

# Tower of Columbus Cuboids

Designed by David Mitchell

The Columbus Cuboid is a cuboidal version of my Columbus Cube design.

The basis of the Columbus Cuboid is a cuboidal version of the Paul Jackson Cube, which, for obvious reasons, I will call the Paul Jackson Cuboid.

Paul Jackson Cuboids, and hence also Columbus Cuboids, can theoretically be of any proportions. However, if the height of Columbus Cuboids is too long in relation to their width, they will not stand or stack successfully unless weighted internally in some way.

Paul Jackson Cuboids and Columbus Cuboids do not need to be square in section, in fact, all three sets of faces can be of differing proportions. Not all the Columbus Cuboids in a stack need to be of identical size and shape. Stacks of Columbus Cuboids can also be used to create walls and forests in the same way as stacks of Columbus Cubes.

These diagrams show you how to make Paul Jackson Cuboids and Columbus Cuboids from silver rectangles but similar rectangles such as US sized letter paper, or US sized letter paper cut into halves or quarters, will work equally well.

The Tower of Columbus Cuboids was designed in 2015.

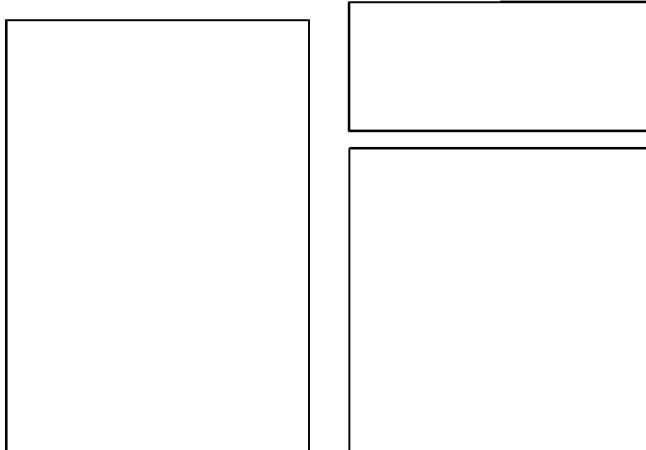
It seems likely that both types of cuboid can be substituted for cubes in other types of macromodular sculpture.



# Making the Paul Jackson Cuboid

You will need three identical oblongs of paper, one of which is then cut down to a square. The relationship between the sizes of the oblongs and the square is shown in picture 1.

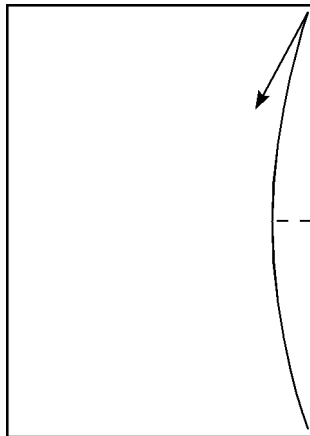
1



1. Begin with three oblongs obtained by cutting A4 or US letter sized paper into quarters. Cut the top off one of the oblongs to leave the largest possible square. The small oblong is not required in this design.

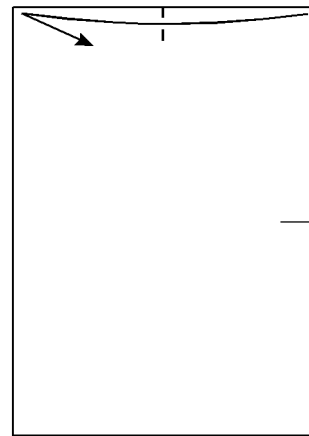
## Folding the A module

2



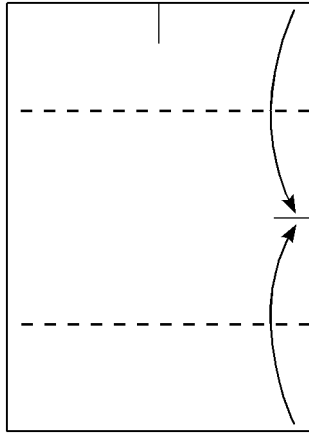
2. Start with one of the oblongs. Make a tiny crease to mark the centre of the right hand edge.

3



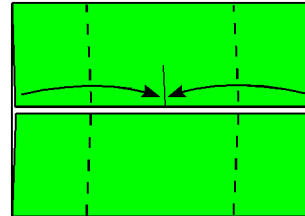
3. Make another tiny crease to mark the centre of the top edge.

4



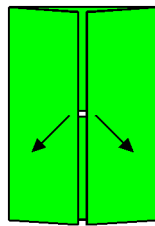
4. Fold the top and bottom edges into the centre using the crease you made in step 2 to locate the folds.

5



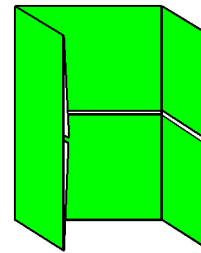
5. Fold both outside edges into the centre using the crease you made in step 3 to locate the folds.

6



6. Open up both front flaps at right angles.

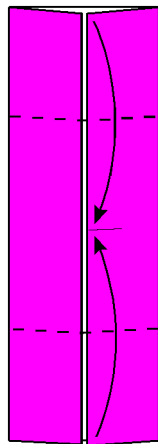
7



7. The A module is finished. Make two.

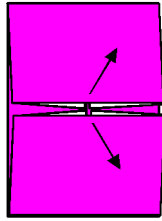
### Folding the B module

8



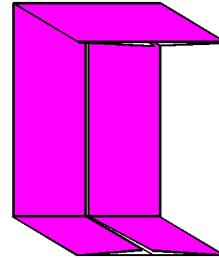
8. Begin with the second oblong. Follow steps 2 and 3 of the instructions for the A module then fold both outside edges into the centre using the crease made in step 3 to locate the folds.

9



9. Open out both front flaps at right angles.

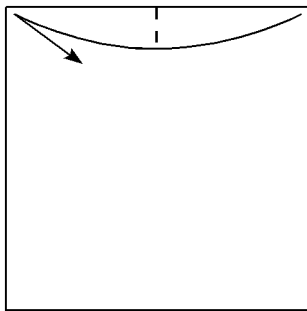
10



10. The B module is finished. Make two.

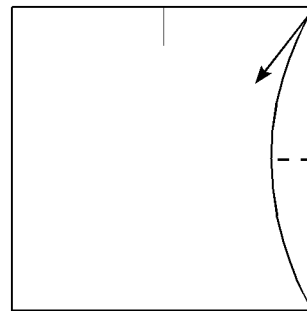
### Folding the C module

11



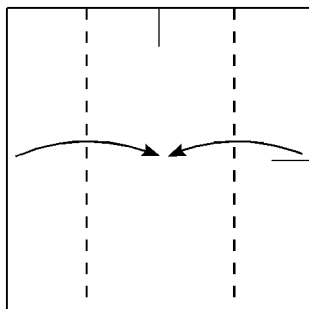
11. Make a tiny crease to mark the centre of the top edge.

12



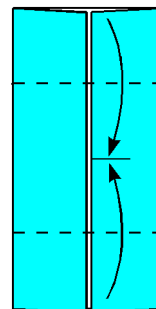
12. Make a second tiny crease to mark the centre of the right edge.

13



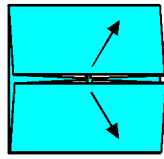
13. Fold both outside edges into the centre, using the crease made in step 13 to locate the folds

14



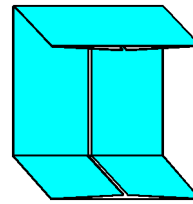
14. Fold the top and bottom edges inwards, using the crease made in step 12 to locate the folds.

15



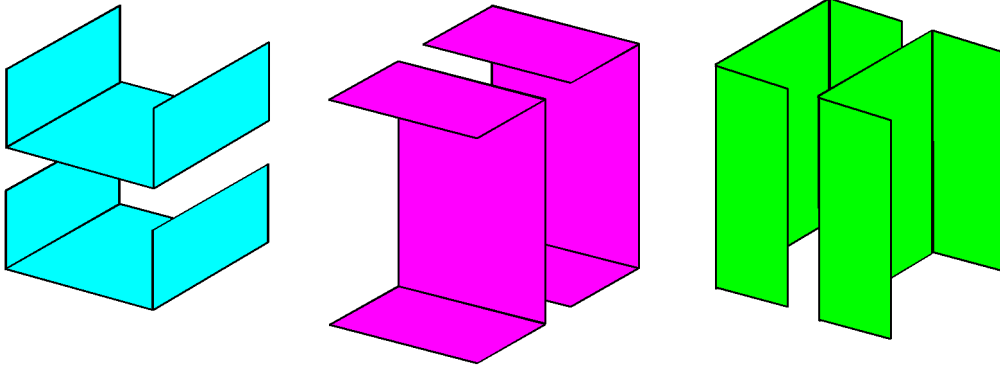
15. Open out both front flaps at right angles.

16



16. The C module is finished. Make two.

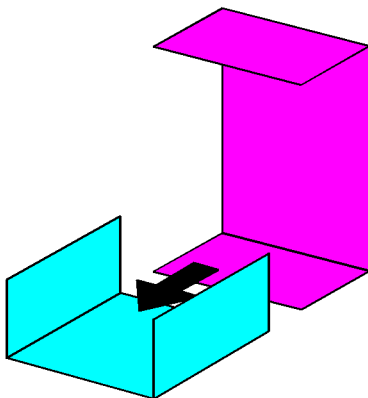
17



17. You should now have a set of six modules, like this.

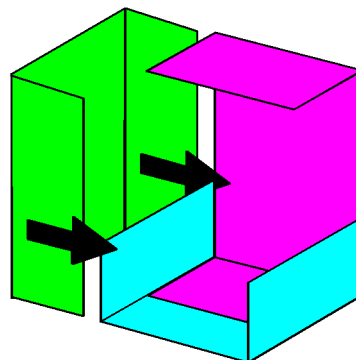
### Putting the modules together

18



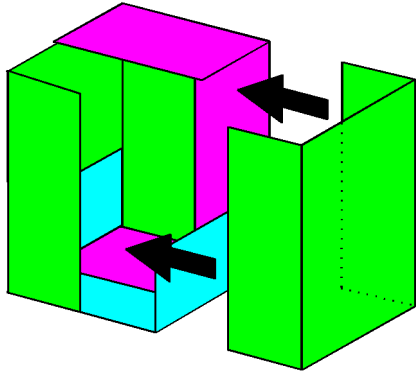
18. Slide a B module into a C module, like this.

19



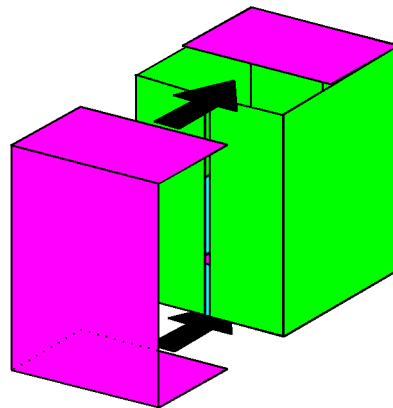
19. Add the first A module like this. Make sure all the arms go inside the form.

20



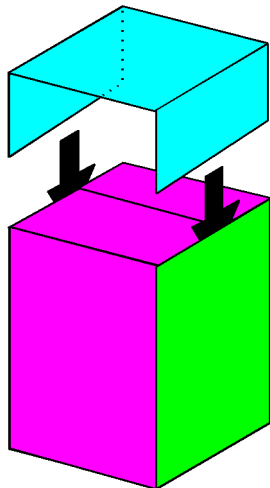
20. Add the second A module in a similar way.

21



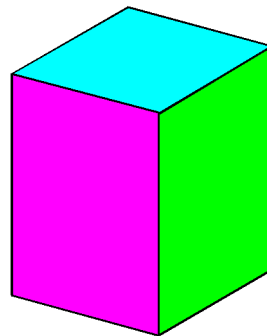
21. Add the second B module. Note that the arms of the two B modules will overlap inside the design.

22



22. Finally add the second C module and settle all the modules gently into place.

23



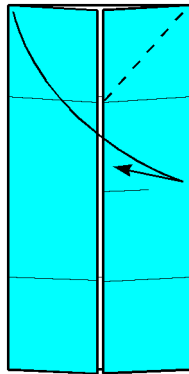
23. The Paul Jackson Cuboid is complete.

## Making the Columbus Cuboid

First make the six modules you would need to make a Paul Jackson Cuboid. Four of these modules need to be altered, one only very slightly, before the Columbus Cuboid can be assembled.

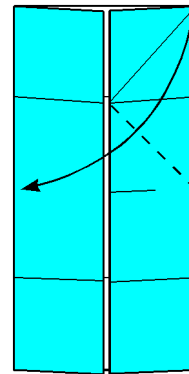
### Altering the C module

24



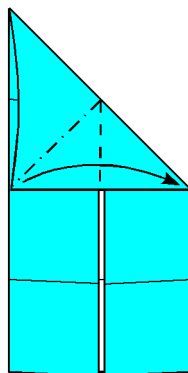
24. Open out one of your C modules to this position. Fold the top edge onto the right edge but only crease the upper half of the fold. Unfold.

25



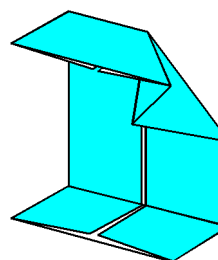
25. Fold the top edge onto the left edge but only crease the lower half of the fold.

26



26. Fold the top layer in half from left to right and form the module into the shape shown in picture 27.

27

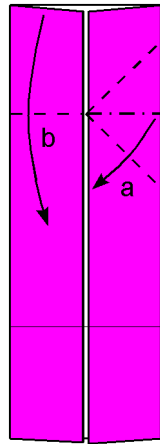


27. This is what the altered C module should look like.

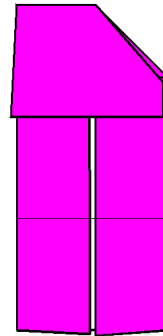
## Altering the A and B modules

Both the other modules need to be altered to invert one corner in a similar way. The A module is easy to adapt but the B module is slightly more tricky.

28



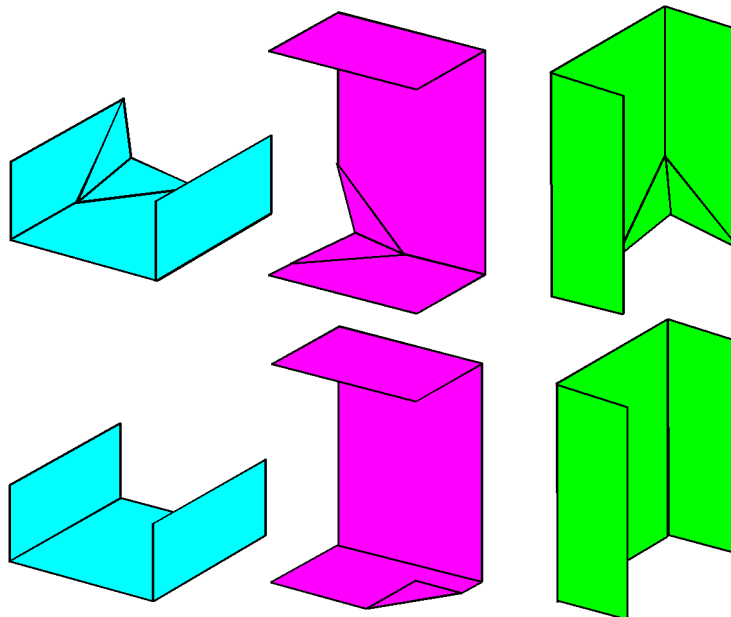
29



28. Fully unfold the arms of the B module so that it looks like this. Make fold a first then make fold b and flatten the module to look like picture 29.

29. Lift up the top flap at right angles. Fold in the bottom arm at right angles. You should now have a set of six modules that look like picture 30 below.

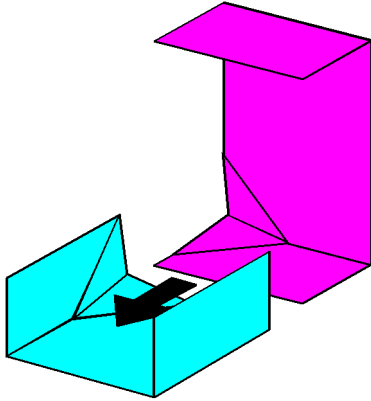
30





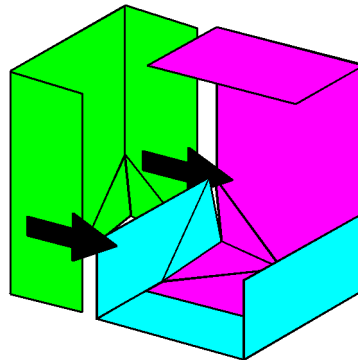
## Putting the modules together

31



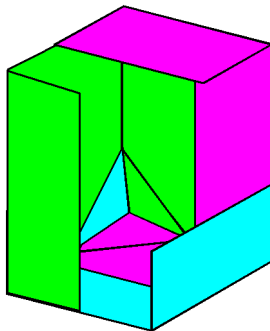
31. Place the adapted B module inside the adapted C module, like this.

32



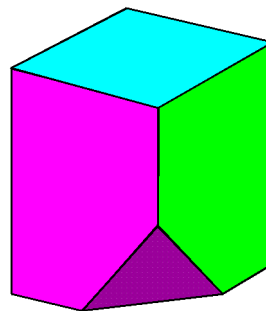
32. Add the adapted A module like this to completely form the inverted corner.

33



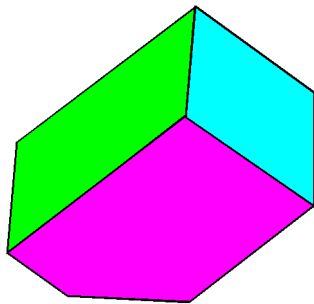
33. Add the remaining three modules in the way shown in steps 20 to 22. Note that because the arms of the two B modules will overlap inside the design the second module cannot be added unless you make a small fold in the bottom arm in the way illustrated in picture 30.

34



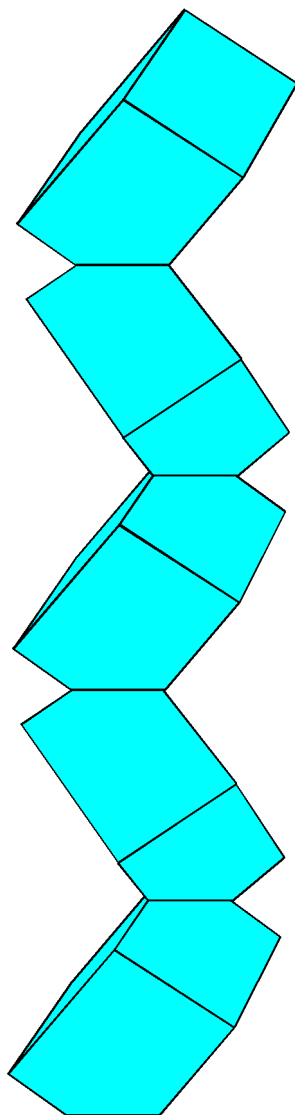
34. The Columbus Cuboid is finished.

35



35. The Columbus Cuboid will stand on the inverted corner like this.

36



36. Provided they are accurately folded, Columbus Cuboids will stack into a Columbus Cuboid Tower, like this.

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