

## PolyDraw Tutorial VI

### Making a Morphed Basket

In the previous five tutorials you have learned how to make bowls of different sizes and shapes. You even learned how to add ripples and how to morph. Morphing for baskets is easier than morphing bowls. The rings are glued in a wicker fashion so the bottom of a top ring does not have to perfectly match the top of the ring below it.

This design will be a five layer basket that starts at the top as a 10½“ circle and morphs to a square at the base. The sides will taper at 7/16” per layer while the corners will taper by ¼“ per layer. The dimensions of the outside of each ring are shown in the table below.

		Side Radius	Corner Radius
1 <sup>st</sup> ring	Outside	5.2500	5.2500
2 <sup>nd</sup> ring	Outside	4.8125	5.0000
3 <sup>rd</sup> ring	Outside	4.3750	4.7500
4 <sup>th</sup> ring	Outside	3.9375	4.5000
	Base	3.5000	4.2500

This is the first example where each ring has two cuts. Before the inside on one ring was the outside of the other. This means that a 5 layer basket will take nine 9 Polys or almost twice the cutting time. The rings have a uniform width of 7/32”. These new dimensions are shown below.’

		Side Radius	Corner Radius
1 <sup>st</sup> ring	Outside	5.2500	5.2500
	Inside	5.0313	5.0313
2 <sup>nd</sup> ring	Outside	4.8125	5.0000
	Inside	4.5938	4.7813
3 <sup>rd</sup> ring	Outside	4.3750	4.7500
	Inside	4.1563	4.5313
4 <sup>th</sup> ring	Outside	3.9375	4.5000
	Inside	3.7188	4.2813
	Base	3.5000	4.2500

With these dimensions you can calculate the Poly Order for each. Using PolyAnalyze calculate the Ploy Order for each poly. They are shown in the table below.

		Side Radius	Corner Radius	Poly Order
1 <sup>st</sup> ring	Outside	5.2500	5.2500	2.000
	Inside	5.0313	5.0313	2.000
2 <sup>nd</sup> ring	Outside	4.8125	5.0000	2.248
	Inside	4.5938	4.7813	2.261
3 <sup>rd</sup> ring	Outside	4.3750	4.7500	2.622
	Inside	4.1563	4.5313	2.664
4 <sup>th</sup> ring	Outside	3.9375	4.5000	3.254
	Inside	3.7188	4.2813	3.369
	Base	3.5000	4.2500	4.548

Open PolyDraw and enter all these values as shown below and click the **Draw** button to draw your pattern.

Load Save

Draw

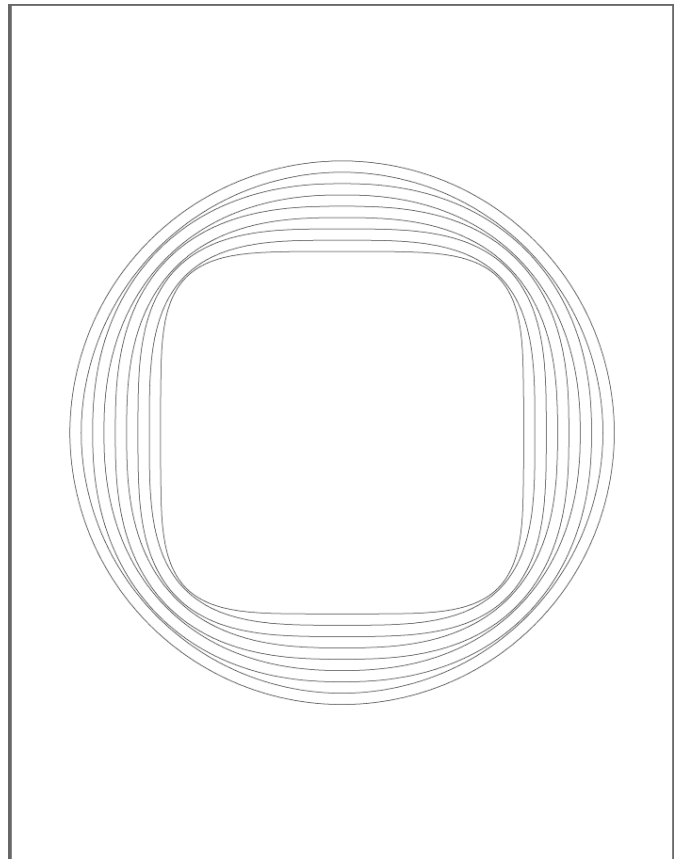
Scale 0.667

# of Polys 9

X Radius	Y Radius	Poly Order	# of Waves	+/-Wave Amplitude	X Offset	Y Offset
5.2500	5.2500	2.000	0	0.0000	0.0000	0.0000
5.0313	5.0313	2.000	0	0.0000	0.0000	0.0000
4.8125	4.8125	2.248	0	0.0000	0.0000	0.0000
4.5938	4.5938	2.261	0	0.0000	0.0000	0.0000
4.3750	4.3750	2.622	0	0.0000	0.0000	0.0000
4.1563	4.1563	2.664	0	0.0000	0.0000	0.0000
3.9375	3.9375	3.254	0	0.0000	0.0000	0.0000
3.7188	3.7188	3.369	0	0.0000	0.0000	0.0000
3.5000	3.5000	4.548	0	0.0000	0.0000	0.0000

# of Comments 0

# of Lines 0



What you have is four rings, all with a uniform width, and a base. They start out circular and morph to a square. Because this basket is 10½ wide, the scale had to be set to 0.667. The pattern can be enlarged 150% with a copier. There is waste material between the inside of a ring and the outside of the next ring. It will be the most narrow at the corners and widest at the sides. This is where the drill marks will go. The drill marks will be exactly in the middle between the inside of the ring and the outside of the next ring. The dimensions are shown in the table below.

		Side Radius	Corner Radius	Poly Order	Drill Mark
1 <sup>st</sup> ring	Outside	5.2500	5.2500	2.000	
	Inside	5.0313	5.0313	2.000	4.9219
2 <sup>nd</sup> ring	Outside	4.8125	5.0000	2.248	4.4844
	Inside	4.5938	4.7813	2.261	4.0469
3 <sup>rd</sup> ring	Outside	4.3750	4.7500	2.622	4.0469
	Inside	4.1563	4.5313	2.664	3.6094
4 <sup>th</sup> ring	Outside	3.9375	4.5000	3.254	3.6094
	Inside	3.7188	4.2813	3.369	
	Base	3.5000	4.2500	4.548	

The drill marks will be made with four, very small, circular Polys. Entering the drill mark data from the table above into the **Xoffset** for each Poly will place them in the correct location.

Now when making square baskets it is necessary to make the number of ripples divisible by 2 but not divisible by four. For this size basket either 10 or 14 ripples is recommended. (Go

ahead and try 6, 18, 22, etc.) With the rings having a 7/32" width I find that a wave amplitude of 5/32" (0.1563") is esthetically pleasing. Of course you will need to add some comments.

Add this new data as shown below into PolyDraw then click the **Draw** button to draw your pattern.

Scale

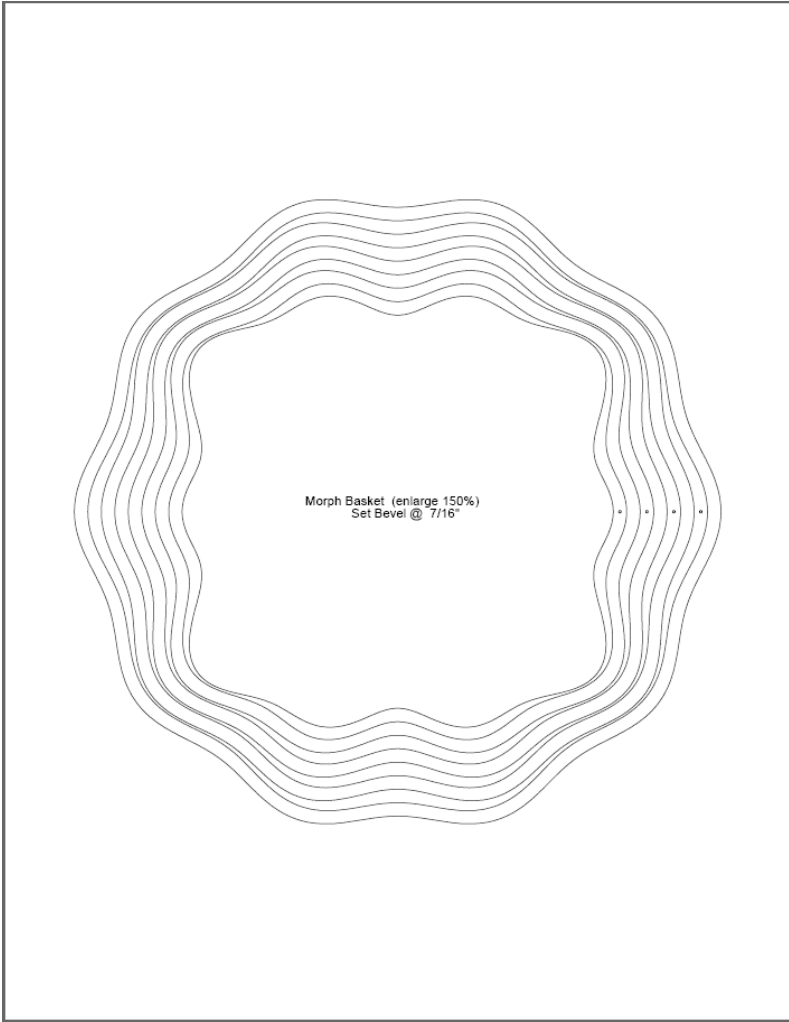
# of Polys

X Radius	Y Radius	Poly Order	# of Waves	+/-Wave Amplitude	X Offset	Y Offset
<input type="text" value="5.2500"/>	<input type="text" value="5.2500"/>	<input type="text" value="2.000"/>	<input type="text" value="10"/>	<input type="text" value="0.1563"/>	<input type="text" value="0.0000"/>	<input type="text" value="0.0000"/>
<input type="text" value="5.0313"/>	<input type="text" value="5.0313"/>	<input type="text" value="2.000"/>	<input type="text" value="10"/>	<input type="text" value="0.1563"/>	<input type="text" value="0.0000"/>	<input type="text" value="0.0000"/>
<input type="text" value="4.8125"/>	<input type="text" value="4.8125"/>	<input type="text" value="2.248"/>	<input type="text" value="10"/>	<input type="text" value="0.1563"/>	<input type="text" value="0.0000"/>	<input type="text" value="0.0000"/>
<input type="text" value="4.5938"/>	<input type="text" value="4.5938"/>	<input type="text" value="2.261"/>	<input type="text" value="10"/>	<input type="text" value="0.1563"/>	<input type="text" value="0.0000"/>	<input type="text" value="0.0000"/>
<input type="text" value="4.3750"/>	<input type="text" value="4.3750"/>	<input type="text" value="2.622"/>	<input type="text" value="10"/>	<input type="text" value="0.1563"/>	<input type="text" value="0.0000"/>	<input type="text" value="0.0000"/>
<input type="text" value="4.1563"/>	<input type="text" value="4.1563"/>	<input type="text" value="2.664"/>	<input type="text" value="10"/>	<input type="text" value="0.1563"/>	<input type="text" value="0.0000"/>	<input type="text" value="0.0000"/>
<input type="text" value="3.9375"/>	<input type="text" value="3.9375"/>	<input type="text" value="3.254"/>	<input type="text" value="10"/>	<input type="text" value="0.1563"/>	<input type="text" value="0.0000"/>	<input type="text" value="0.0000"/>
<input type="text" value="3.7188"/>	<input type="text" value="3.7188"/>	<input type="text" value="3.369"/>	<input type="text" value="10"/>	<input type="text" value="0.1563"/>	<input type="text" value="0.0000"/>	<input type="text" value="0.0000"/>
<input type="text" value="3.5000"/>	<input type="text" value="3.5000"/>	<input type="text" value="4.548"/>	<input type="text" value="10"/>	<input type="text" value="0.1563"/>	<input type="text" value="0.0000"/>	<input type="text" value="0.0000"/>
<input type="text" value="0.0200"/>	<input type="text" value="0.0200"/>	<input type="text" value="2.000"/>	<input type="text" value="0"/>	<input type="text" value="0.0000"/>	<input type="text" value="4.9219"/>	<input type="text" value="0.0000"/>
<input type="text" value="0.0200"/>	<input type="text" value="0.0200"/>	<input type="text" value="2.000"/>	<input type="text" value="0"/>	<input type="text" value="0.0000"/>	<input type="text" value="4.4844"/>	<input type="text" value="0.0000"/>
<input type="text" value="0.0200"/>	<input type="text" value="0.0200"/>	<input type="text" value="2.000"/>	<input type="text" value="0"/>	<input type="text" value="0.0000"/>	<input type="text" value="4.0469"/>	<input type="text" value="0.0000"/>
<input type="text" value="0.0200"/>	<input type="text" value="0.0200"/>	<input type="text" value="2.000"/>	<input type="text" value="0"/>	<input type="text" value="0.0000"/>	<input type="text" value="3.6094"/>	<input type="text" value="0.0000"/>

# of Comments

X Offset	Y Offset	Comment
<input type="text" value="-1.5000"/>	<input type="text" value="0.1000"/>	<input type="text" value="Morph Basket (enlarge 150%)"/>
<input type="text" value="-0.7500"/>	<input type="text" value="-0.1000"/>	<input type="text" value="Set Bevel @ 7/16"/>

# of Lines



You now have a basket pattern that starts as a rippled circle and ends as a rippled square. Each ring and the base all have 10 ripples. It has four drill marks to cut the inside of each ring. Save the pattern as **MorphBasket.txt**.

This ends this tutorial and you have completed the PolyDraw tutorial series. Congratulations, you are now a **Master of PolyDraw**. What you decide to build is limited only by your imagination. Enjoy!