

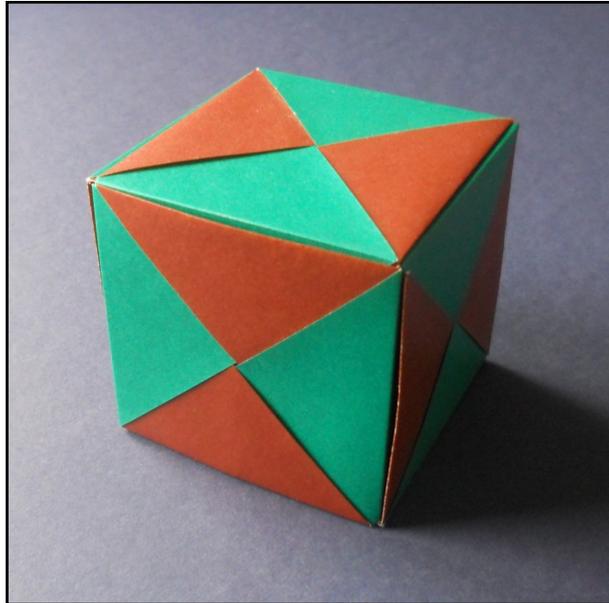
## 2-Fold Cube

Designed by David Mitchell

This cube is an example of minimalist modular origami. Each of the 24 modules required to form the cube is made using only two folds.

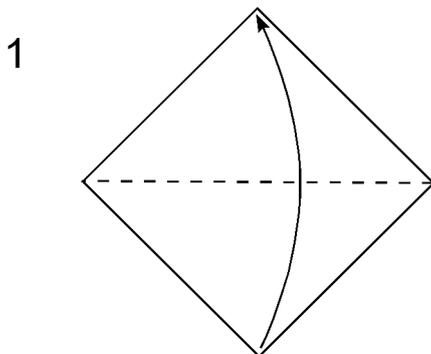
Tony O'Hare originally used the Two Crease Module to create a 4-part coaster. In 1995 I found that 24 will go together to make a stable cube.

The modules are not completely straightforward to assemble, especially at the end. Picture 11 shows you exactly how they go together but not all the details of how to do it. I leave this as a small puzzle to make the design more entertaining to construct.



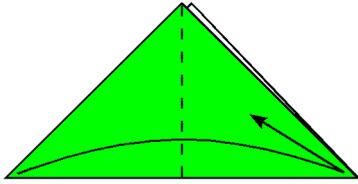
For the version explained in the diagrams, you will need four small squares in each of six contrasting but complementary colours or, for the version shown in the photo, twelve small squares in each of two colours. It is also possible to make a three colour version using eight modules in each of three colours.

If you are using irogami begin with your paper arranged white side up.



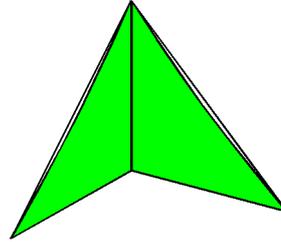
1. Fold in half upwards.

2



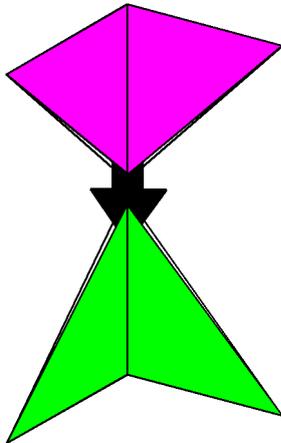
2. Fold in half sideways, then unfold to right angles.

3



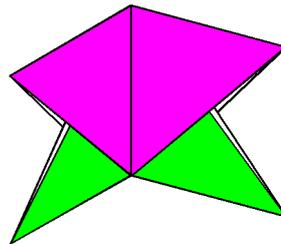
3. The module is finished. Make four in each of six contrasting but complementary colours.

4



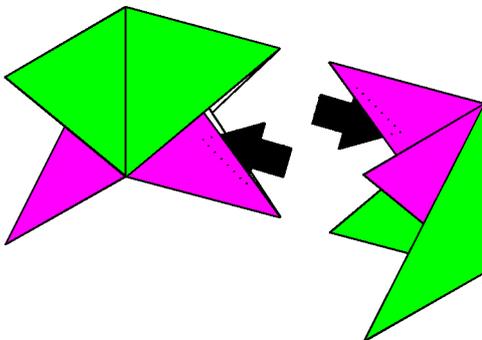
4. Two modules go together like this. Note that the layers of the top module go in front and behind the layers of the lower module. (You can make an essentially similar 2-Fold Cube if you interleave the layers but the intermediate stages would look a little different.)

5



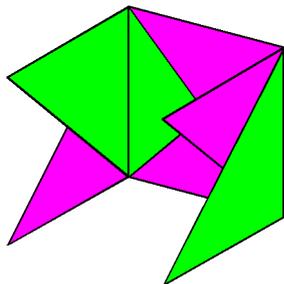
5. Make four sub-assemblies that look like this using the modules of just two colours.

6



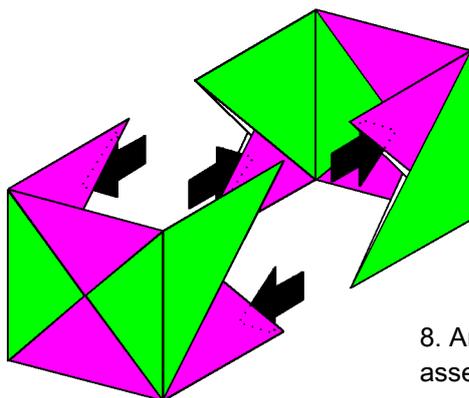
6. Two sub-assemblies go together like this ...

7



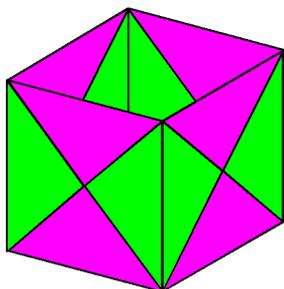
7. ... to form a larger sub-assembly.

8



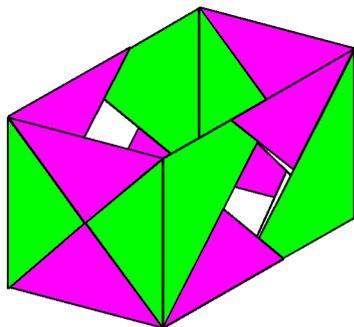
8. And two of the larger sub-assemblies go together like this ...

9



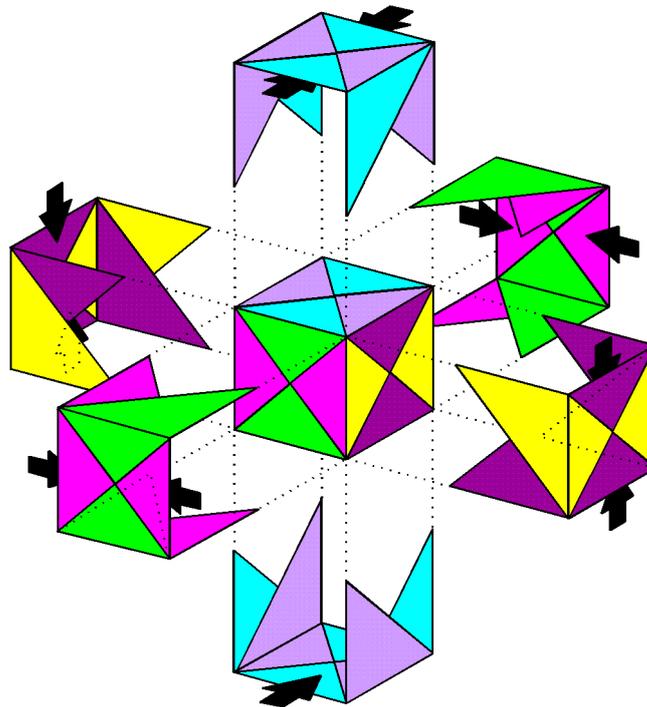
9. ... to form a square section tube. The 2-Fold Cube is made by interweaving three of these tubes, each made from modules of two different colours, in a Borromean relationship.

10



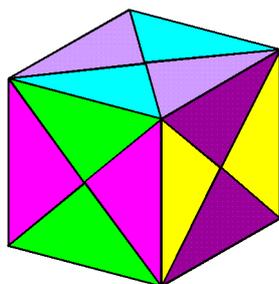
10. You will find the cube easier to assemble if you interweave the tubes without pushing the two halves firmly together. However in this state they tend to fall apart quite easily. Therein lies the challenge.

11



11. This exploded diagram shows all the larger sub-assemblies and how they fit together to create the cube.

12



12. The finished six colour 2-Fold Cube will look like this.

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