

What Makes Good Form?

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“Form” is subjective, we each have different opinions on the shapes we like best. Those opinions have a lot in common in spite of the differences.

As wood-turners, form is important to us. We all like pretty wood and a nice finish but the form is more important than either (in my opinion).

I believe in only one “**rule**” for wood-turning; “**Don't bleed on the wood**”. The material that follows is a group of suggestions, **NOT** rules:

- “Rule” of thirds
 - A commonly repeated suggestion that says a piece's maximum diameter should be located either at 1/3 of the height or at 2/3 of the height.
 - Also used to suggest that a finial's height should be 1/3 as tall as the piece or sometimes 1/3 of the total height. *My opinion: a finial's height should be proportional to the piece's diameter instead of it's height.*
- “Golden Ratio”
 - Suggests that the ratio between features should be 1.618 (rounded to 3 decimal places).
 - More info is available at: https://en.wikipedia.org/wiki/Golden_ratio
- Note that “Rule of thirds” puts a feature (max diameter?) at 67% of the height while “Golden Ratio” puts the feature at 62% of the height.
- “Continuous curve”
 - A commonly repeated suggestion that our forms should not have straight lines. Going beyond “no straight lines”, the shape should be a curve with continuously varying radius, not a collection of curves blended together.

I recommend using the above suggestions as starting points not necessarily as final results. Consider these pictures from 2012:



In the left picture above, the maximum diameter occurs lower than than $2/3$ the total height and is just about at the Golden Ratio. In the middle picture above (which just happened to include a tape measure), the maximum diameter occurs above $2/3$ the total height and significantly above the Golden Ratio. In the right picture the maximum diameter occurs almost exactly at $2/3$ the total height.

A “Continuous curve” is a feature that is common to all of the above pieces and is something that I try to achieve BUT I don't consider it to be a “Rule”. Consider this picture from 2013:

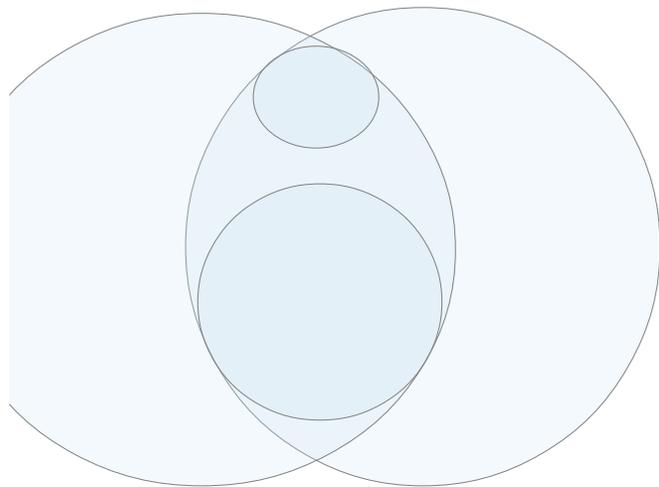
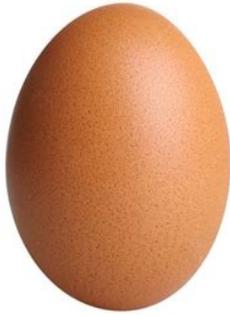


The maximum diameter is above $2/3$ of the height and the “continuous curve” is deliberately broken by a integral collar. I am proud of this piece and it was awarded third place in an prestigious art show.

All of the above applies to hollow forms more than most other turned work. I will suggest a less structured approach to choosing / judging form that involves looking at how the **radius** of the “continuous curve” changes from the bottom of the form up to the top of the form. This involves mathematical concepts but does NOT necessarily involve doing any math.

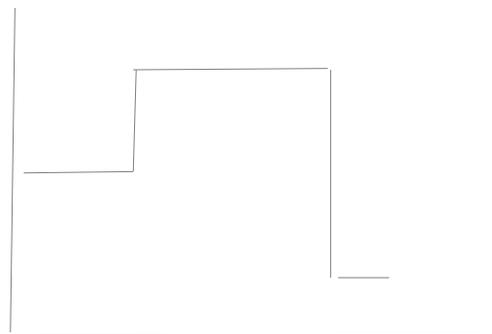
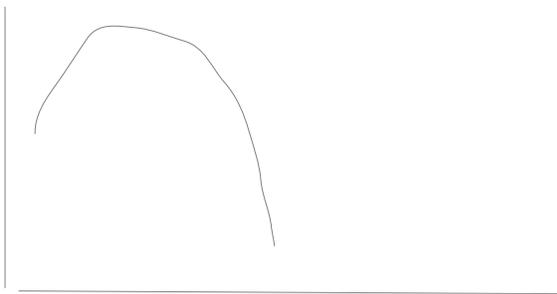


A sphere has a single radius



If we graphed the radius of an egg (large end down in this case), starting at the bottom the radius is medium. Going up the side, the radius increases to a maximum and then decreases to its smallest value near the top.

A sketched graph of the radius of an egg vs graph of the radius of an “egg” drawn with a compass.



Another important feature of wood turned art is the size/shape of the bottom. For functional pieces, it is important that the piece is stable and does not tip or fall when touched / moved. For art pieces, appearance becomes more important than stability. It should not tip or fall when someone walks by or be blown over by a ceiling fan but is not expected to withstand rough handling. A little extra weight in the bottom can make a piece more stable than it appears while a small base greatly improves the form.

So far, we have discussed hollow forms, open bowls don't fit the "rule of thirds" or "golden ratio" as easily but their shape is just as important. My preference is often pieces that are inspired by mathematical shapes. Note: I do NOT attempt to make mathematically accurate shapes.

Sphere: A shallow salad bowl that approximates $1/3$ or less of a sphere with or without carved feet.



Oval: Several shapes based on ovals are possible and attractive.



Parabolic:



Catenary: Mathematically different from above and a good inspiration but bowls inspired by catenary curves look very similar to bowls inspired by parabolic curves (at least to me).

Note: Do not allow the inspiration of a simple form to prevent you from adding decorative elements. Personally I think “Less is more” when adding decorative elements but **Less** is often much better than **None**.



Demo goals:

How to layout / turn a hollow form based on “Rule of thirds” or “Golden Mean”

How to convert a series of curves into a “continuous curve”

How to avoid letting the mounting (face-plate or chuck) size dictate the size of the bottom.

Doing a self critique on pieces after they are made (Learning from our successes and failures).