## Towers of Hanoi

*This is quite a fun game! 4 squares of paper altogether are needed. Use a 30cm square of paper backed foil or tissue-foil for the pole. The blocks can be folded from regular origami paper.* 









1. White side up. Valley fold upwards.



2. Precrease.



5. Precrease heavily.

3. Valley to centre.



6. Petal fold two flaps down.



4. Precrease sides

along angle bisectors.



7. Hold the two points, and pull...

8. ..and the model becomes 3D. Wahey!!! Then rabbit ear a point to flatten the model.

9. Valley.





11. Precrease heavily.



12. Half petal fold upwards.









13. Swing down.



16. Blunt corners. The top is a closed sink so just stuff the lot inside. The bottom is a reverse fold.





17. Valley another point down.



15. Precrease very heavily.



18. Repeat steps 11-14 on this point.







19. Swing over.



22. 3-D view. Reverse two points inside to match the height of the central point.

20. Repeat steps 10-16 in mirror image on the right side.



23. Round and shape poles.

21. Fold all poles at an upright position.



24. Completed block pole.

## Blocks

Start with 15 cm, 12.5 cm and 10 cm squares.



25. White side up. Precrease.



26. Valley noting the intersecting creases.



27. Mountain behind in accordance to the corner of the coloured segment.



28. Unfold.



29. Precrease.







32. Precrease.



30. Precrease to centre.



33. Valley to centre. Next drawing is larger.





37. Mountain beneath.



40. Mountain behind.



38. Mountain behind.



41. Valley.

39. Valley.



42. There is a point beneath. Insert it into any of the pockets at the end of the ring to lock.



44. Completed block. Make two more.



The aim is to move the three blocks from the first pole to the end pole in as few steps as possible. The rules is that

- 1) Only one block can be moved at a time.
- 2) Never place a block on top of another smaller block.

The lowest number of moves for this task is **7**. If you desire the solution, then flick through the next page!

## Solution





STEP 3.

STEP 4.



STEP 5.



STEP 6.



STEP 7.



I first learned about this puzzle during the lecture in Java programming to illustrate an example of recursion. Having the idea to create an origami version came about years later after doing some referal through my old Java textbook.

This model is only a simple solution of 3 blocks, the theory is that where more blocks are added, it would be more time consumming to move the lot from the first to the last pole. I hear some Budhist monks in Hanoi are working on moving 64 blocks. The legend states that when all 64 blocks are moved, the world will come to an end.

As a challange, you can alter the size of the paper to create larger and smaller size blocks to move around the poles.

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