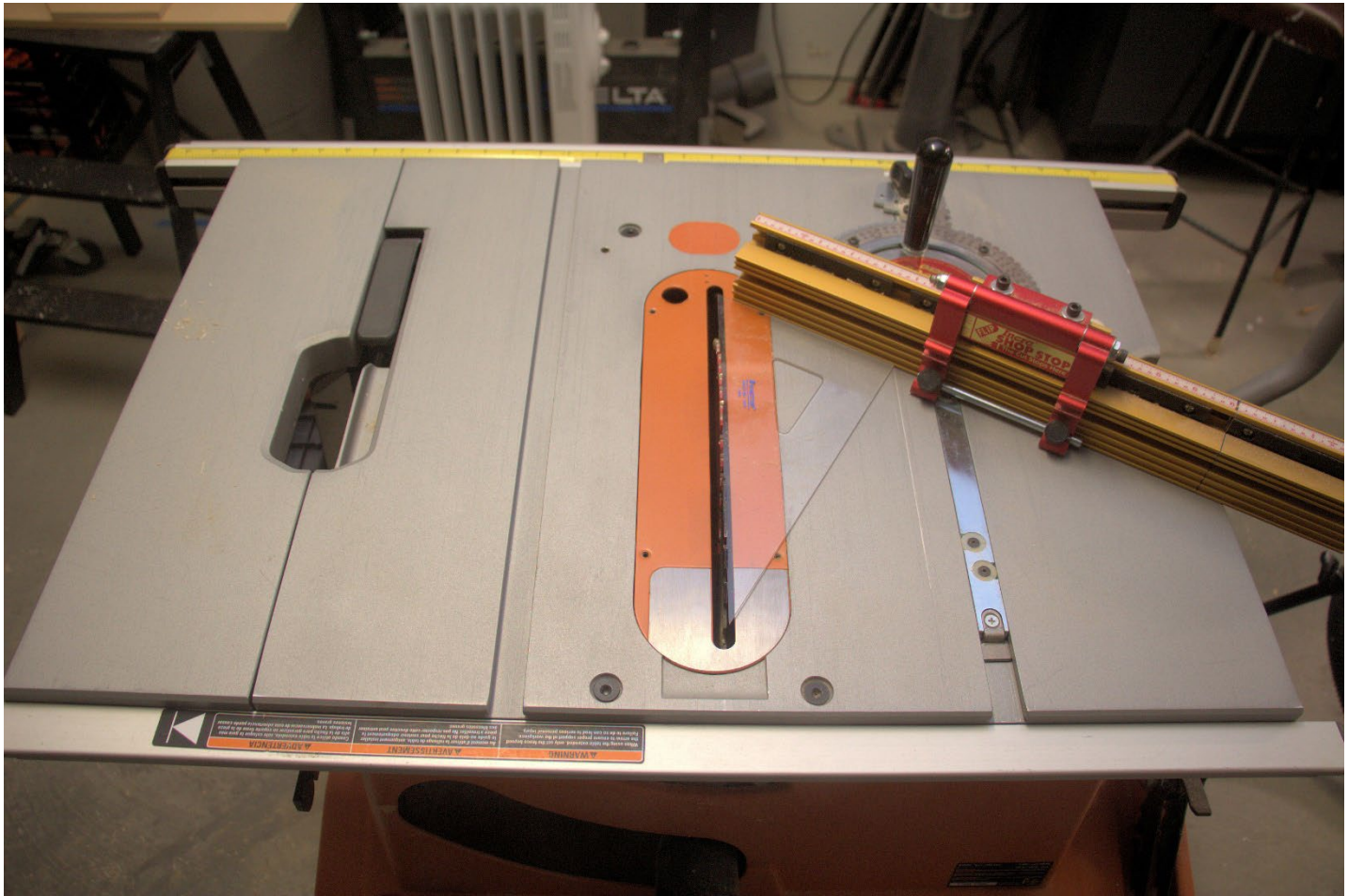
Project Height 1/4"

Material Cost \$0.00

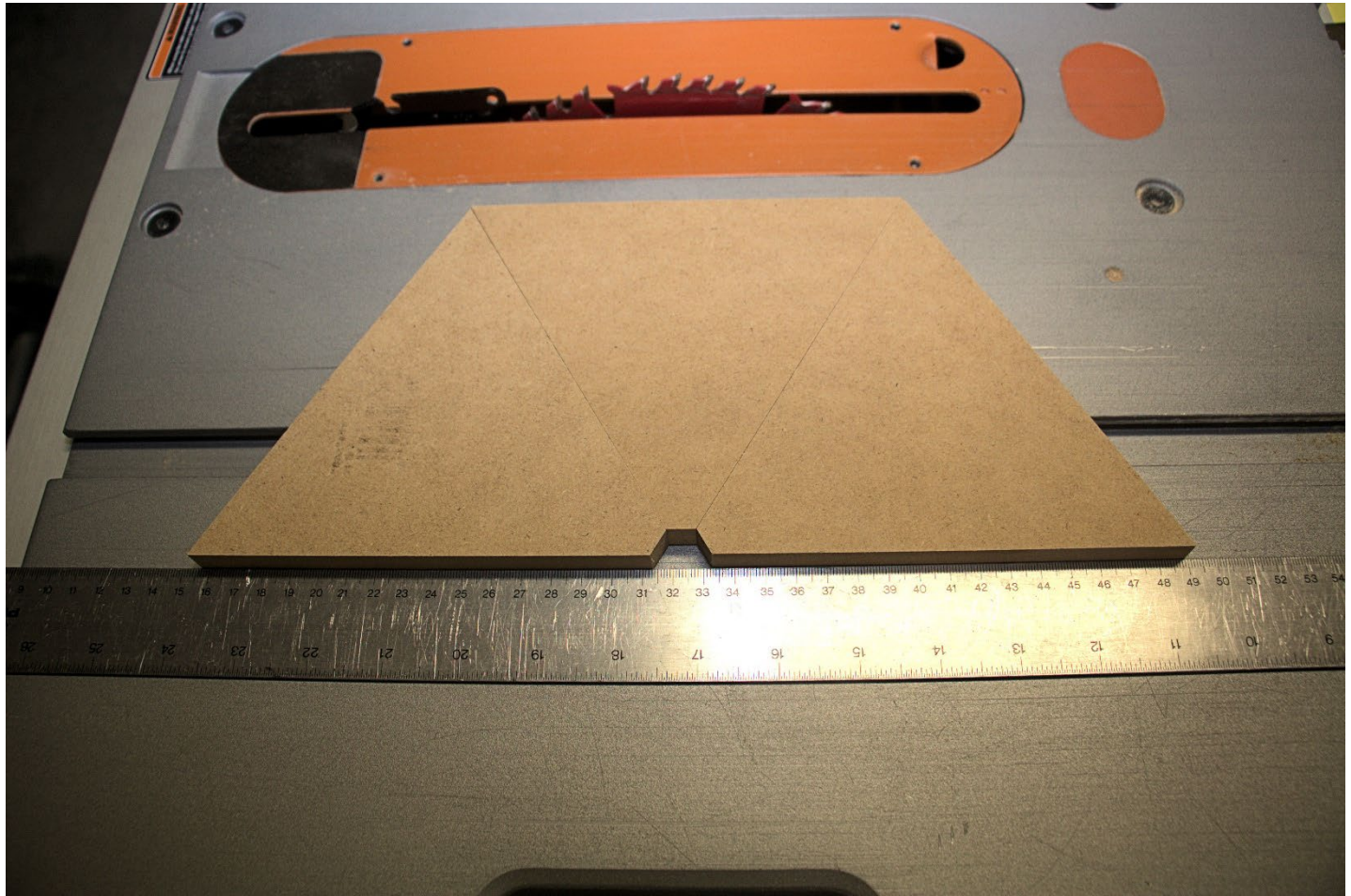
No Jaw Set available for project bottom layer



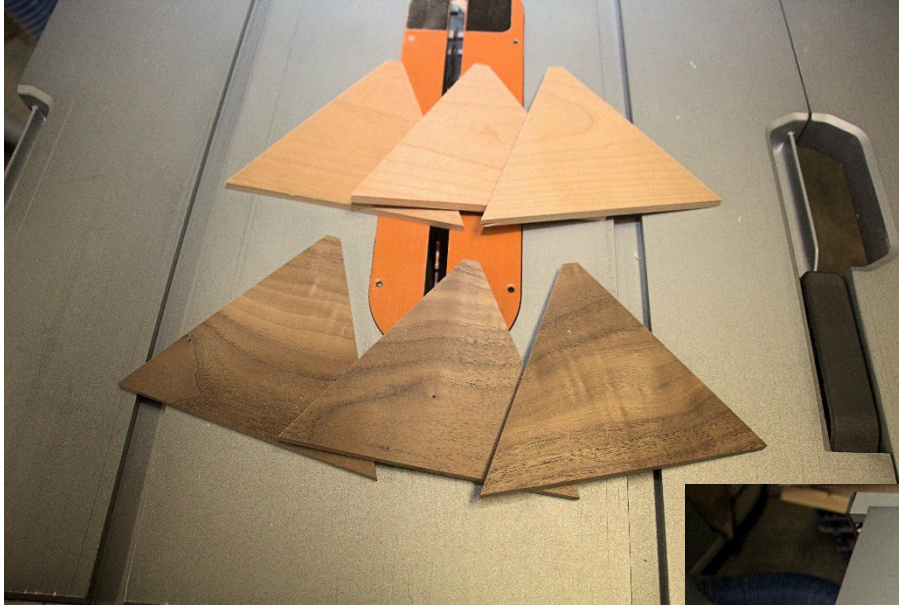
# Experiment 3 – Setting the 30° Cutting Angle



# Experiment 3 – Checking the Cutting Angle



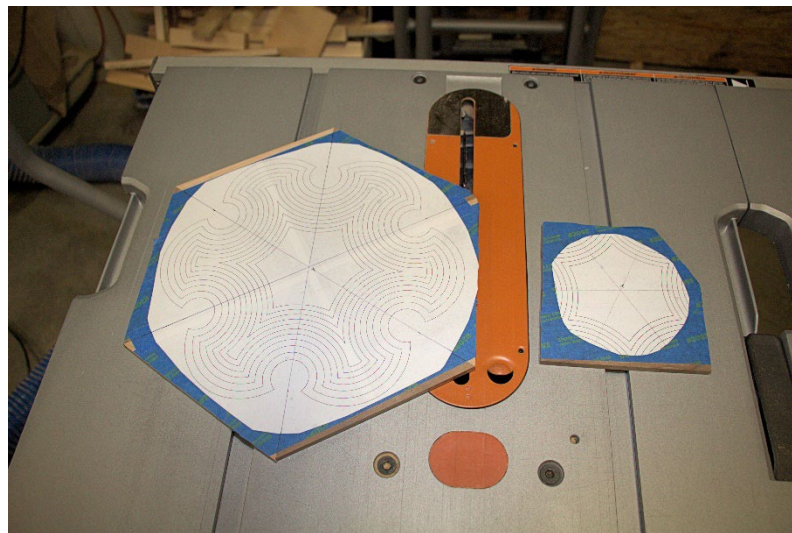
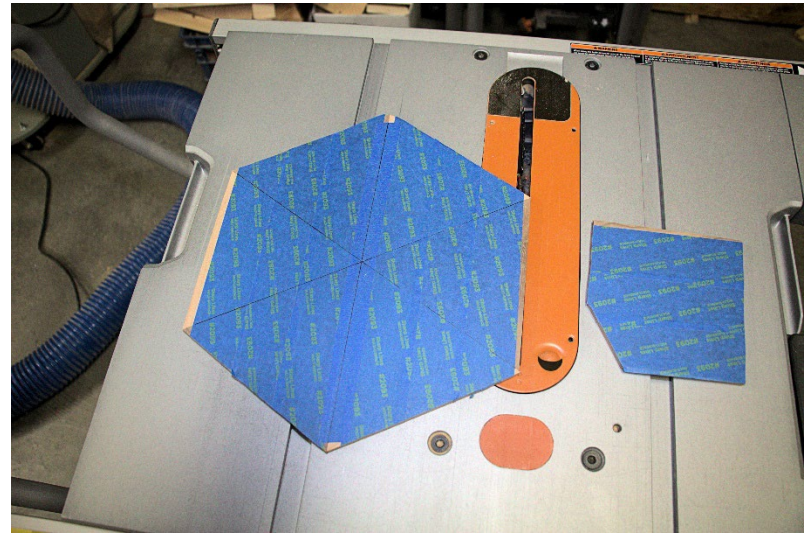
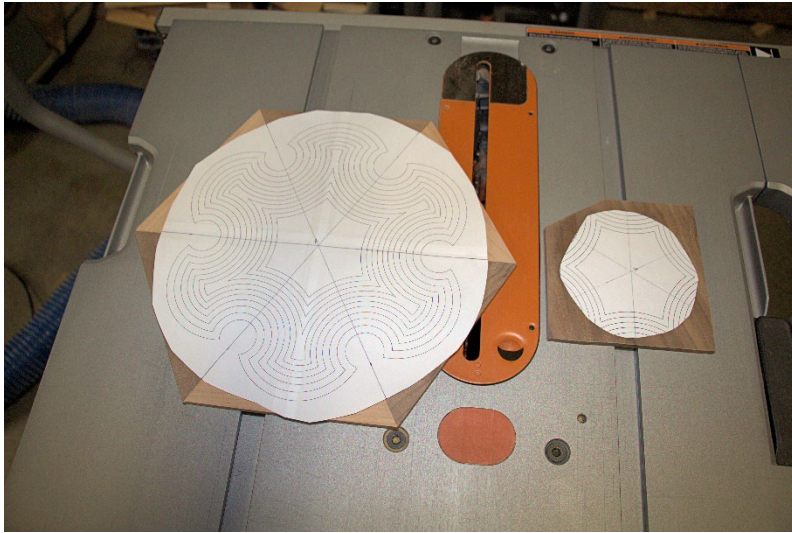
# Experiment 3 – Cutting the Segments



# Experiment 3 – Glue Up

- Glue the blank together in two halves and let dry
- Sand top and bottom of both halves completely smooth
- If needed, use a 12” disk sander to square the edges of both halves
- Glue both halves together and let dry
- Sand the top and bottom smooth

# Experiment 3 – Pattern Alignment

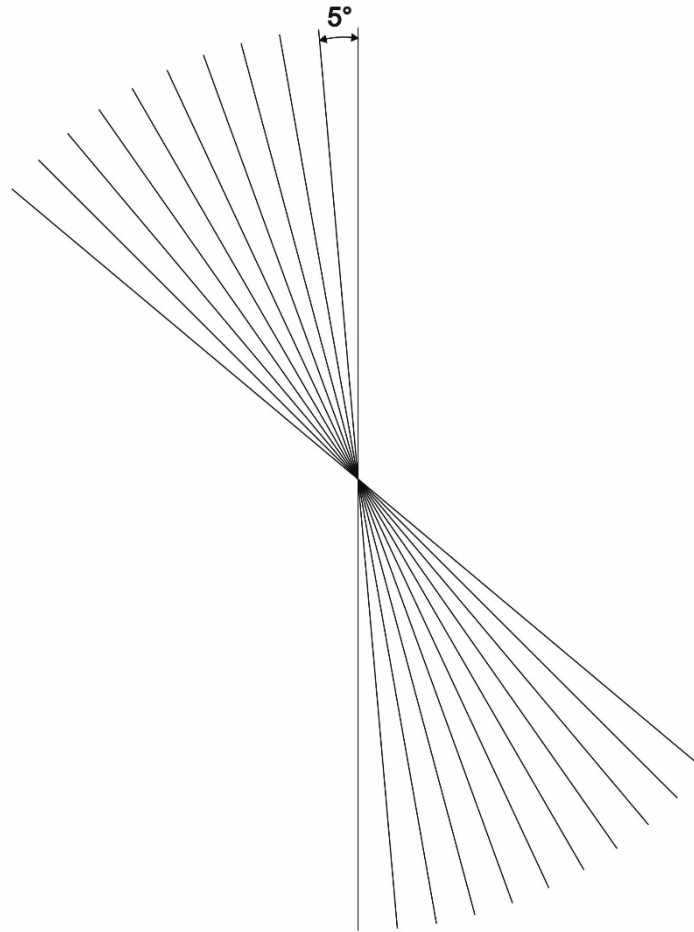




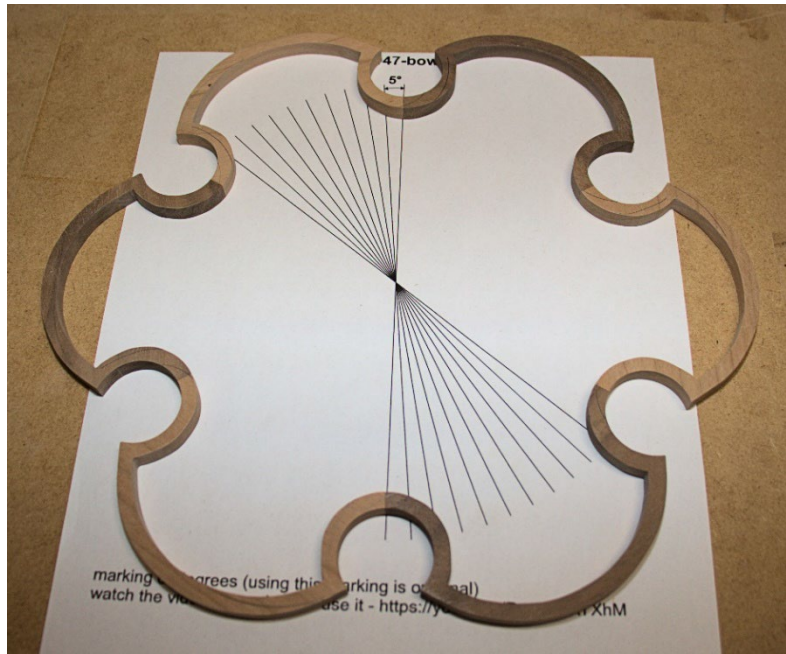
# Experiment 3 – Cutting Complete



# Experiment 3 – Cutting Pattern



# Experiment 3 - Assembly

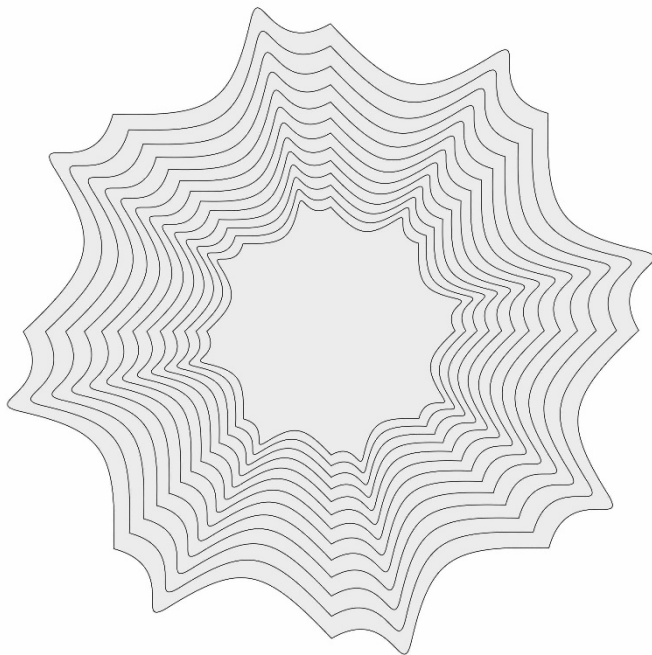


# Experiment 3 – Finished Bowl



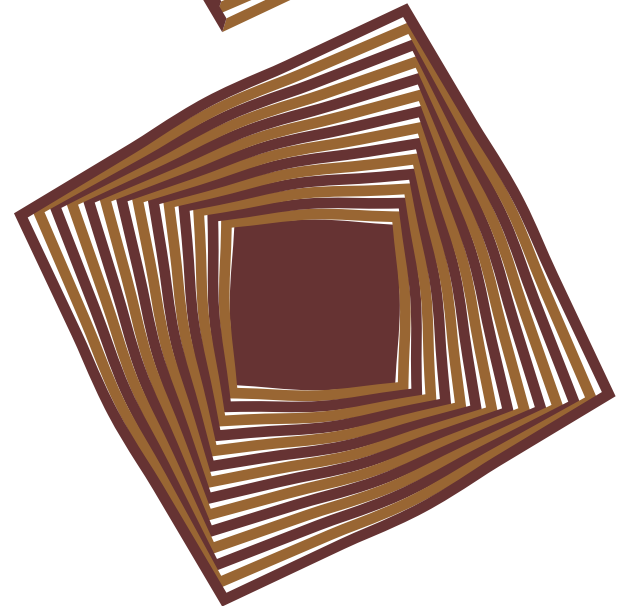
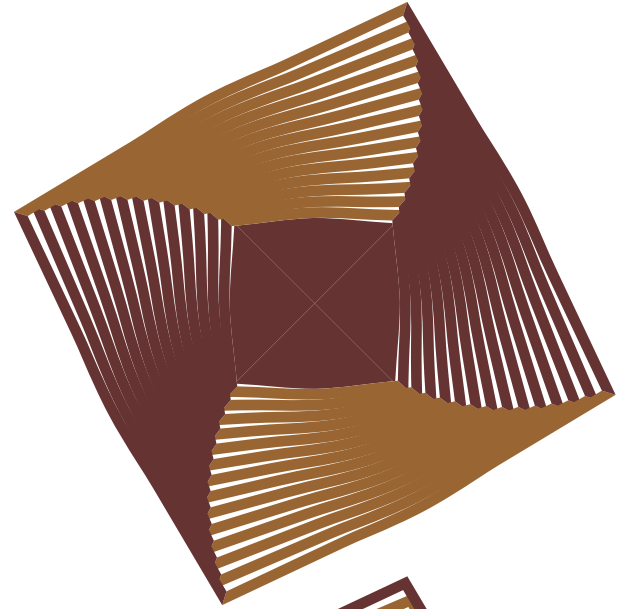
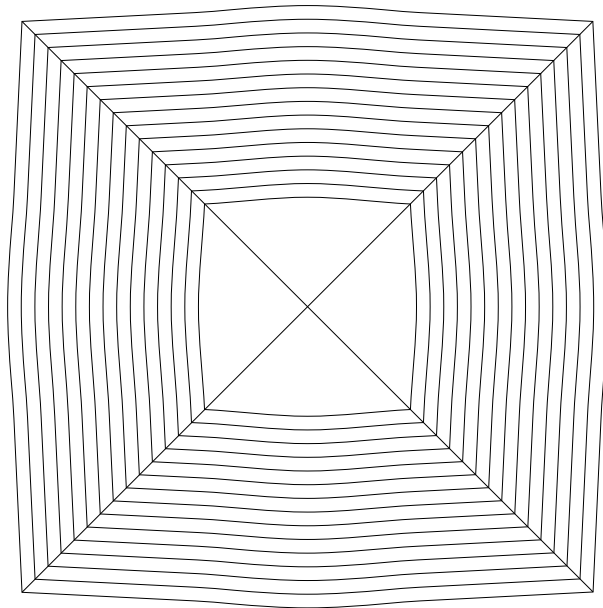
# Ideas For The Future? - 1

Octagonal bowl composed of alternating light and dark hardwoods



# Ideas For The Future? - 2

My own designs



# Ideas For The Future? - 3

Scroll sawed rim and/or bowl bottom



# Ideas For The Future? - 4

## Pendant Lamp





# Ideas For The Future? – 5

Glass top coffee table





# Favourite Resources

- [Steve Good Scroll Saw Workshop Pattern Catalog](#)
  - Excellent source of free scroll saw patterns including 5 fretwork bowls
- [Alex Fox UA](#)
  - Excellent source of scroll saw patterns including 16 fretwork bowls
- [Bear Woods](#)
  - Excellent source of scroll saw supplies (e.g., blades and microdrills) and high end scroll saws
- [Pinterest](#)
  - Excellent source of ideas for all types of woodworking

# Questions

???