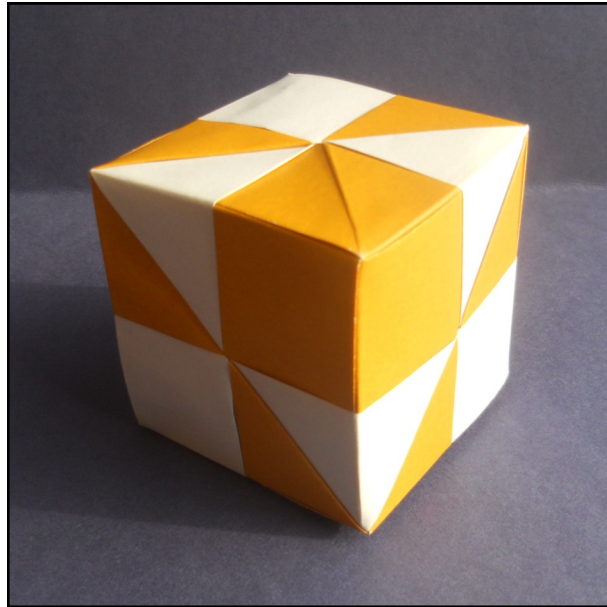


Phoenix Modules and the Phoenix Cube

Designed by David Mitchell

These diagrams show you how to fold Phoenix modules and how to use them to make the 6-part Phoenix Cube. I designed both in 2015.

The Phoenix Cube is made from two sets of three modules. The folding sequence for both modules is the same but in one case you begin with the paper coloured side up and in the other coloured side down.



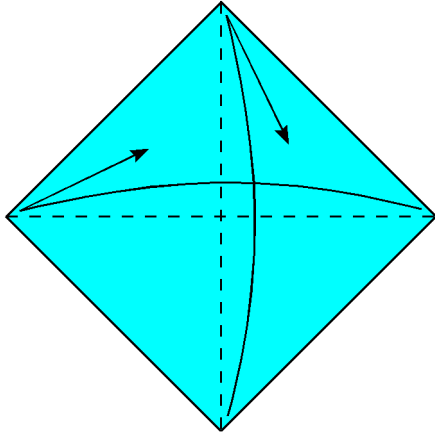
Phoenix modules are triangular letterbox modules. They are just two of the many contrast pattern variants of the basic triangular letterbox module that can be created just by rearranging the creases.

Triangular letterbox modules can also be used to make 12-part and 24-part cubes, alpha and beta 3-part and 6-part silverhexahedra and alpha and beta 12-part 8-point stubby stars. Other forms may also be possible. The range of forms possible from triangular letterbox modules is not, however, anything like as extensive as the range of forms possible from the equivalent parallelogram modules. At the time these diagrams are published I have not made any other form except the 6-part cube so do not know exactly what the effect of making these forms from one, other, or both of the Phoenix modules together, would be.

The name derives from the pattern which appears on each face of the 6-part cube, which I call the Phoenix pattern. This usage previously appeared in my book Paperfolding Puzzles.

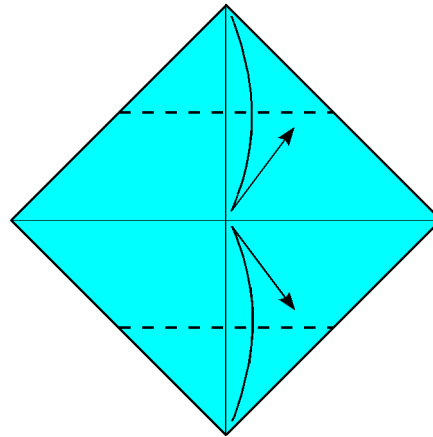
You will need six squares of irogami. The folding sequence for the first set of three modules begins with the paper arranged coloured side up.

1



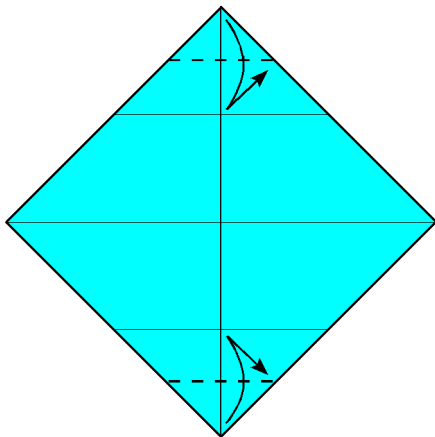
1. Fold in half diagonally in both directions then unfold.

2



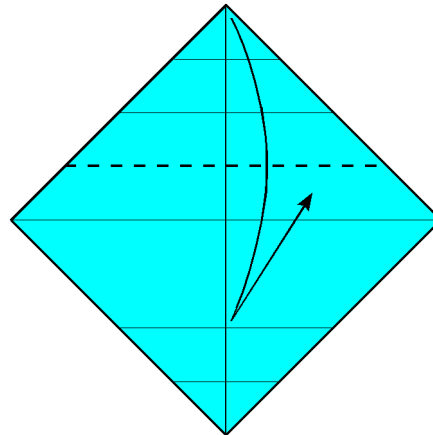
2. Fold both the top and bottom corners into the centre then unfold.

3



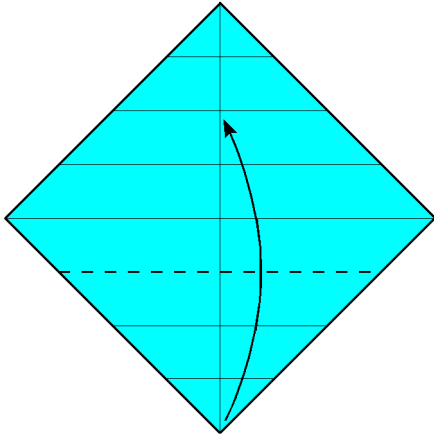
3. Fold the top corner down to the quarter way point, then unfold. Fold the bottom corner up to the quarter way point, then unfold.

4



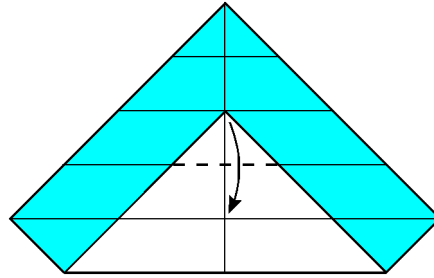
4. Fold the top corner down to the three quarter way point, then unfold.

5



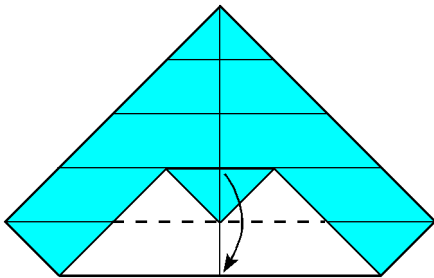
5. Fold the bottom point up to the three quarter way point.

6



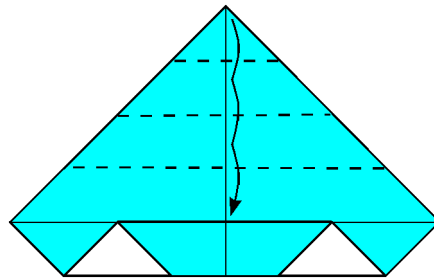
6. Fold the top corner of the front flap downwards using the existing crease.

7



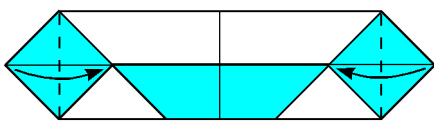
7. Fold the top edge of the front flap downwards using the existing crease.

8



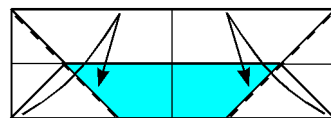
8. Roll the back layer downwards using the existing creases.

9

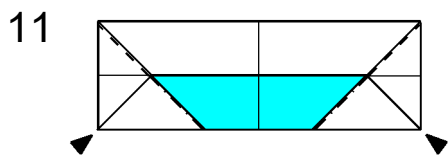


9. Fold both outside corners inwards like this.

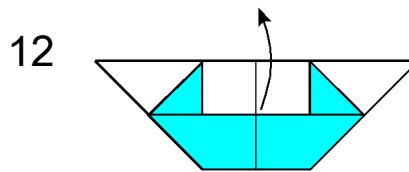
10



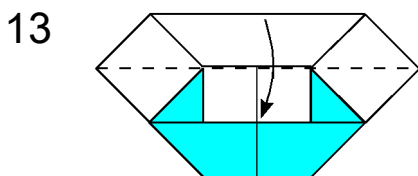
10. Fold both the bottom outside corners inwards like this then unfold.



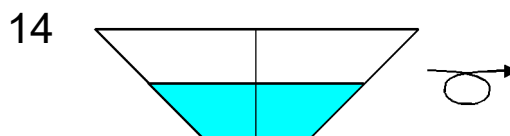
11. Turn both bottom corners inside out between the other layers using the creases made in step 10.



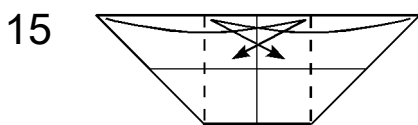
12. Pull out the middle top layer.



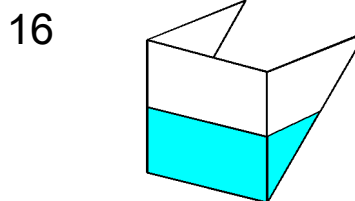
13. Fold the top edge downwards using the existing crease.



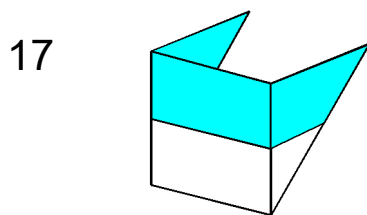
14. Turn over sideways.



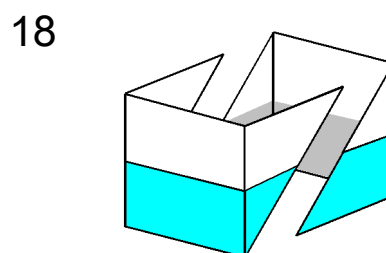
15. Fold both top corners inwards like this, then unfold.



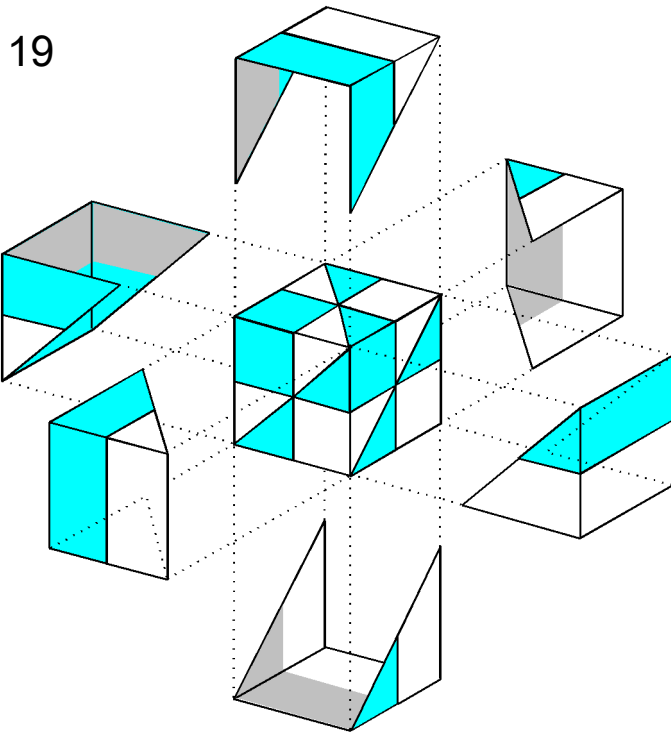
16. The finished module should look like this. Make three.



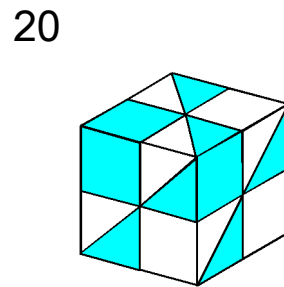
17. You will also need to make a second set of three modules in which the position of the white and coloured parts are reversed. You can do this by following the same folding sequence but beginning with your paper arranged coloured side down.



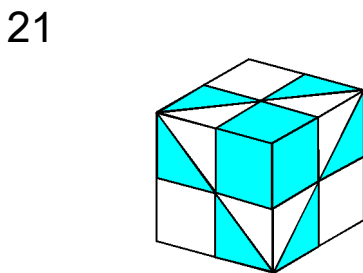
18. You will need three of each type of module.



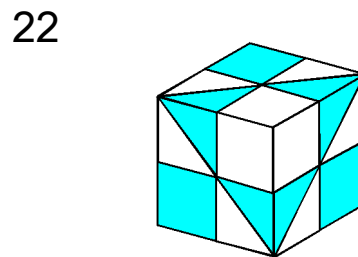
19. Put the six modules together like this.



20. The finished Phoenix Cube will look like this from one angle ...



21. but like this from another.



22. The reverse of the cube will look like this.

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