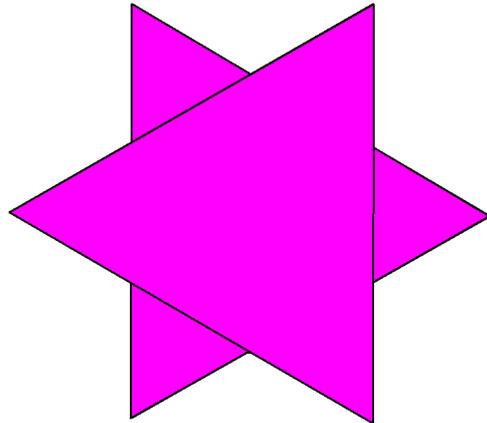


Equilateral Tiles and the Interwoven Star of David

These diagrams show you how to fold equilateral tiles from DIN sized or US letter sized paper, and how to turn them into Interwoven Stars of David. Both designs make excellent classroom projects.



As far as I know the method of folding an Interwoven Star of David from an equilateral triangle first appeared in part two of 'The Kindergarten Guide' by Maria Kraus Boelte and John Kraus, first published by E. Steiger and Company in New York, probably in 1882.

In around 1986, the British paperfolder Larry Hart reinvented the design for himself after seeing a more complex design for a Star of David by Shuzo Fujimoto in British Origami magazine 99 of April 1983. His reinvented version differed from the traditional design in that it was folded directly from an A4 sheet of paper. The simple method by which the equilateral triangle was constructed could also be applied to many other rectangles, for instance, a version folded from a bank note was included in Complete Origami by Eric Kenneway, published in 1987. In addition the forgiving nature of the design made it an ideal model for children to fold in the classroom. It has subsequently become something of a modern classic.

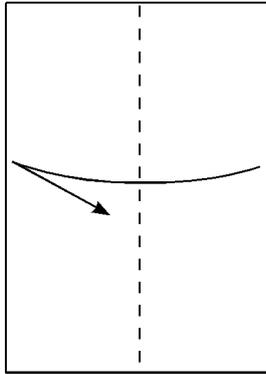
I have used Larry 's method of constructing an equilateral triangle as the basis of these diagrams. An equilateral triangle made in any other way can be converted to an Interwoven Star of David using the same method.

These designs can be folded from any kind of paper but, for the sake of clarity, in these diagrams, I have shown one side of the paper white and the other side shaded. The white side is completely hidden inside the Interwoven Star of David as the folding sequence progresses.

Folding the equilateral tile

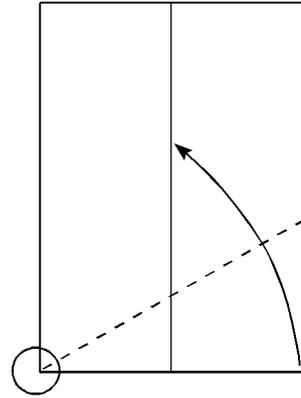
You will need a sheet of A4 or US letter sized paper for each tile

1



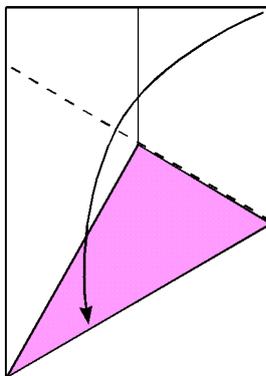
1. Fold in half edge to edge, then unfold.

2



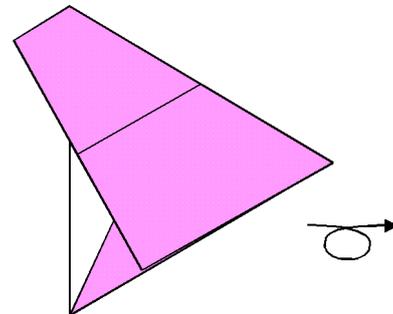
2. Fold the bottom right corner onto the vertical crease making sure the crease starts exactly from the bottom left corner which becomes sharp.

3



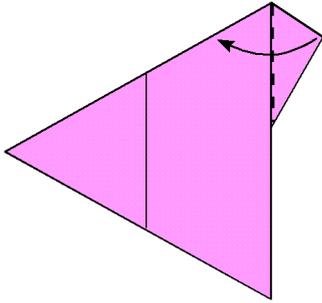
3. Fold the right edge onto the bottom sloping edge.

4



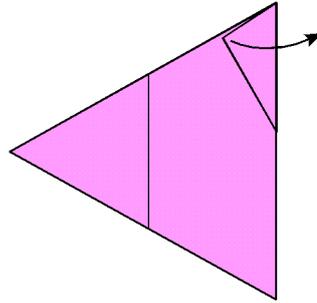
4. Turn over sideways.

5



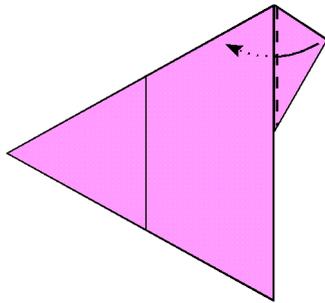
5. Fold the right point inwards along the line of the right edge of the front layer.

6



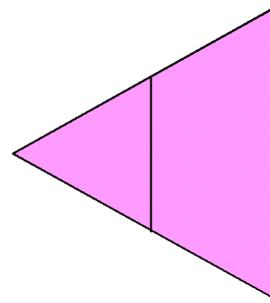
6. Undo the fold made in step 5.

7



7. Remake fold 5 in between the other layers. Steps 6 and 7 are not essential to the design but following them produces a cleaner result.

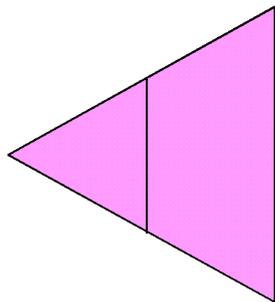
8



8. Your equilateral tile is complete. This design will lie flat and can be used to construct a tessellation in a classroom setting.

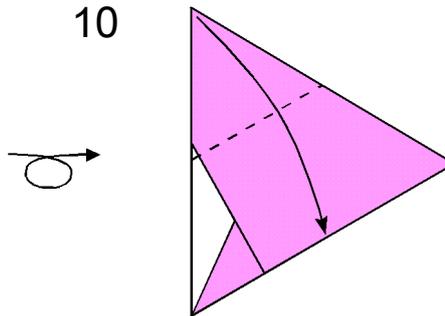
Folding the Interwoven Star of David

9



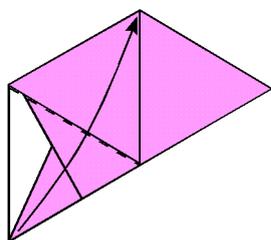
9. Turn an equilateral tile over sideways.

10



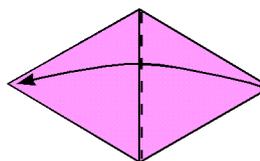
10. Fold the top point diagonally downwards along the line of the existing crease.

11



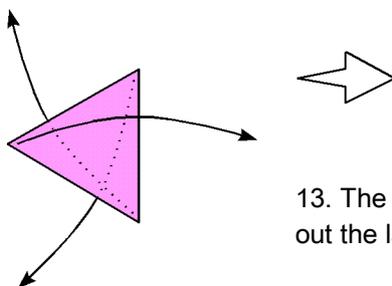
11. Fold the bottom point diagonally upwards along the line of the sloping bottom edge of the front layers.

12



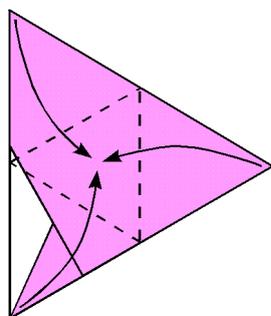
12. Fold the right point inwards along the line of the right edge of the front layers.

13



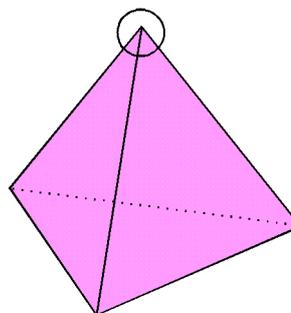
13. The result should look like this. Open out the last three folds.

14



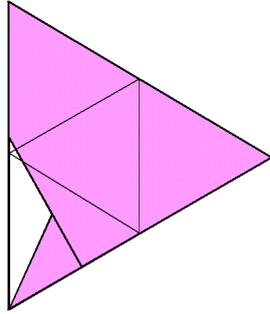
14. Liz Meenan has pointed out to me that folding all three points inwards at this stage until the corners meet produces a simple model of a tetrahedron.

15



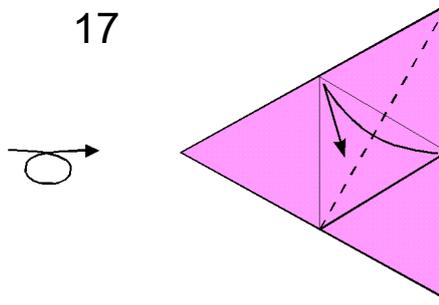
15. The faces of this tetrahedron need to be held together at the point marked with a circle.

16



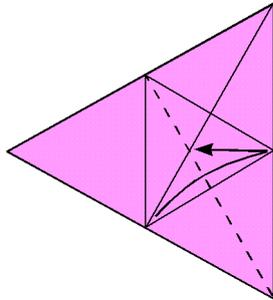
16. Flatten the tetrahedron and turn over sideways.

17



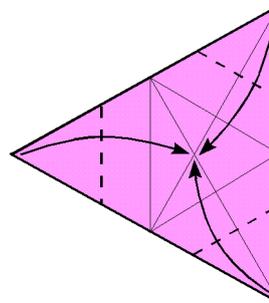
17. Fold in half, then unfold.

18



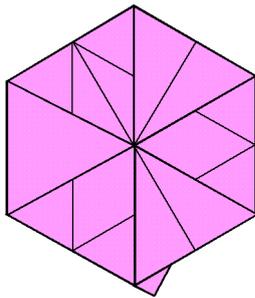
18. Fold in half, then unfold, again.

19



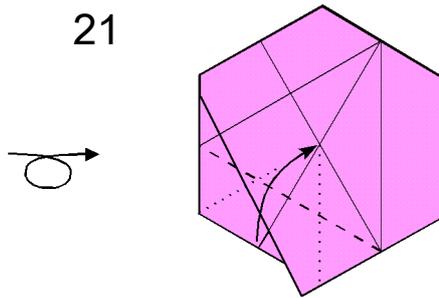
19. The point where the creases made in steps 17 and 18 intersect is the centre of the triangle. Fold all three corners to this point.

20



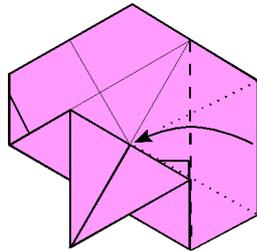
20. Turn over sideways.

21



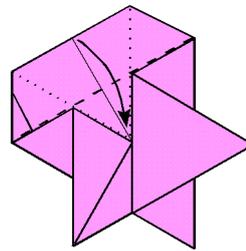
21. Fold the bottom sloping edge inwards using the existing crease and allowing the back layers (marked with a dotted line) to flip into view as you do so.

22



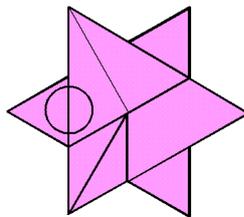
22. Repeat step 21 on the right edge.

23



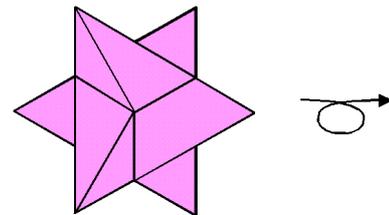
23. Repeat step 21 on the top sloping edge.

24



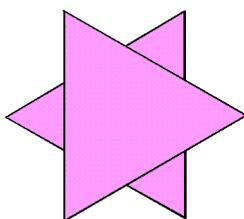
24. Tuck the layers marked with a circle behind the layers underneath them.

25



25. The layers are now all locked together. Turn over sideways.

26



26. The finished Interwoven Star of David will look like this.

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