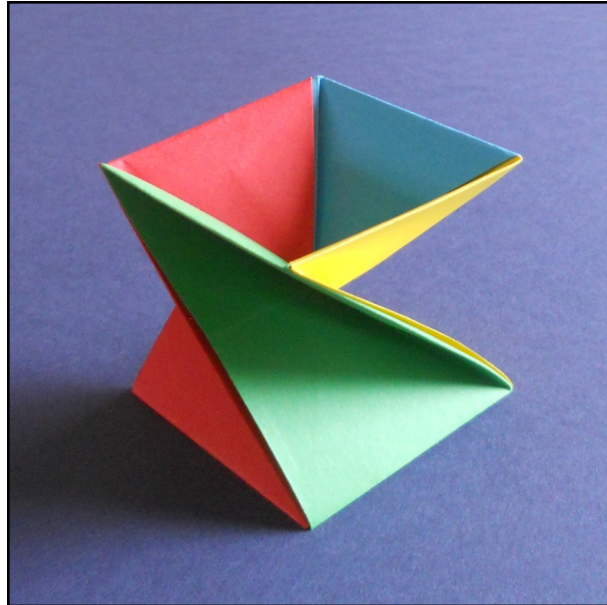


The Colour-Change Collapsible Cube

Designed by David Mitchell

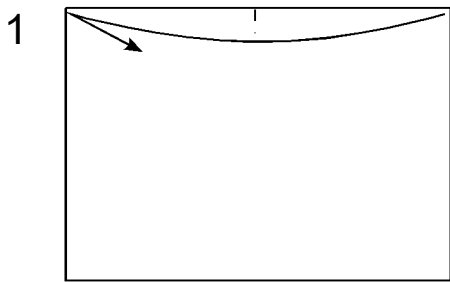
The Colour-Change Collapsible Cube is a 4-part modular design from 1993 in the form of a tube that collapses to a rather odd shaped cube. Alternatively, it is a rather odd shaped cube that squashes flat and can then be stored in an envelope. The design can also be manipulated while laid in the palm of the hand to change the colour visible on the top surface. This effect is quite magical when performed well.



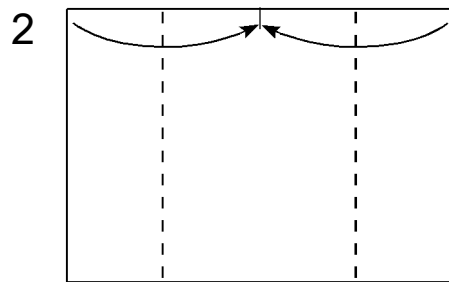
The inspiration for this design came from Larry Hart 's 3D Stand, from 1986, a one-piece twisted square section tube. I changed the dimensions of the tube and made it modular to achieve the colour-change effect.

You will need four silver rectangles in four contrasting but complementary colours. If you are going to manipulate the colour-change in the way shown in steps 19 to 21 then the best size to use is probably A7, which is one quarter A4. If you only have access to US letter sized paper you can easily trim your paper down to silver rectangle proportions. A pdf download which shows you how to do this is available from the Utilities section of the Origami Heaven Diagrams and Downloads page. Note that to make a version of the Colour-Change Collapsible Cube that is easier for left-handers to manipulate you simply make all the folds in mirror-image.

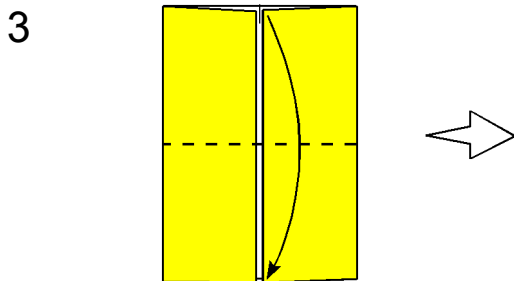
For clarity the diagrams show one side of the paper coloured and one white but the design works equally well from paper that is the same colour both sides.



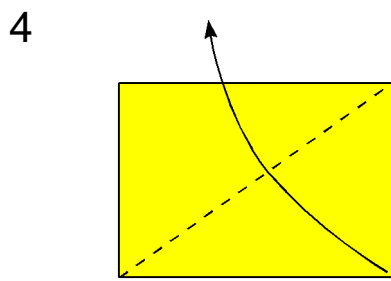
1. Make a tiny crease to mark the centre of the top edge.



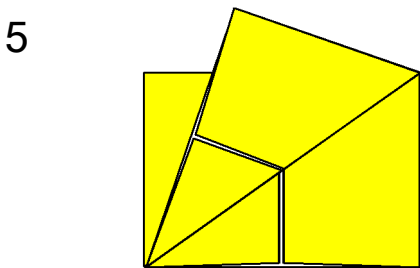
2. Fold both outside edges to the centre using the tiny crease made in step 1 to locate the folds.



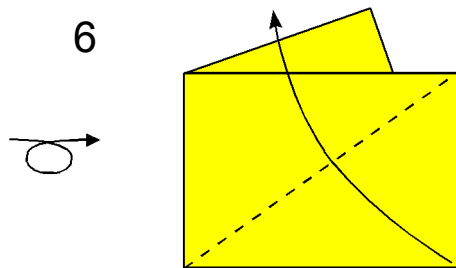
3. Fold in half downwards.



4. Fold the two front layers in half diagonally upwards making sure the crease intersects the corners exactly.

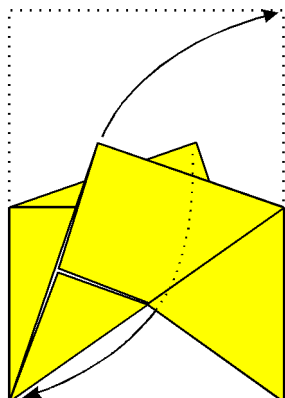


5. Turn over sideways.



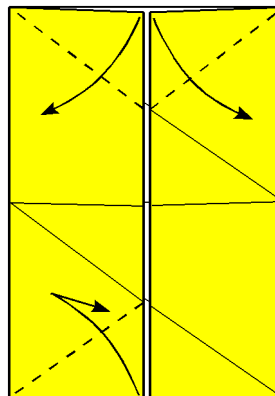
6. Repeat step 4 on the new front layers.

7



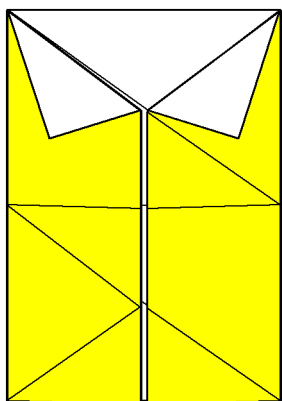
7. Open out the last two folds in front and behind.

8



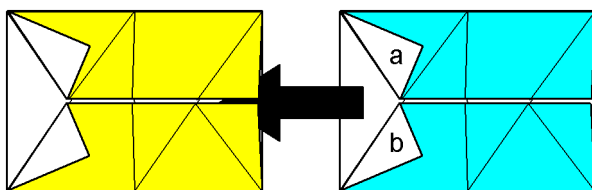
8. Fold the inside top corners of both front flaps downwards and outwards as shown. One of the creases you need is already there but you will need to make the other. Also fold the middle bottom corner of the front left hand flap upwards and outwards in a similar way. Undo this last fold only.

9



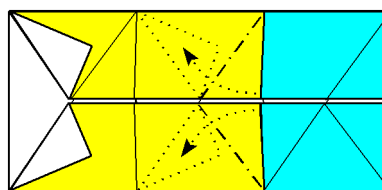
9. The first module is finished. Make all 4.

10



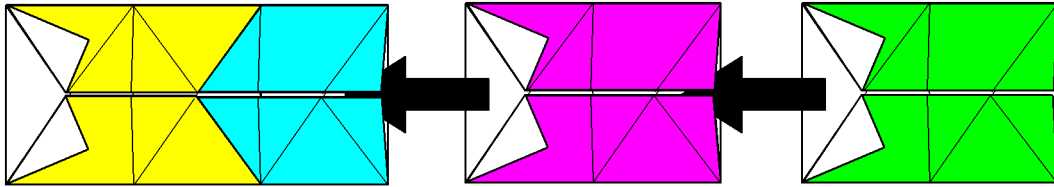
10. Insert the left hand half of one module inside the right hand half of another.

11



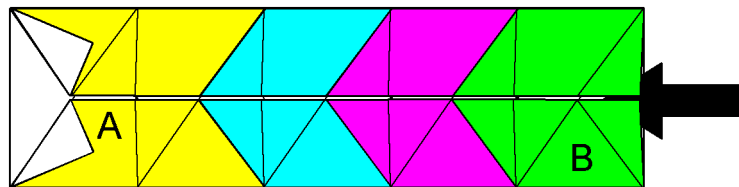
11. Fold the two small flaps at the right end of the left hand module backwards underneath flaps a and b (see picture 10) of the right hand module. This will lock the two modules firmly together.

12



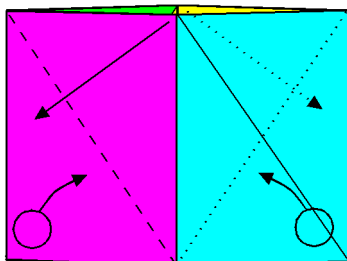
12. Add the remaining two modules in a similar way to form a chain.

13



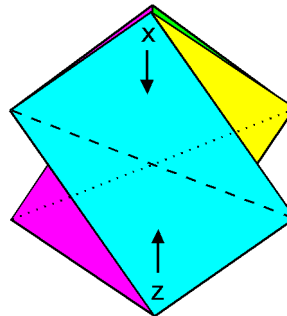
13. Form the chain into a square section tube by inserting the left hand side of module A inside the right hand side of module B.

14



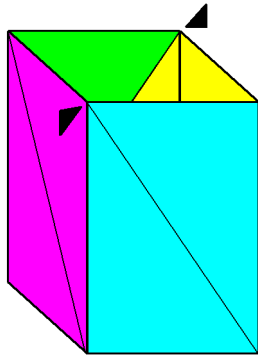
14. Interlock the last set of flaps inside the tube then squash flat.

15



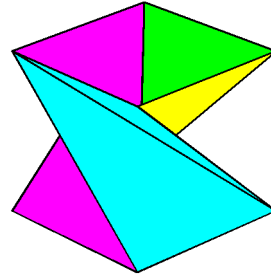
15. Take hold of the two lower corners of the model with your right and left hands at the points marked with circles. Gently rotate your hands towards each other in the direction of the arrows so that the model collapses into the form shown in picture 16.

16



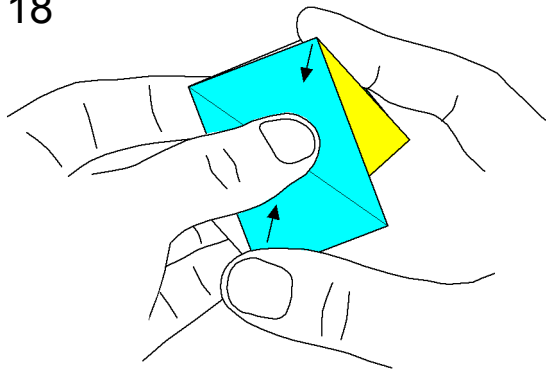
16. Separate the front and back layers at both the top and the bottom of the model then hold the model between the thumb and index finger of one hand at points x and z. Gently squeeze the points towards each other and the Collapsible Cube will form.

17



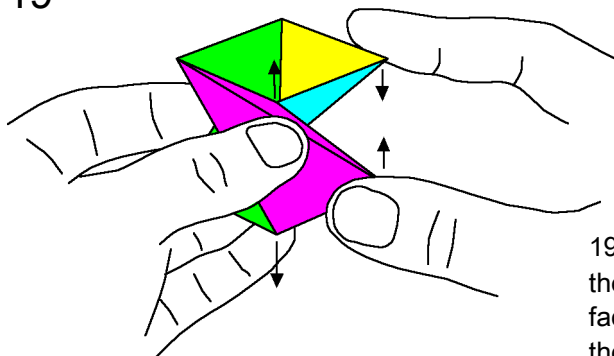
17. The Colour-Change Collapsible Cube is finished.

18



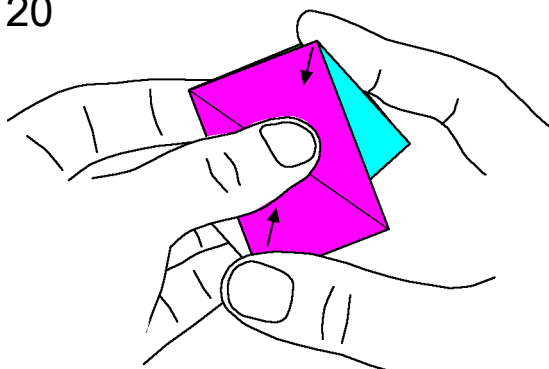
18. To work the colour-change flatten the Collapsible Cube and hold it loosely in your left hand like this. With your right thumb and index finger separate the front and back layers at both the top and the bottom of the model then squeeze the points towards each other to form the cube. Relax the grip of your left hand as you do this and allow the model to rotate to the right.

19



19. Now use your left thumb to flatten the cube so that the second coloured face replaces the first at the front of the model.

20



20. If you are careful not to flatten the model completely you will find it easy to transfer your right thumb and index finger to the new top and bottom corners and to repeat steps 18 and 19 to bring the third coloured face into view. With a little practice you will find it easy to cycle smoothly - and repeatedly - through all four coloured faces in this way.

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