OXON WOODTURNERS' CLUB

February Newsletter

Dear Members,

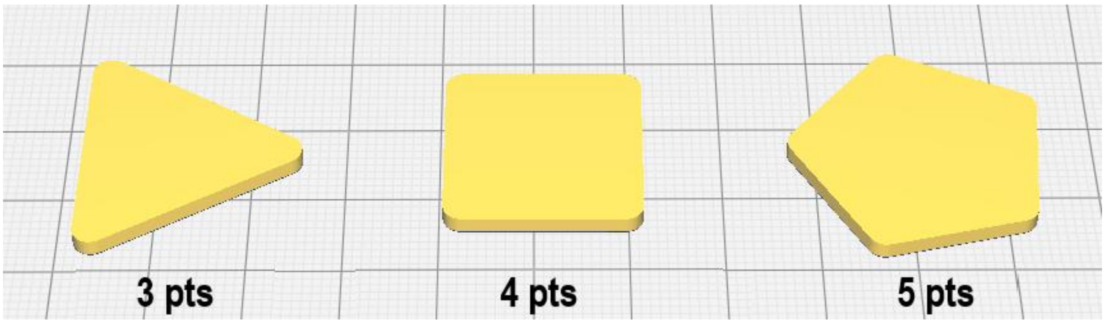
I hope those of you that attended last week's Club night enjoyed yourselves, and I look forward to seeing more of you at the next session on 10th March for a demonstration night with Chris Parker ("The Bald Turner"). I believe we have found our missing AV component and so expect to be able to show the demo in dual-aspect video as usual.

I am pleased to welcome two new members this month, and I hope they found our "hands-on" session a valuable learning opportunity, particularly with experienced turners on-hand to offer guidance. The theme for the night was wooden apples, and several of us managed to turn something ready to walk away with by the end of the evening.

Jinlin and Helen both turned wooden apples under expert guidance.

The Club night also marked the return of the monthly competition, which has seen a few small changes to the rules/scoring. Please see below if you missed the announcement at the last session:

- All Members will have three shaped counters to allocate to their favourite three pieces of work.
- The scoring counters are 3D-printed triangles, squares, and pentagons. The number of vertices on each shape represents the number of points that the counter is worth:



- Please do not allocate more than one counter to a single piece of work.
- Members should only enter one piece of work for scoring. Please do not let this discourage you from bringing additional pieces of work for display! We will have a separate table in future for competition entries.
- We will score "Advanced" and "Improvers" separately, and we'll have a different coloured set of counters for each. The intention is to set one project that can be done by all, with Members being able to choose how easy or complicated they make it for themselves. I do not wish to enforce which category Members should enter their work into for scoring, but please be honest with your skill level.

Members can allocate their counters how they wish, but it would be good to consider the following qualities when scoring:

- Form/shape/symmetry
- Surface finish/lack of tear-out.
- Technical difficulty

I'd like to take this opportunity to show the excellent work that Members displayed at the last meet:

This brings us nicely onto February's project: **Streptohedra.**

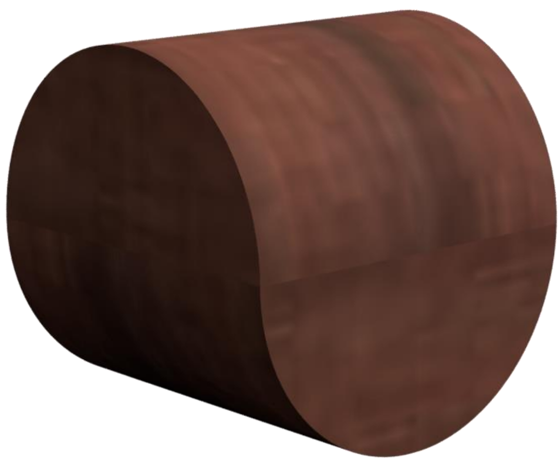


Streptohedra (from the Greek for "twisted faces") are 3D shapes that appear at first to be "impossible" to turn on the lathe. Dave Springett has a book that covers many variations of these (as well as some related shapes) which may be useful. There are also resources on the internet that may help.

Making Streptohedra will require two key skills:

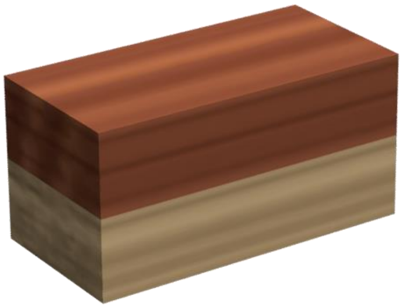
- Accurate, symmetric turning.
- Use of a paper-glue joint.

The easiest of these shapes (with respect to ease of turning and work-holding) to turn appears to be this one:

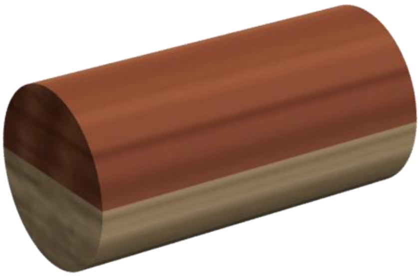


Here’s how to do it:

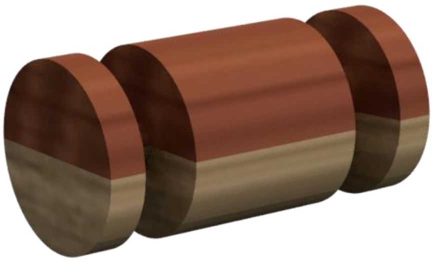
- Prepare a square spindle blank by joining two boards (e.g. 2” × 1” × 4”) with a paper-glue joint between the large faces (as we shall be separating these pieces later).



- Turn this laminated blank down to a cylinder, making sure that the glue line is centred on the axis of the lathe.

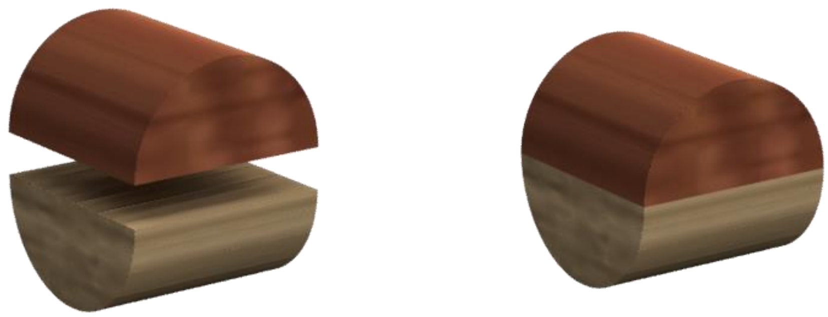


- Turn the required profile into the blank, leaving waste at each end to part off later. In this case, the cross section is a square.



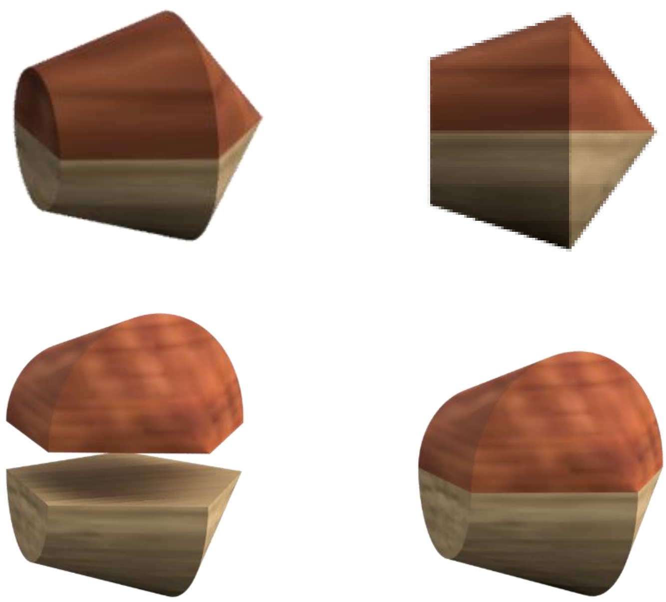
- Remove the remaining waste with a saw and finish the flat surfaces with a chisel, followed by lapping on sandpaper. Carefully split the turned shape in half along the paper-glue joint, and clean up the mating surfaces.

- Rotate one of the pieces, and then re-join the two halves with wood glue.

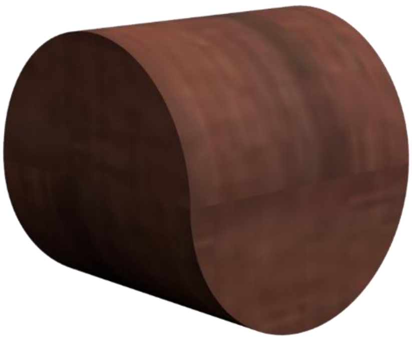


And there you have it, one finished streptohedron!

So, how can we make this more interesting, I hear you ask? The key step that dictates what your final streptohedron looks like is the turning of its cross-sectional profile. As mentioned before, we turned a square profile for this example; you can also turn the profile in the shape of other regular polygons, e.g. pentagon:



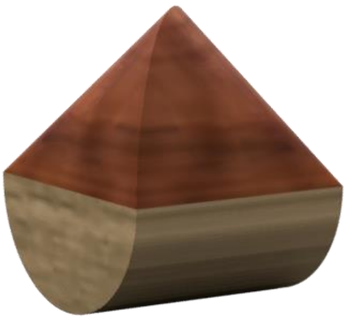
Polygons with an odd number of sides, e.g. triangle, pentagon, have to be turned between an edge and a point, but those with an even number of sides e.g. square can be turned either between edges or between points, with different results:



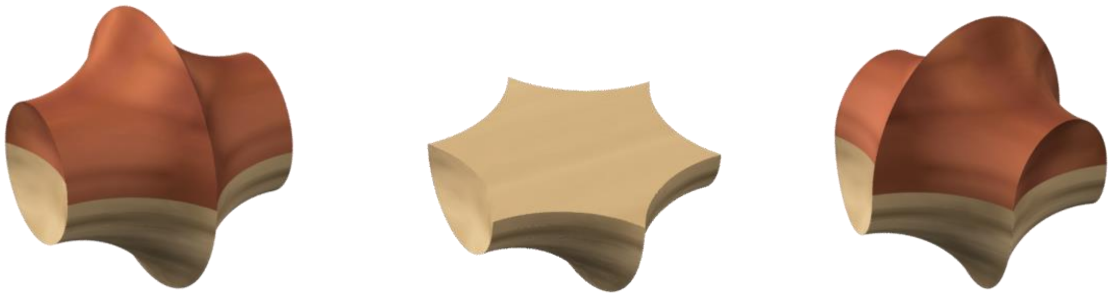
Turned between edges

Turned between points

If we turn both with the same size cross-sectional profile, we can form a hybrid streptohedron by combining one half turned between edges and one half turned between points:



We can also turn other profiles with rotational symmetry, e.g. a 5-pointed star, or a hexagon with curved edges:



As might be expected, you will have to get a little bit inventive with your approach to work-holding for some of these turnings, but that all adds to the fun.

I'd recommend looking at some of the references mentioned earlier for more information, and it's a good idea to use templates to ensure a symmetric turning. I'm really excited to see what you all bring along to the next Club night (**10th March**) for entry into the monthly competition!

Dan