

Blooming Flower

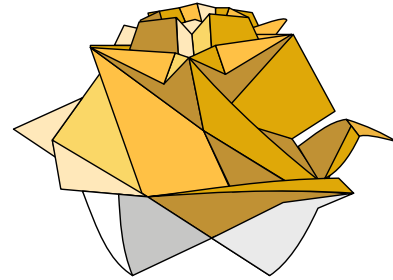
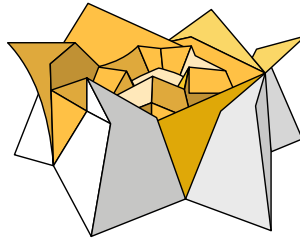
Design by Bill Reyes

Diagrams by Paula Versnick

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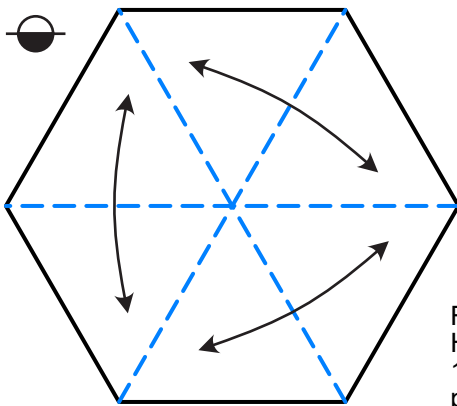
Free Sharing,
No Profit!

This design was taught by Koustubh Oka at the OUSA convention in New York in 2014. He developed the first instructions for the model (photo diagrams), with Bill. I was enchanted by the model when I learned it during the past year.



Unfortunately, Bill Reyes passed away, but before he did, he told Koustubh that his models may be freely shared, but without profit. Let us respect Bill's wishes.

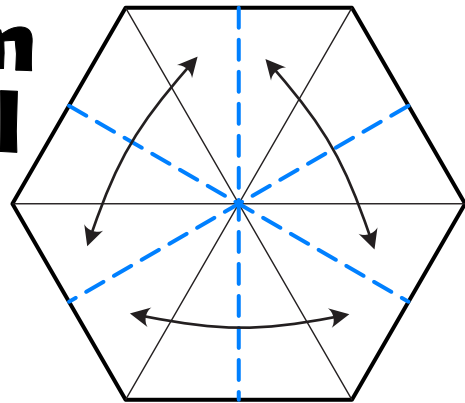
A blue line is a valley fold
(a river is blue and in the valley).
A red line is a mountain fold
(the sunset makes the mountain red).



1. Valley fold the 3 diagonals, side to side.

Action Model

Recommended paper:
Hexagon, size around 17 cm width, sturdy paper, copy paper would be fine. Same color on both sides works well.

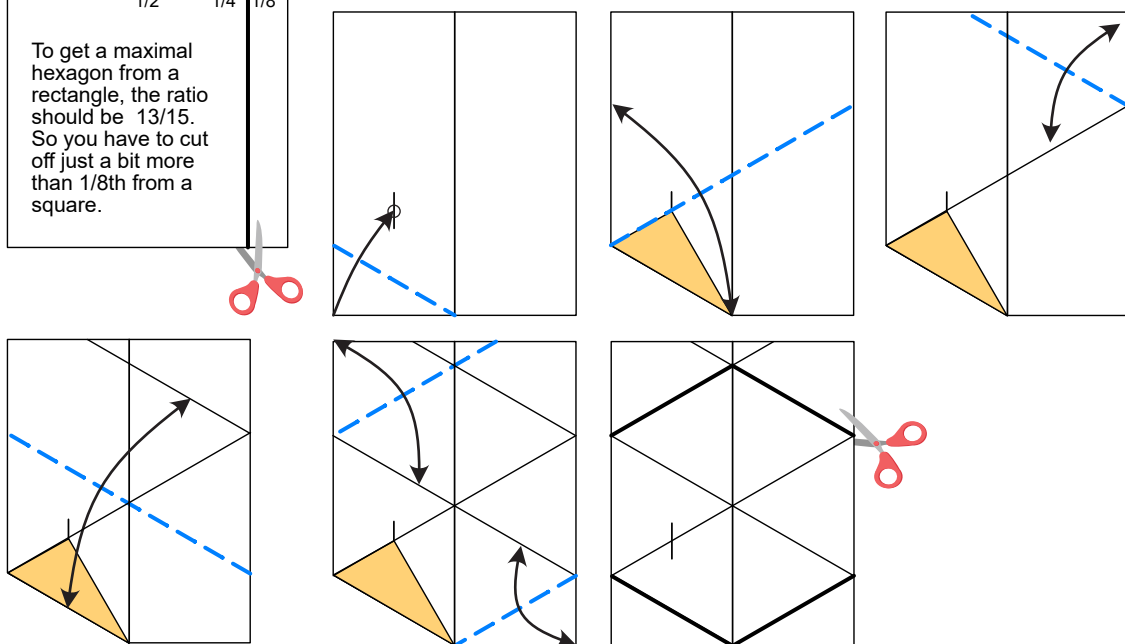


2. Valley fold the other 3 center lines, corner to corner.

How to make a hexagon from a rectangle or square?

To get a maximal hexagon from a rectangle, the ratio should be $13/15$. So you have to cut off just a bit more than $1/8$ th from a square.

Any rectangle, at least 16% longer than wide



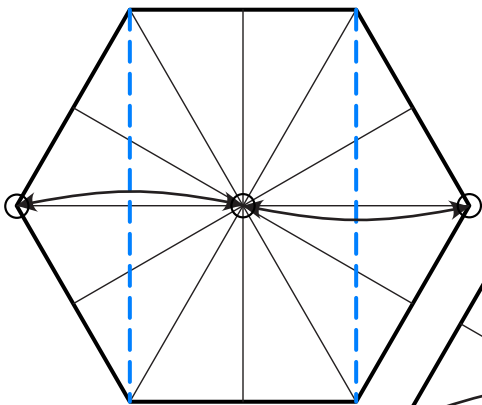
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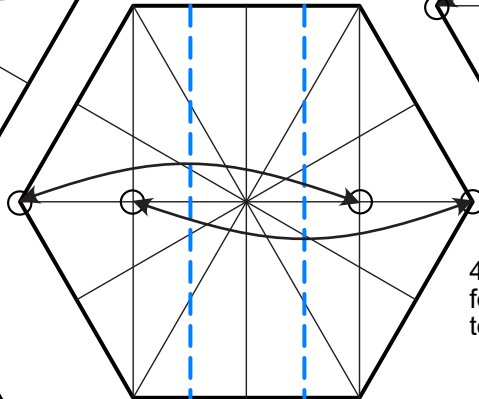
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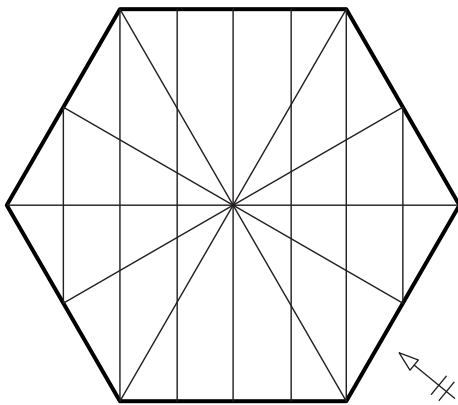
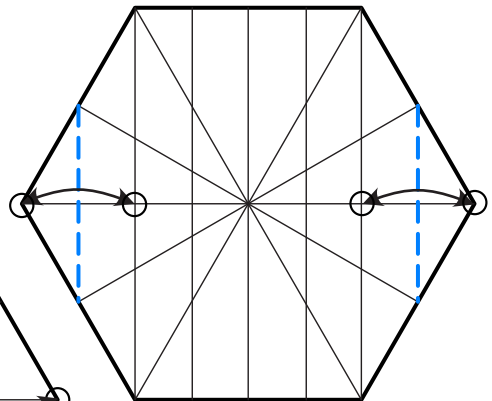


3. Make a division in 4 parts by folding 2 opposite corners to the center of the paper.

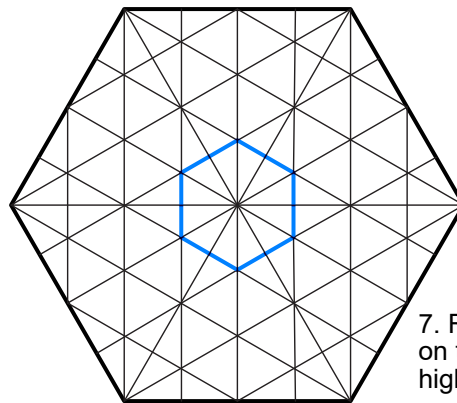
What is needed here is a rotated 8x8 grid! Do it your way and continue with step 7.



4. and 5. Make a division in 8 parts by folding the corners to the last crease and to the first crease.

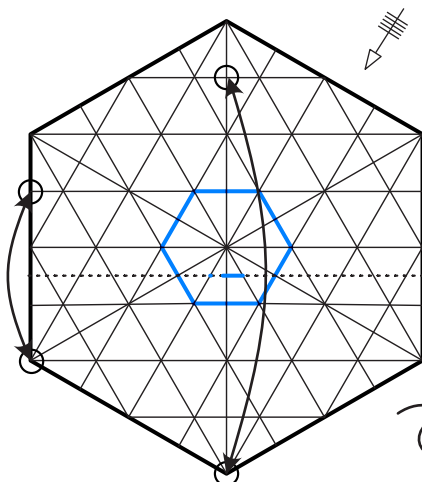


6. Rotating to the next side, repeat step 3, 4 and 5 twice so you get a (rotated) 8x8 grid.

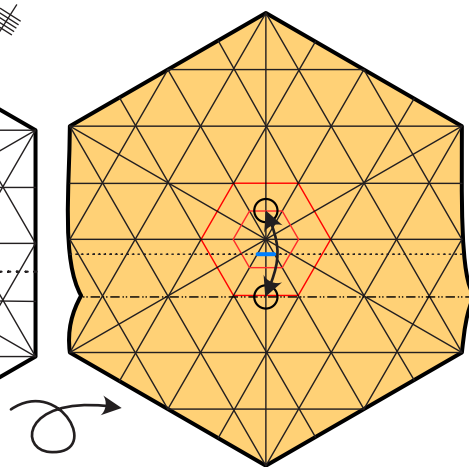


Alternative, try to waterbomb base the whole hexagon (color outside, reverse the diagonals), zigzag the top and do a double sink-unsink! Continue with step 16.

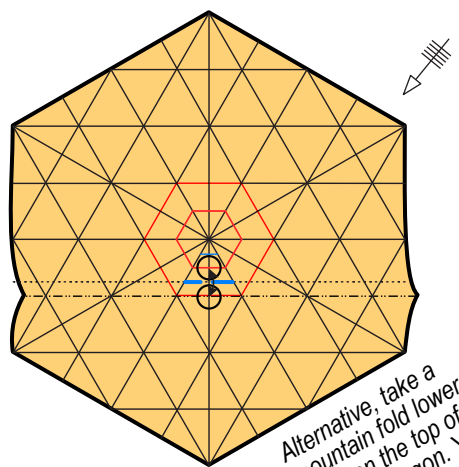
7. Result. Now we concentrate on the smallest hexagon, highlighted in blue.



8. Bring the corner to the farthest horizontal crease, and fold only the middle bit. Repeat this on all sides so you get a small hexagon in the middle. Turn over.



9. and 10. We need 2 more hexagons, one in between the two mountain hexagons and one very small. Pinch the mountain crease and bring it to the far edge of the little hexagon and fold only in the middle. Then bring it to the near edge of the little hexagon and fold only the middle. Repeat on all sides.



Alternative, take a mountain fold lower and put it on the top of the small hexagon. You get the same crease!

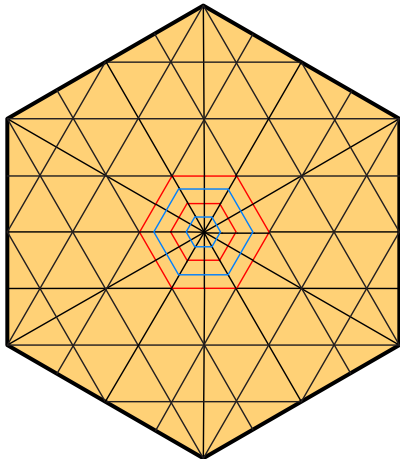
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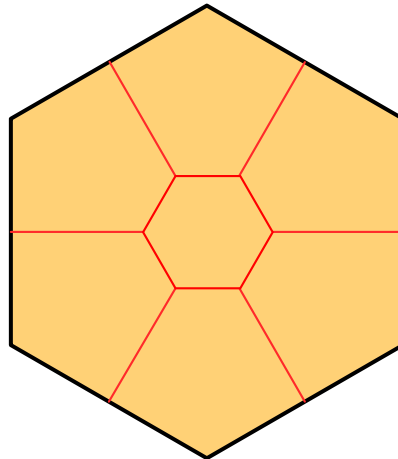
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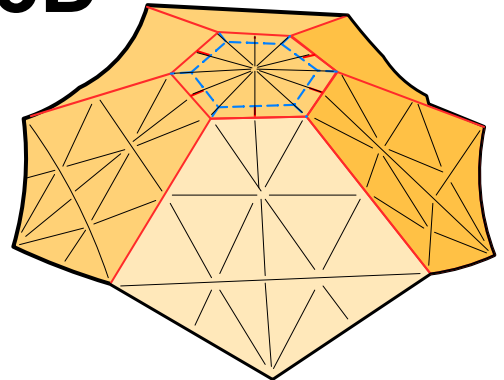


11. Result

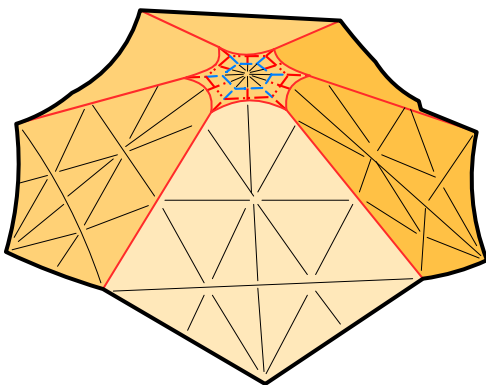


12. To collapse the model we need to start with these folds. The model becomes 3D and looks like a table cloth.

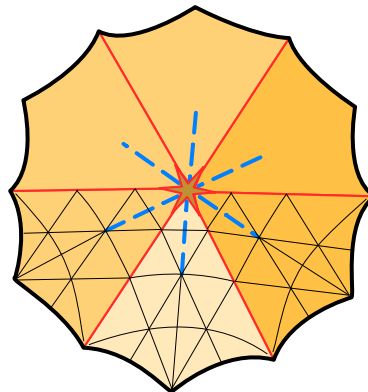
3D



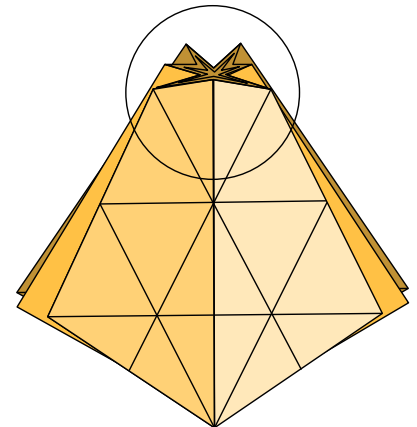
13. Now slowly work your way from the outside to the inside and zig zag the hexagons in the center.



14. Continue the collapse.



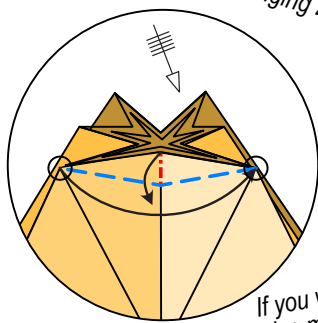
15. Top view. Just before the last collapse the model lies almost flat. Complete the last collapse so that it resembles the next shape, seen from the side.



16. The collapsed state from the side. The next step is enlarged.

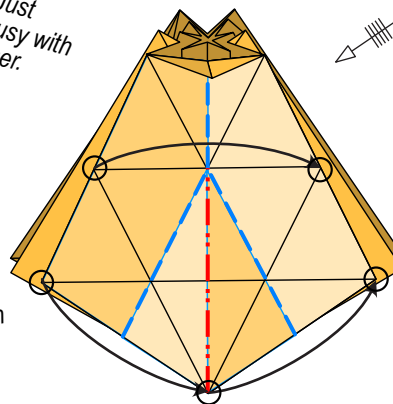
3D

Don't flatten the model! Just flatten the part you are busy with by bringing 2 sides together.

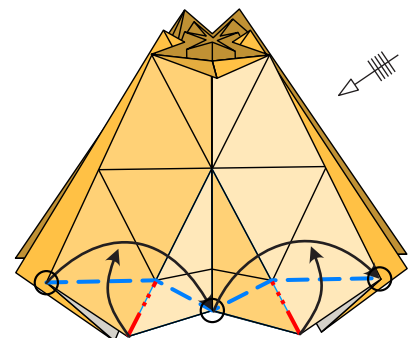


If you wish you can also make petals on the smaller star.

16. Make small inside reverse folds in the outer star as deep as they want to go without forcing the paper. The model will not lie flat.



17. Make reverse folds on existing creases on all sides. Pay attention to the beginning of the mountain fold. That should be crisp.



18. Make smaller reverse folds on existing creases on all sides, 12 in total. Reinforce the folds to make a crisp result.

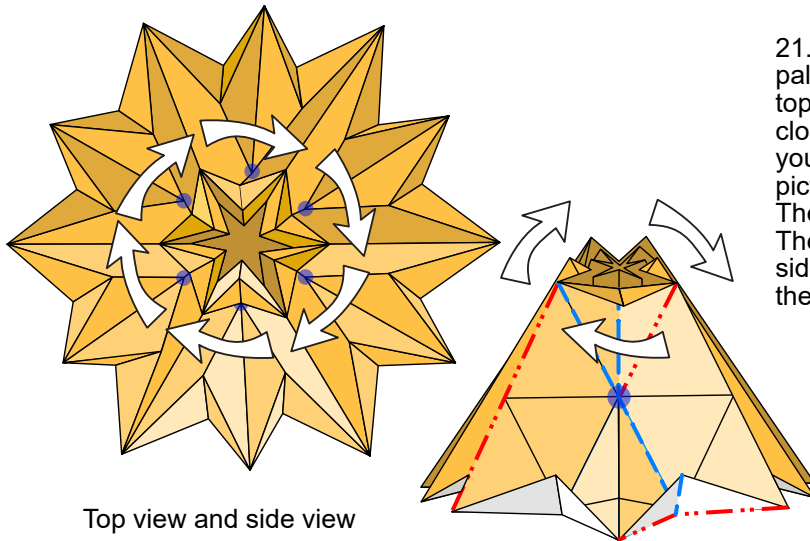
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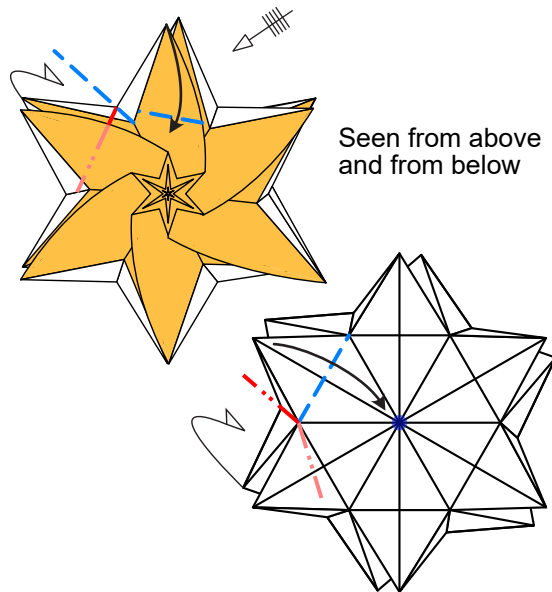
Top view and side view

21. Now hold the model in the palm of your hand and grab the top in your other hand. Turn clockwise and push gently until you get the shape in the next picture.

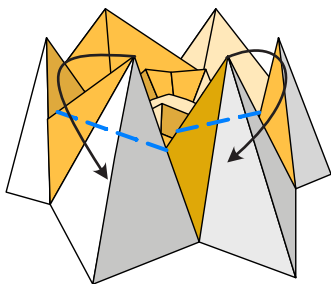
The blue dot is the pivot point. These 6 points, one at each side, should come together in the middle of the model.

22. At the end you have a double six pointed star. Each point has an upper and a lower point.

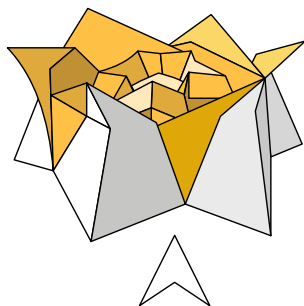
There are two moves at the same time. The lower point goes with a fold to the center of the bottom. The upper point next to it clockwise goes up at the same time, making a petal.



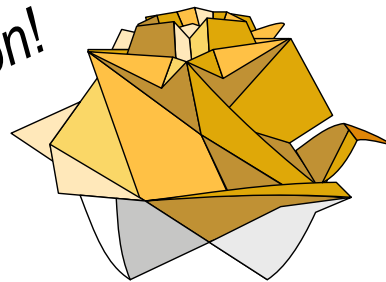
Seen from above and from below



23. Make a soft crease on the petals. The model is finished.



Action!



Action: Push gently on the bottom while spreading the petals. The Flower blooms!