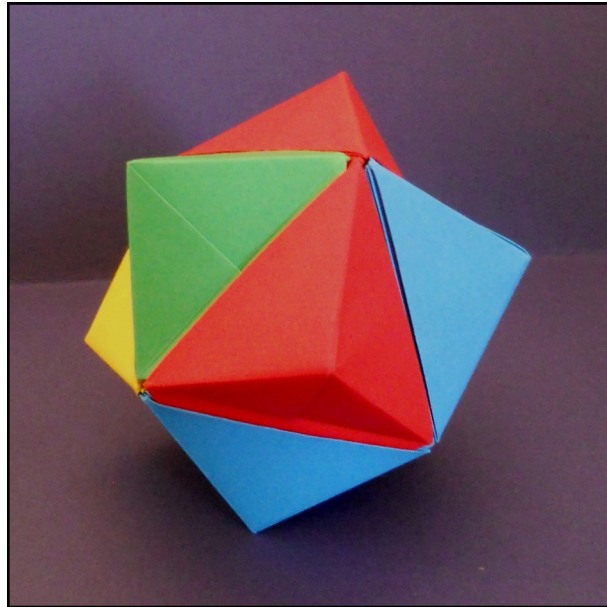# 4Star

Designed by David Mitchell

Technically 4Star is a 4-part 8-pointed Stubby Star. It is one of those designs that is all about the enjoyment of the journey, the folding and the assembly process, rather than the appearance of the finished result. There are several ways to make an 8-point Stubby Star that has a cleaner appearance ... but none, I believe, that provide so much entertainment en route.

I originally designed 4Star in 1989 but although I showed it around to friends and drew basic diagrams they were never formally published so that in a sense 4Star makes its debut here.

I have drawn diagrams for two different ways of folding the module. The original design was folded from a 2x1 rectangle. I have updated that design slightly and also added a brand new method from a square.

In looking to fold the module from a square I was trying to design a lighter, more delicate module. I soon discovered that such a module could have either flaps or pockets, or one of each, but not both, and that the only way to release sufficient paper into the right areas to create both flaps and pockets was by using two small cuts. I do not normally use cuts in my designs but when I tried this method out I liked it. It provides an interesting contrast to the original method and is in many ways more elegant. Though the cost of this elegance is the cuts, of course.

It will be interesting to see which method other paperfolders prefer.

Method 1 - from 2x1 rectangles

These diagrams begin by showing you how to create 2x1 rectangles from A4 or US letter size paper but you can also use 2x1 rectangles made by cutting a square in half, in which case you will need to adapt the pre-creasing sequence accordingly. You will need four sheets of paper in four contrasting but complementary colours. The diagrams are drawn as if this paper was coloured one side and white the other but the design will work equally well if you use paper which is coloured on both surfaces. If you are using differentiated paper begin with it arranged white side up.

1

2
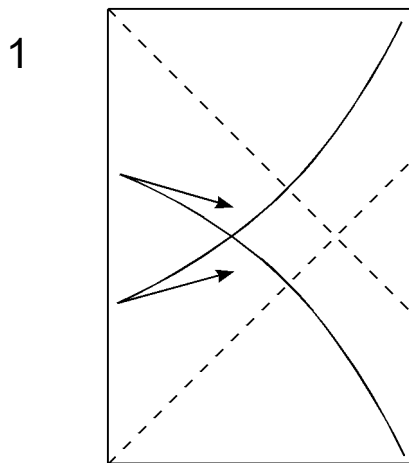
1. Fold the top edge onto the left edge then unfold. Fold the bottom edge onto the left edge then unfold.
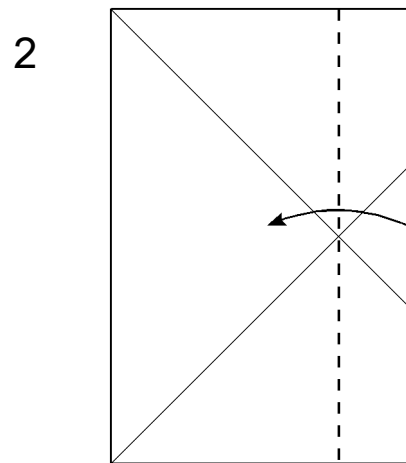
2. Fold the right edge inwards so that the creases are aligned inn the way shown in picture 3.

3
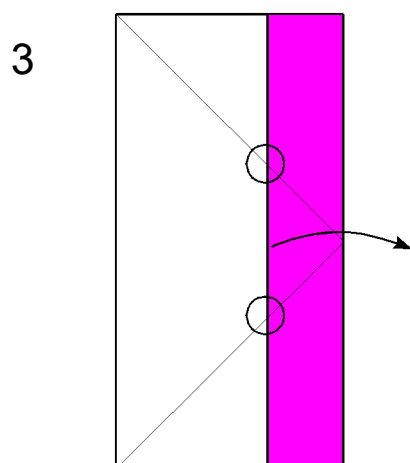
3. Make sure the creases made in step 1 are aligned like this before you flatten and crease the fold. Unfold.
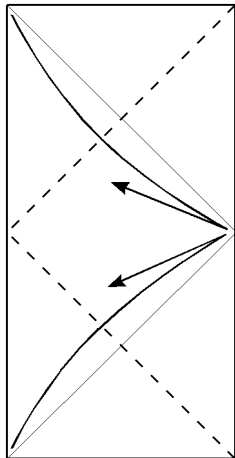
4
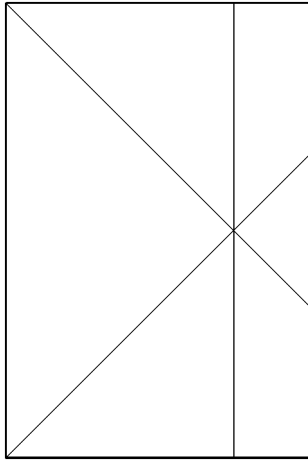
4. Cut along the vertical crease to separate the paper into two parts.
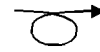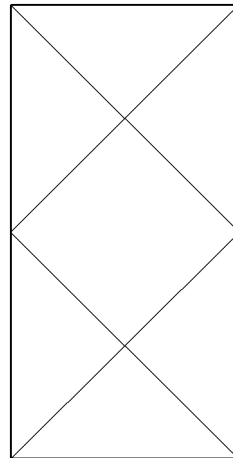
5
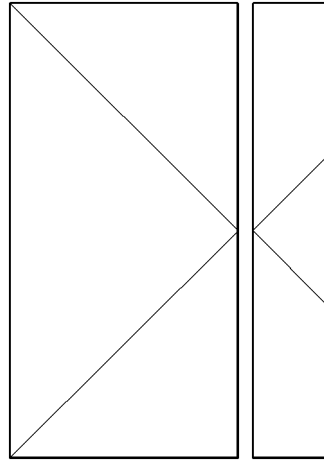
5. The left hand portion of the paper is a 2x1 rectangle. The right hand portion can be discarded.
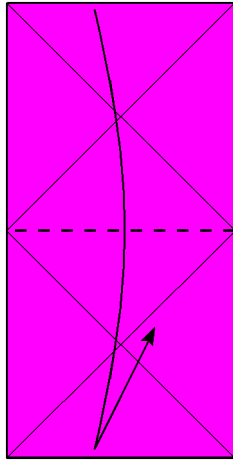
6

6. Fold the top edge onto the right edge then unfold. Fold the bottom edge onto the right edge then unfold.
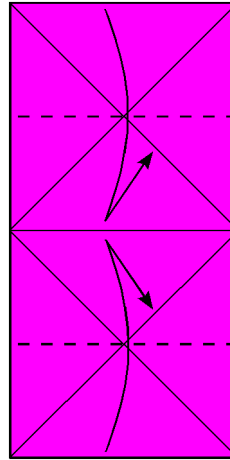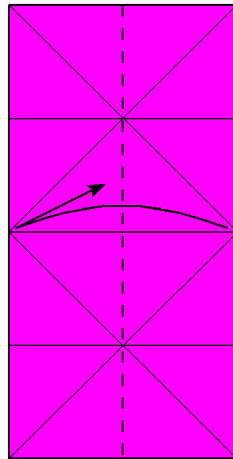
7

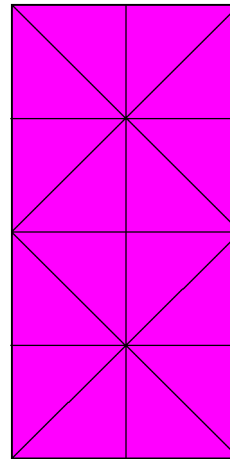7. Turn over sideways.

8

8. Fold in half downwards, then unfold.

9

9. Fold the top and bottom edges onto the central horizontal crease, then unfold.

10

10. Fold in half sideways, then unfold.

11

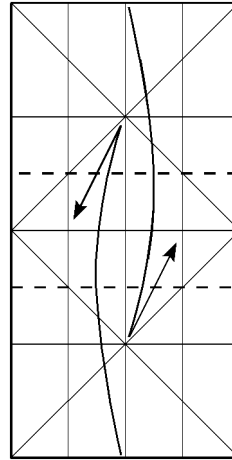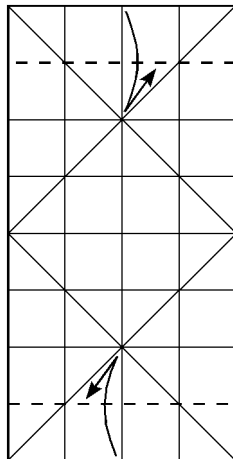11. Turn over sideways.

12
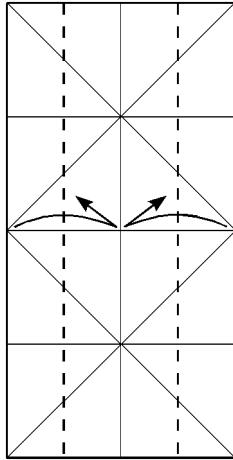
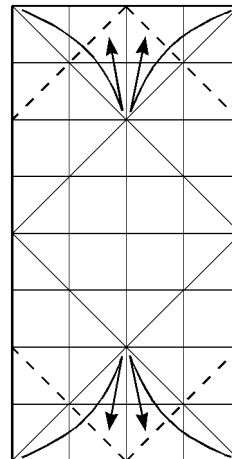12. Fold the right and left edges onto the central vertical crease, then unfold.

13

13. Fold the top edge onto the lower quarter way crease, then unfold. Fold the bottom edge onto the upper quarter way crease, then unfold.
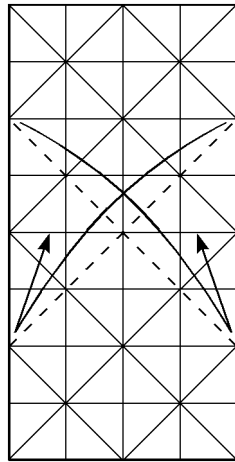
14

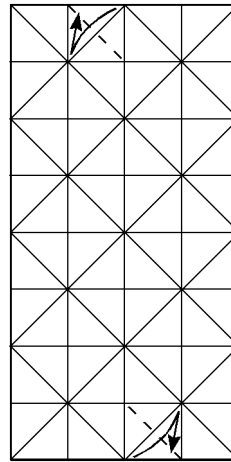14. Fold the top and bottom edges inwards as shown, then unfold.

15

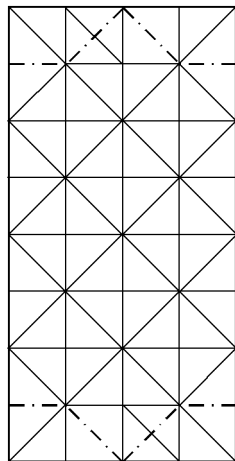15. Fold all four corners inwards as shown, then unfold.

16

16. Make two diagonal creases across the central area of the paper as shown.
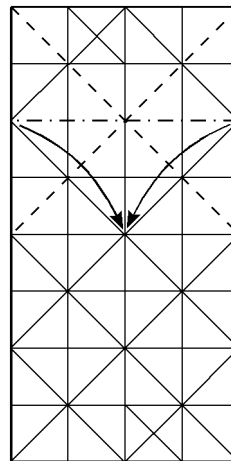
17

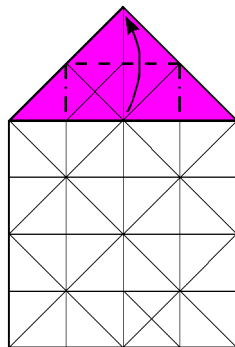17. Make two small diagonal creases in the way shown here.

18

18. Reverse the direction of these eight short creases to turn them into mountain folds.
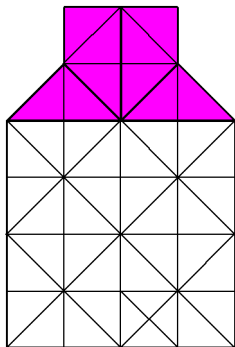
19

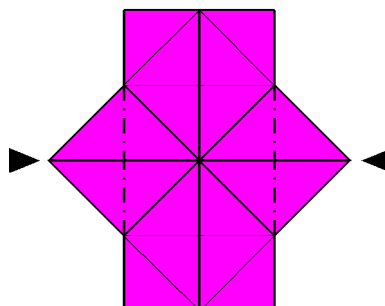19. Collapse the upper half of the paper into a waterbomb base.

20

20. Fold the bottom edge of the front layer upwards using the existing crease and flatten so that your paper looks like picture 21.
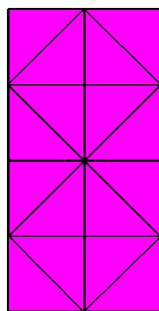
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21

21. Repeat steps 19 and 20 on the lower half of the paper.
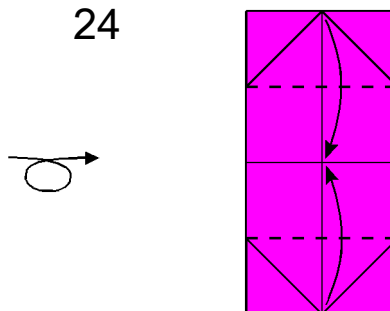
22

22. Turn the right and left corners inside out in between the other layers of the paper.
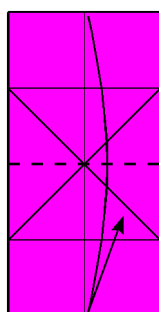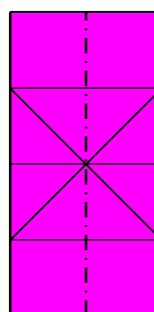
23

23. Turn over sideways.

24

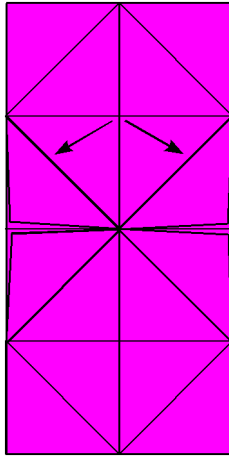24. Fold the top and bottom corners of the front layers in to the centre like this.

25

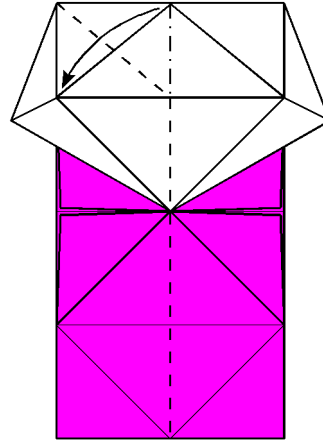25. Fold in half downwards, then unfold.

26

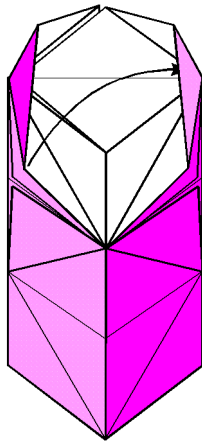26. Make the central vertical crease into a mountain fold. Be careful not to damage the paper as you do this.

27

27. Open the top front layers to right and left as shown.
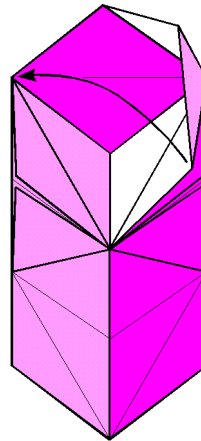
28

28. Use the small fold made in step 17 to collapse the module into the shape shown in picture 29.
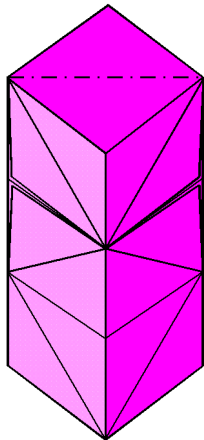
29

29. Lock the collapse in place by folding the top left front flaps across to the right and downwards like this.
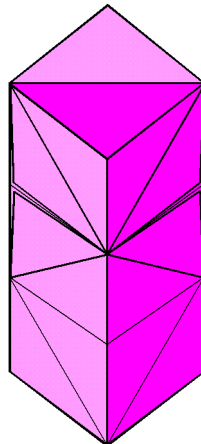
30

30. This is the result. Do the same thing with the right top front flaps.
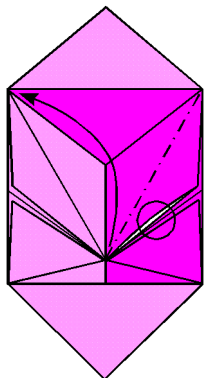
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31

32

31. Fold the top half of the square end wall backwards at right angles. This will also act to lock all the layers together.

32. This is the result. Turn your paper around and repeat steps 27 through 31 on the other half of the paper.

33

34

33. The design is now like an upside down house with four internal flaps. Separate the layers of the top right flap and fold the front layers upwards and to the left. The flap will form part of a triangular pyramid with the top of the pyramid pointing towards you. Picture 34 shows what this will look like.
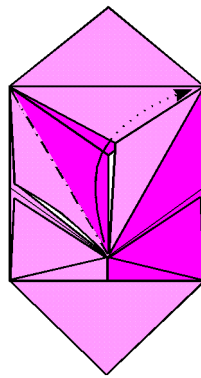
34. Repeat this move on the top right flap to complete the pyramid, making sure that this flap open up inside the layers of the part of the pyramid you have already made.
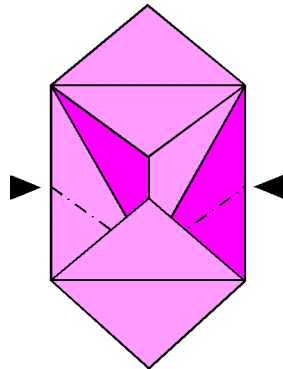
35
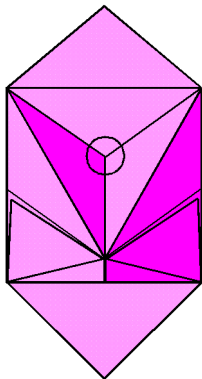
35. Make sure the tip of the pyramid is closed and sharp. If this is not the case press down on the tip of the pyramid to open a gap between the two parts. This will allow you to slip a small tool inside the pyramid to persuade all the internal layers to settle into their correct positions.
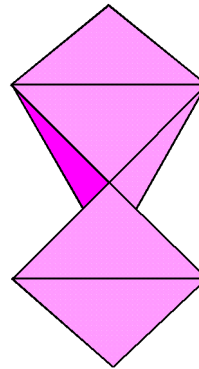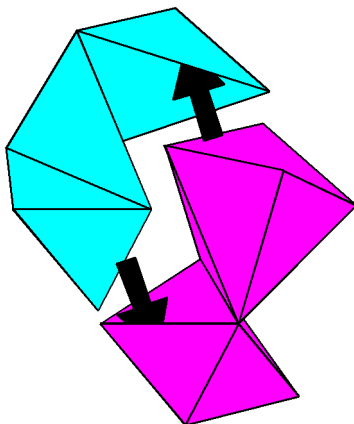
36

37
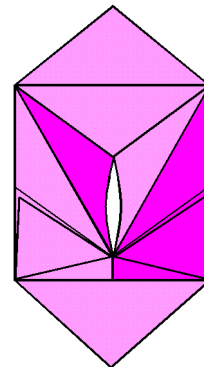
36. Turn the paper around and repeat steps 33 and 34 on the other half of the paper, The result should look like this. Push the centre of both sides inwards to shape the module. It will not hold its shape completely until the modules are assembled.
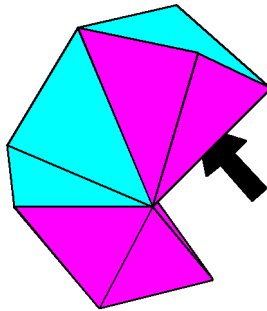
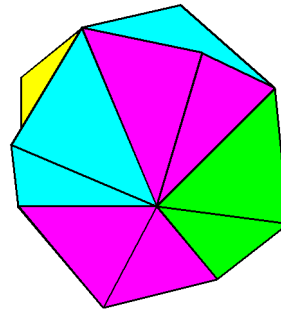37. The finished module will look like this. Make four.

38

38. The first two modules go together like this.

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39

40

39. The arrow indicates where the tab of the third module has to be inserted. Once you have two modules together you will find the remainder of the assembly sequence is interesting but obvious.
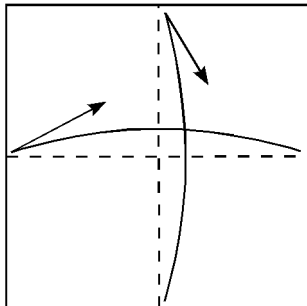
40. When all the modules are in place 4Star will look like this.
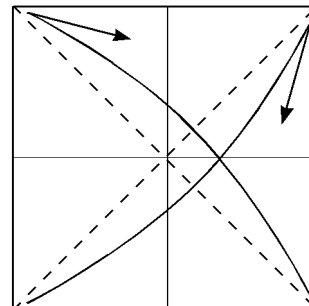
Method 2 - from squares using cuts

You will need four squares of paper in contrasting but complementary colours. You can use either irogami or dyed paper. If you are using irogami begin with your paper arranged white side up.
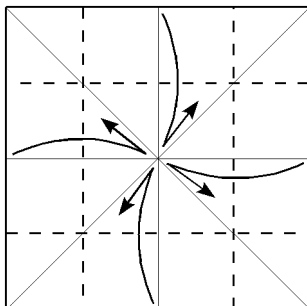
1

2

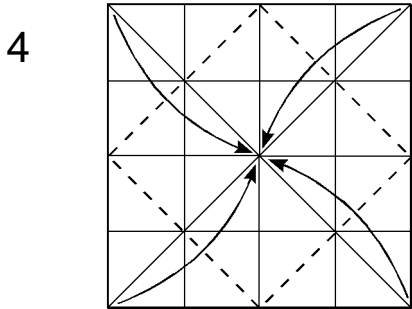1. Fold in half both ways edge to edge, then unfold.

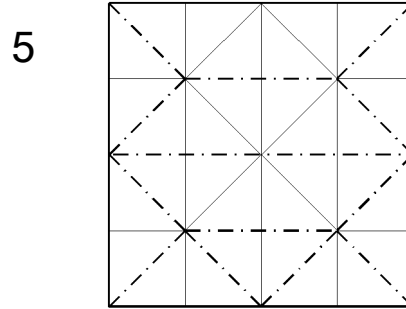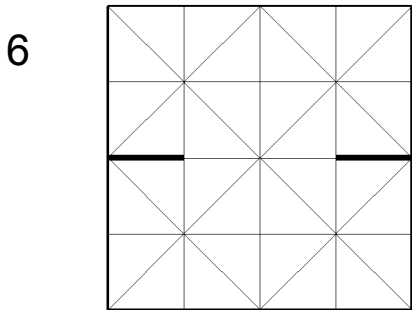2. Fold in half diagonally both ways, then unfold.

3

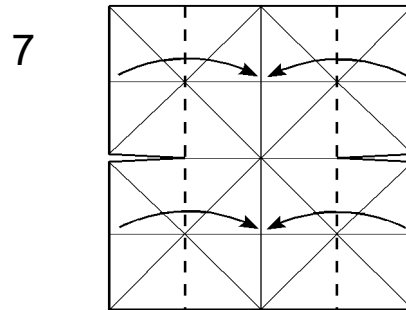3. Fold all four edges into the centre, one by one, then unfold.

4

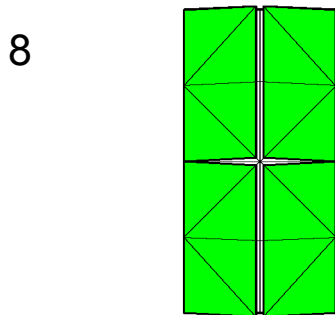4. Fold all four corners into the centre, then unfold.

5

5. Reverse the direction of all these creases to make them into mountain folds.
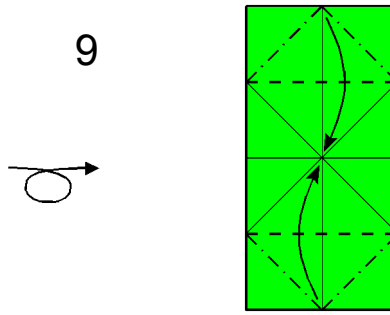
6

6. Cut carefully along the thick black lines.

7

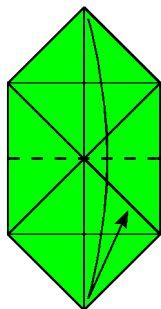7. Fold the right and left edges into the centre using the existing creases.
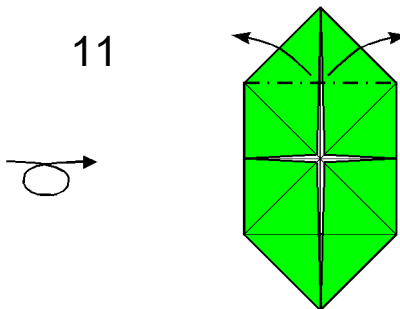
8

8. Turn over sideways/

9

9. Fold the middle of the top edge and the middle of the bottom edge into the centre like this. The result should look like picture 10.
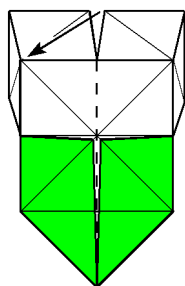
David Mitchell / 4Star

10

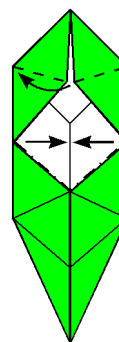10. Fold in half downwards, then unfold. Turn over sideways.

11

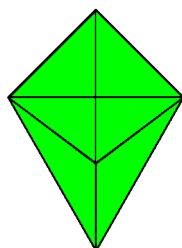11. Open out the top front layers at right angles to form a box-like shape.

12

12. Fold the paper in half so that it becomes a trough. The right hand half of the end of the box slides inside the left hand half.

13

13. Pinch the centre of the trough together and allow the front right flap to slide on top of the front left flap.

14

14. This picture shows what just the top half of the paper should look like now. Turn the paper round and repeat steps 11 through 13 on the other half of the paper. You will need to loosen the folds you have already made to achieve this. Persevere, it does work!
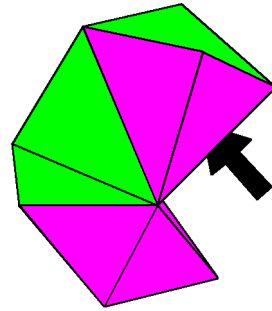
15
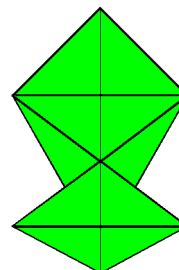
15. When both halves of the paper have been collapsed into shape the module will look like this. Make four. The modules will not completely keep their shape until they have been assembled.
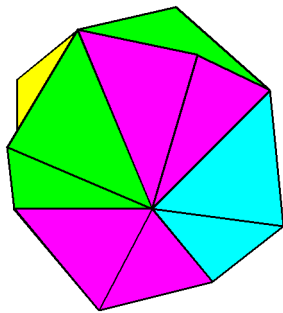
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16
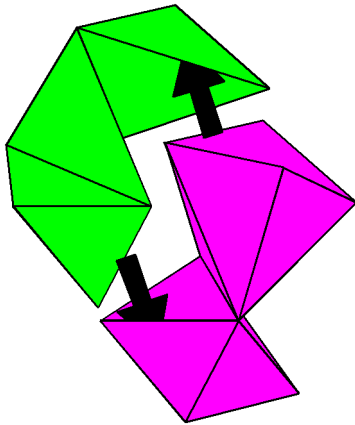
16. The first two modules go together like this.

17

17. The arrow indicates where the tab of the third module has to be inserted. Once you have two modules together you will find the remainder of the assembly sequence is interesting but obvious.

18

18. When all the modules are in place 4Star will look like this.