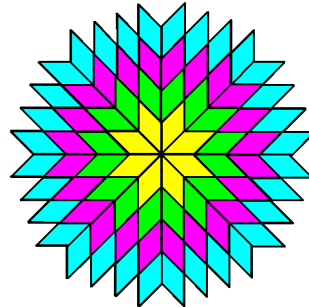


Octagon Rhombus Tiles

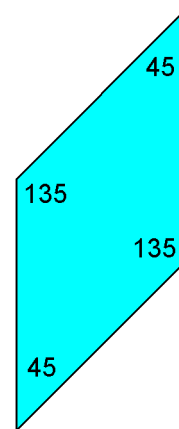
These diagrams show you how to fold octagon rhombus tiles from silver rectangles, leftover rectangles and squares. You can also create the shape of this tile by putting two octagon isosceles tiles together along their short edges.



Silver rectangles have edges in the proportion $1:\sqrt{2}$. DIN paper sizes such as A4, A5 etc are good enough approximations of silver rectangles for practical paperfolding purposes.

Leftover rectangles have sides in the proportion of $1:\sqrt{2}+1$ and are easily obtained from silver rectangles by removing the largest possible square.

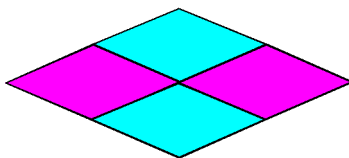
Octagon rhombus tiles can be combined into compound tiles of the same shape. They also go together in a very attractive sunburst pattern that can be extended as far as space permits.



For the record I discovered the methods of folding a tile of this shape from silver and leftover rectangles in 2000.

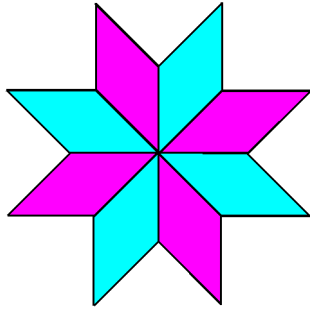
Tiling patterns

1



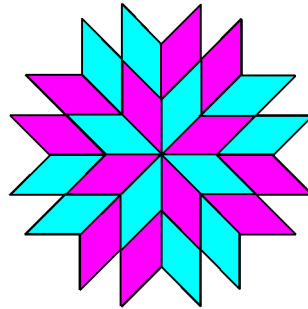
1. The Rhombus tile will tile the plane like this.

2



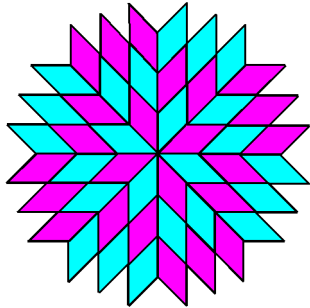
2. Eight tiles will fit together to form a star.

3



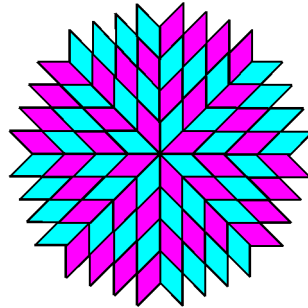
3. The size of the star can be increased by adding further layers of tiles around the perimeter like this.

4



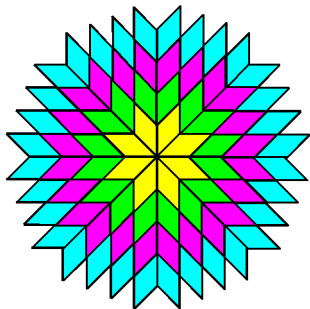
4. A two colour pattern can be maintained by adding the new tiles in rows of two, then three tiles of the same colour like this.

5



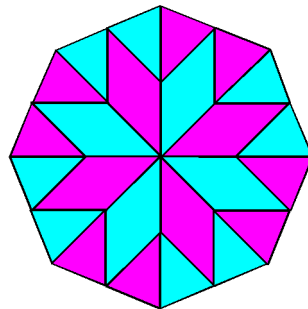
5. This process can be continued ad infinitum to tile the plane.

6



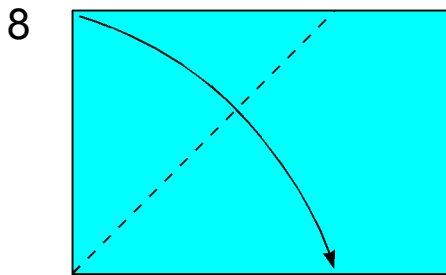
6. This tiling can also be coloured concentrically.

7

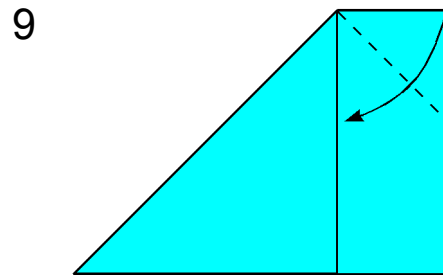


7. Octagon isosceles tiles and octagon rhombus tiles folded from the same size of leftover rectangle can be used in combination with each other.

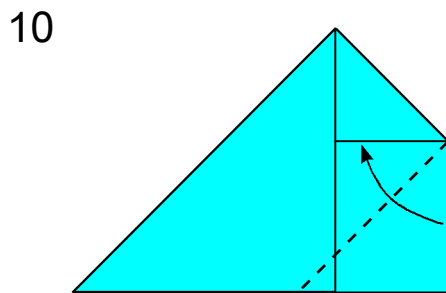
Folding from the silver rectangle



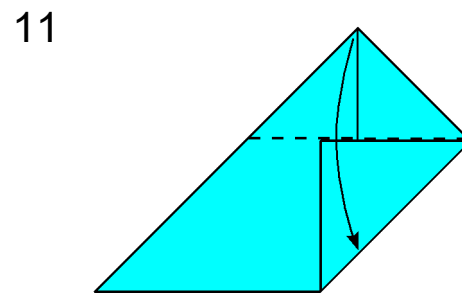
8. Fold the left edge onto the bottom edge.



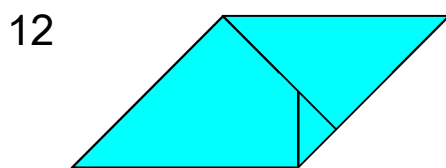
9. Fold the top edge inwards to lie along the right edge of the front flap.



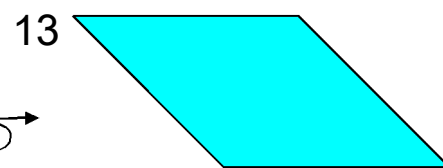
10. Fold the right edge inwards to lie along the bottom edge of the smaller front flap.



11. Fold the top point downwards like this so that the right hand sloping edges are aligned.



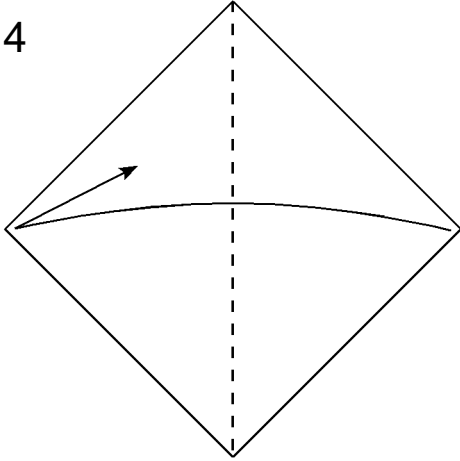
12. Make sure all the layers lie flat then turn over sideways.



13. The octagon rhombus tile is finished.

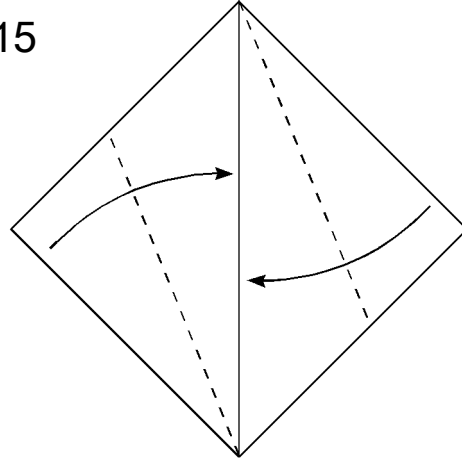
Folding from the square

14



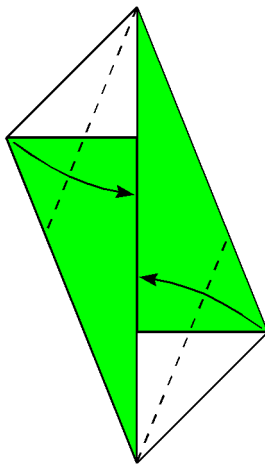
14. Fold in half sideways, then unfold.

15



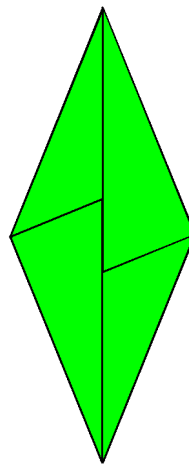
15. Fold the bottom left sloping edge and the top right sloping edge onto the vertical crease.

16

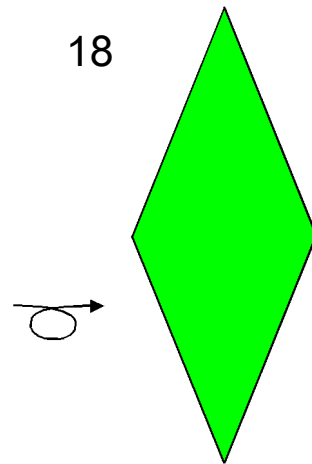


16. Fold the top left sloping edge and the bottom right sloping edge onto the vertical crease.

17



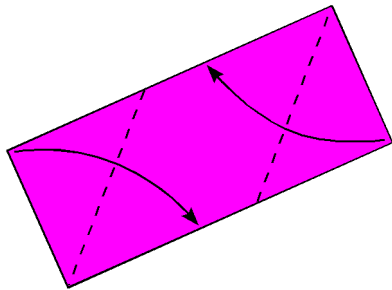
18



17/18. Turn over sideways. The octagon rhombus tile is finished.

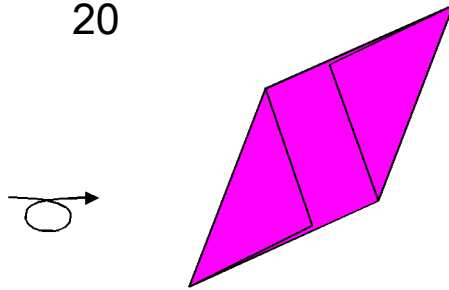
Folding from the leftover rectangle

19



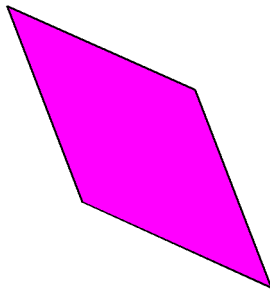
19. Fold the left edge onto the bottom edge and the right edge onto the top edge.

20



20. Turn over sideways.

21



21. The octagon rhombus tile is finished.

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