

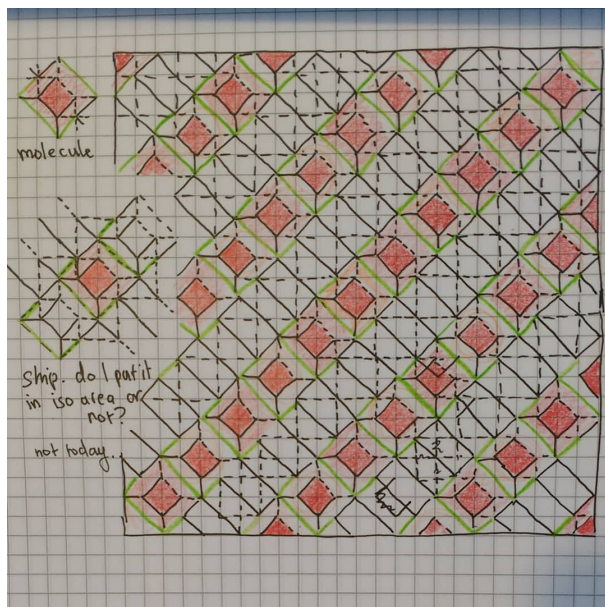
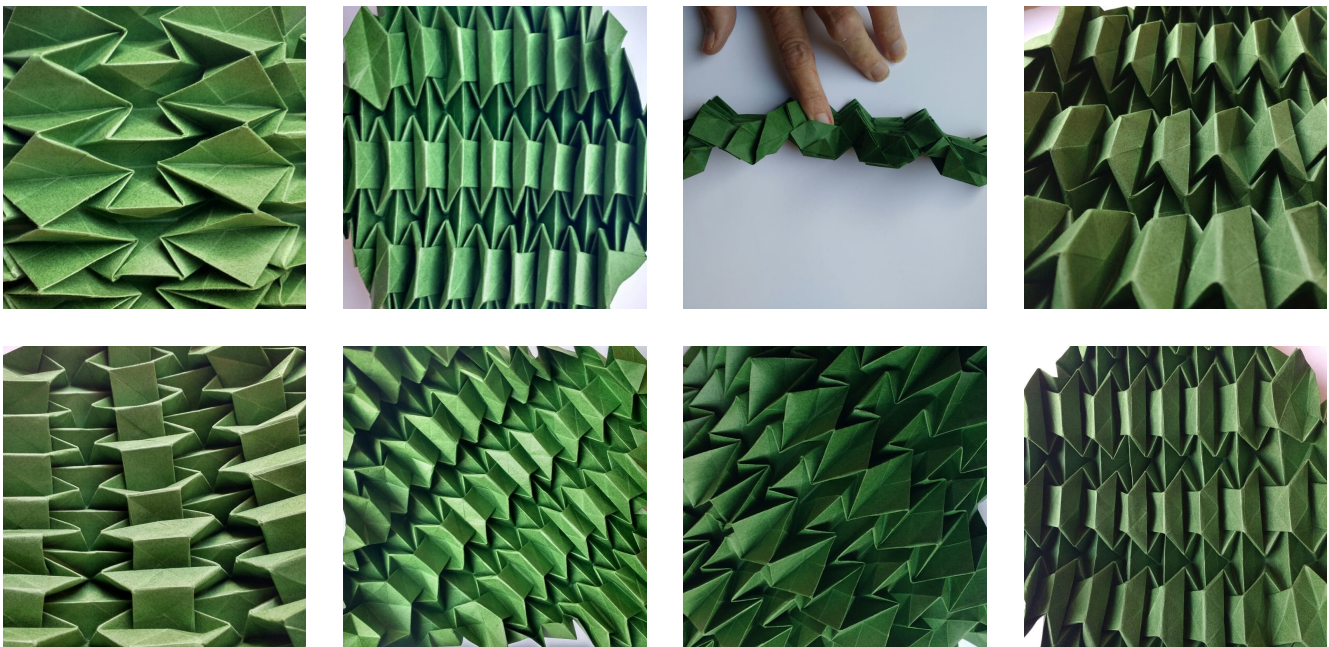
PINWHEEL BASED STEP LIKE CORRUGATION TYPE FOLDS

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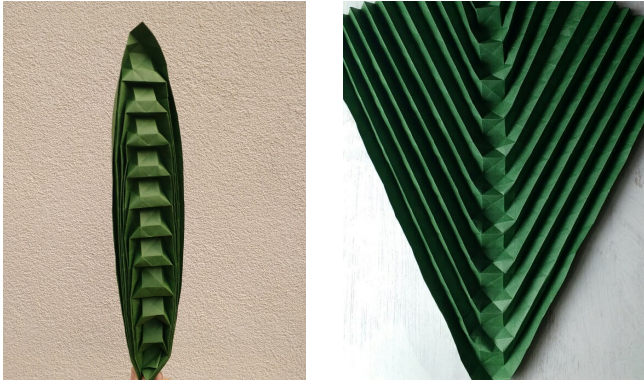
I have made a lot of different flat origami tessellations based on the pinwheel base – see [?], where the basic unit is described. Here I am continuing the investigation of tessellations based on this unit. But now they are put so close together that everything folds on top of each other, as in a corrugation, producing a very nice step effect. There are many ways of putting together the units to get these kinds of corrugations. Here are a few.

1. THE ORIGAMIS

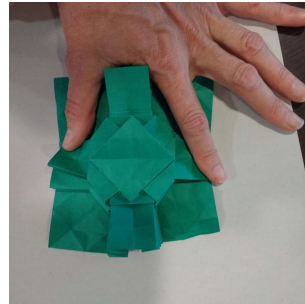
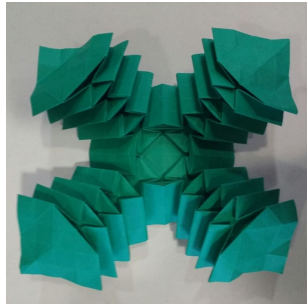
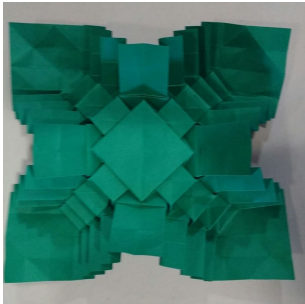
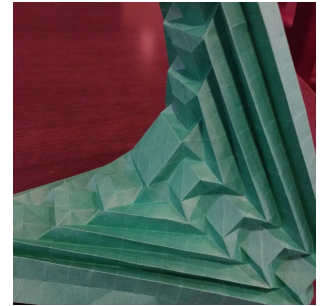
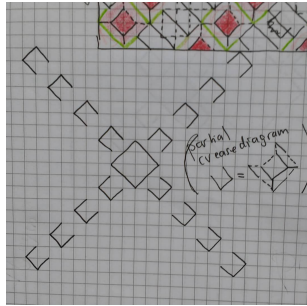
1.1. **Version one.** Probably the simplest way to put the units together to make a corrugation type fold. They are all on the same side, in the same direction. Pictures from several views, front and back, squashed flat and opened out to look like stairs. From the back it also looks like a hedgehog or scaly animal coat.



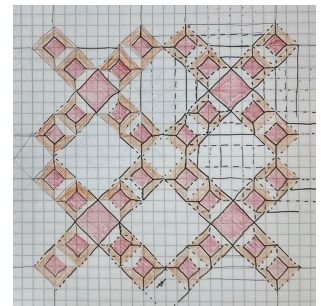
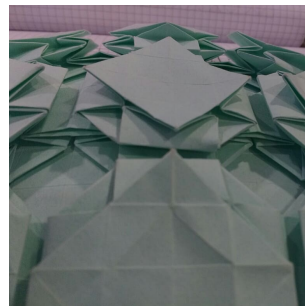
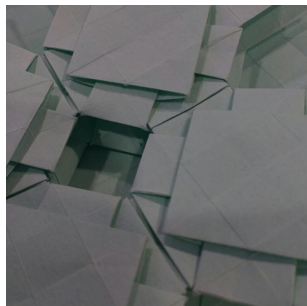
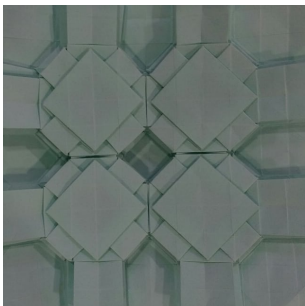
When folding this origami, I folded it strip by strip of steps at a time, starting with the middle strip. After just folding the middle strip of steps, this is how the origami looked:



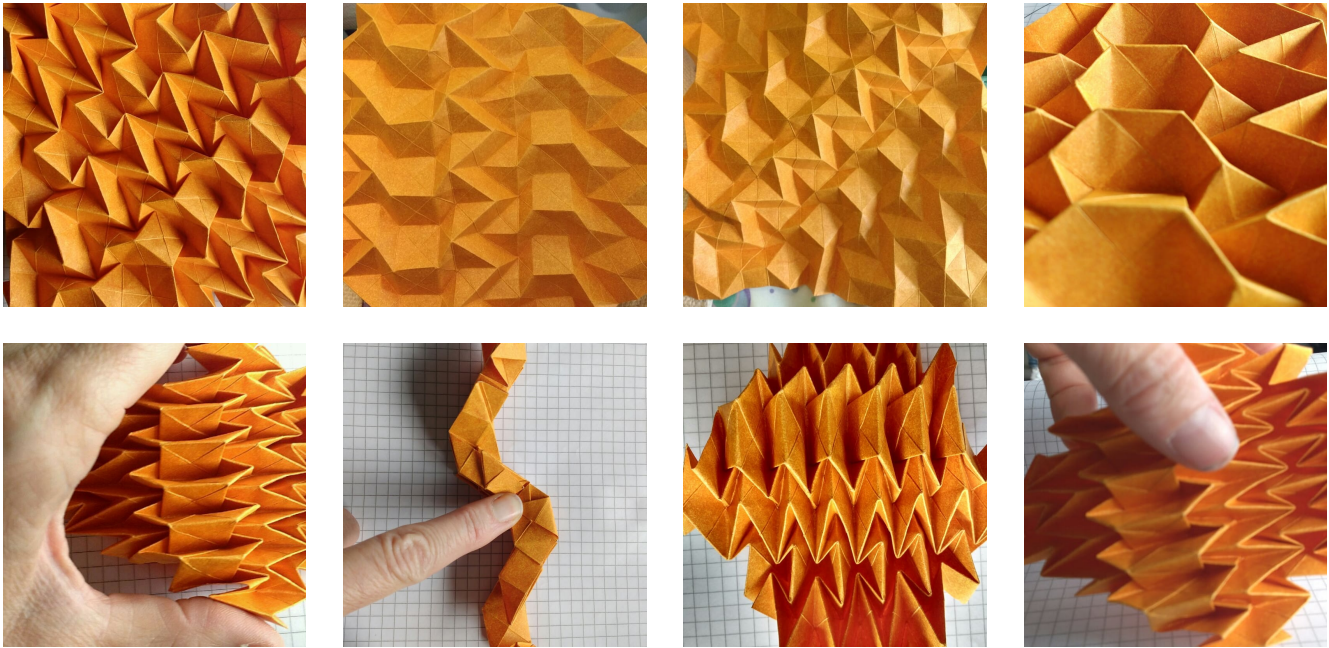
1.2. **Version two.** For the next version, these steps are put in four strips around a middle square. Pictures also show partial folded state, when the model looks like the origami hyperbolic parabola.



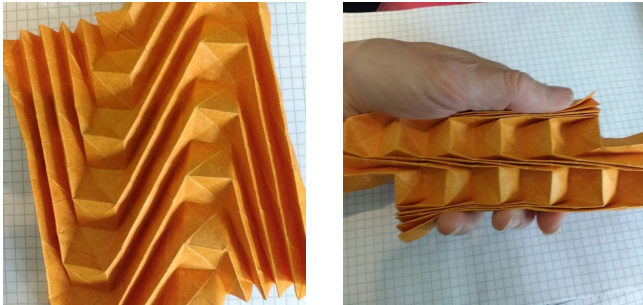
1.3. **Version three.** Strips of just two steps round a square make the basic unit; four of these put together.



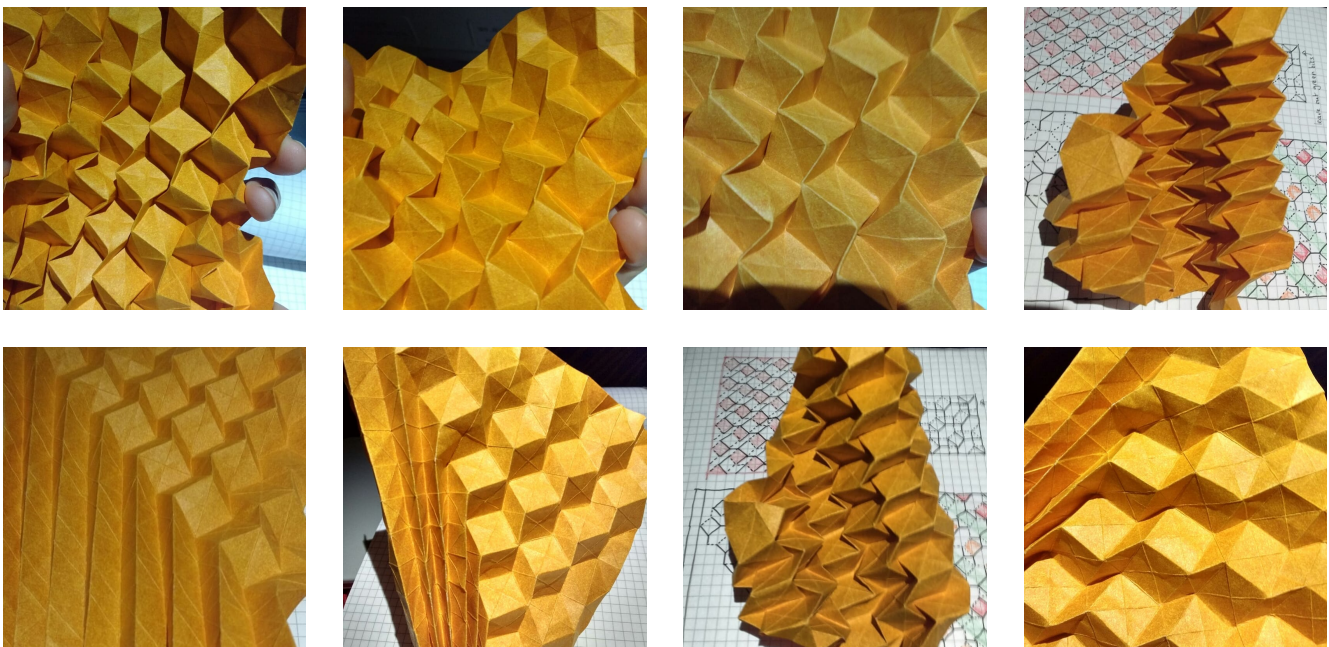
1.4. **Version four.** Now go back to strips of the steps, all same direction, but now some on one side, some on the other, so this is iso area.



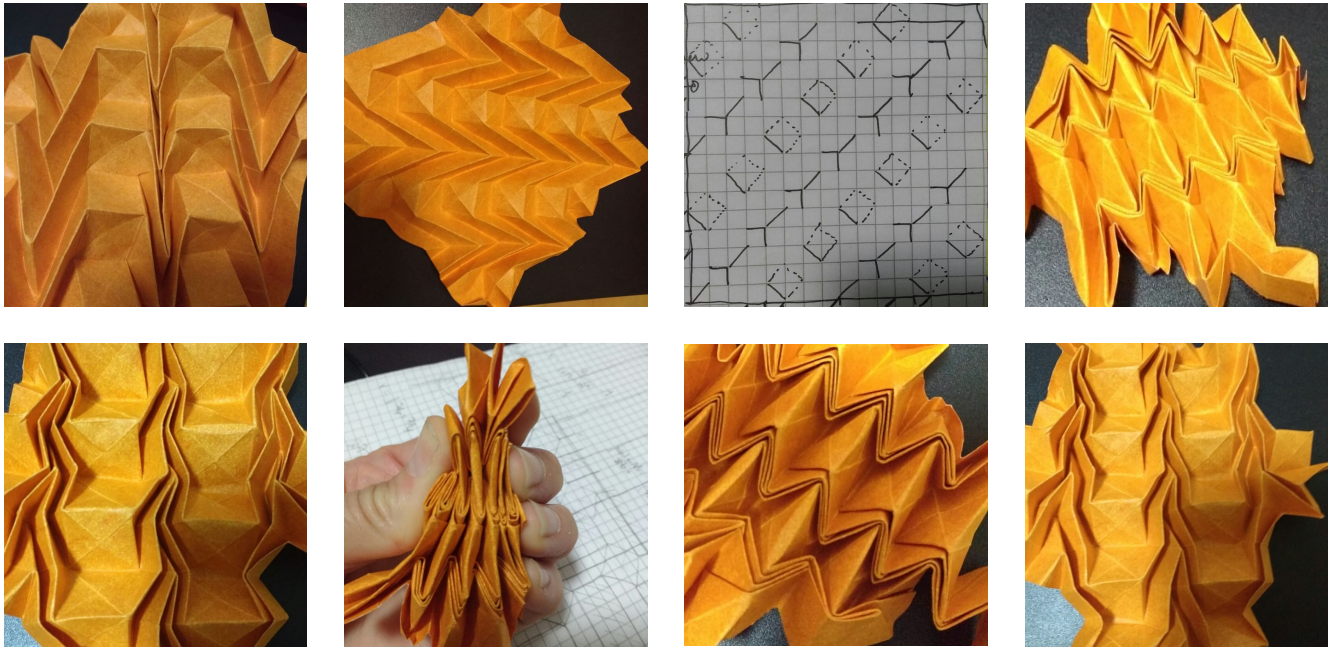
Here are some views of the model partly folded, before all the creases have been added.



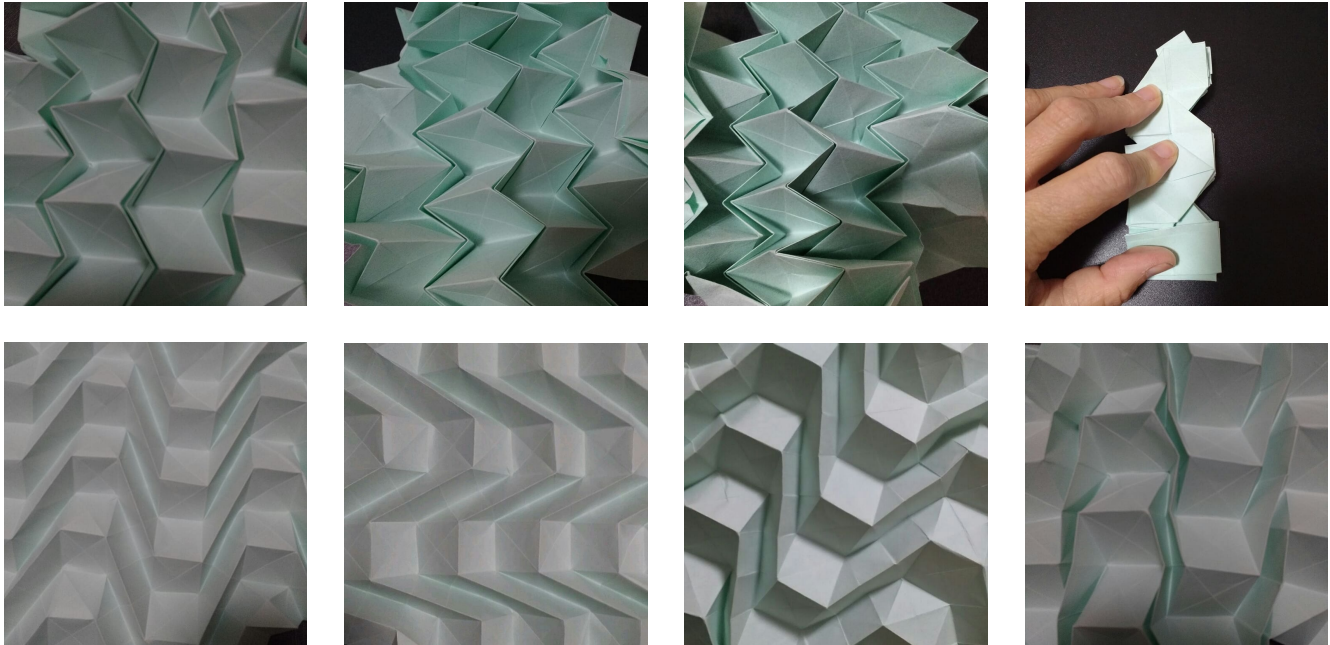
1.5. **Version five.** There are many ways to put together strips of this unit, e.g., closer or further apart, iso area or now, different directions, staggered relative to each other, different width steps, etc etc etc. For example, here the steps are closer together; this also folds completely flat, like a corrugation: Including partly folded views



1.6. **Version six.** In this version, some of the steps are made to have zero width:



1.7. **Version seven.** In this version, some of the steps are made to have zero width:



Crease patterns for above three designs:

