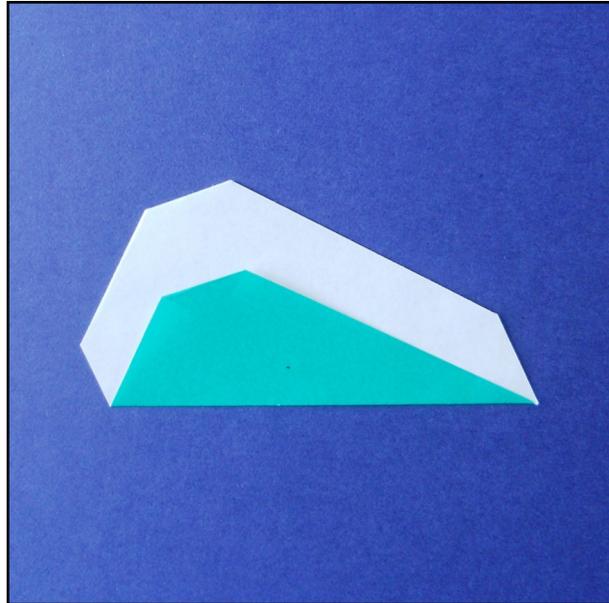


# Simple Solids

Designed by David Mitchell

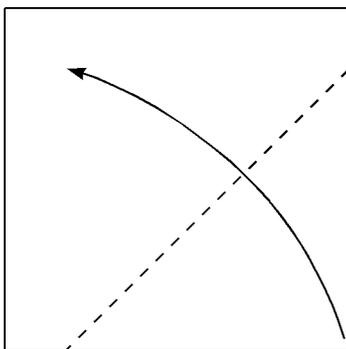
Simple Solids are two dimensional pictures of three dimensional solids made by folding square sheets of irogami. One side of the solid is made from the coloured side of the paper and the other visible sides are suggested using an outline made from the white side of the paper. The edges within the white outline area are not indicated with creases and have to be added using the imagination.



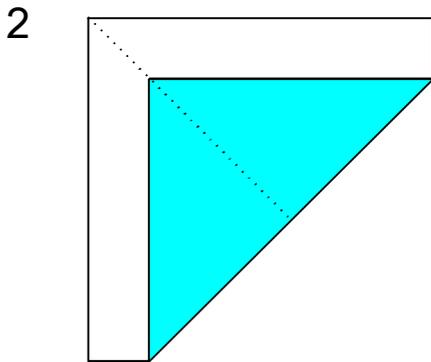
Despite this minimalistic simplicity the technique is a versatile one. These diagrams explain how to make a cube, cuboids, a handy box, pyramids, prisms, a wedge and an impossible object using this method. My Paradozical Object design also belongs to this series but is diagrammed separately elsewhere. Simple Solids were designed in 2000.

## Simple Cube and Cuboids

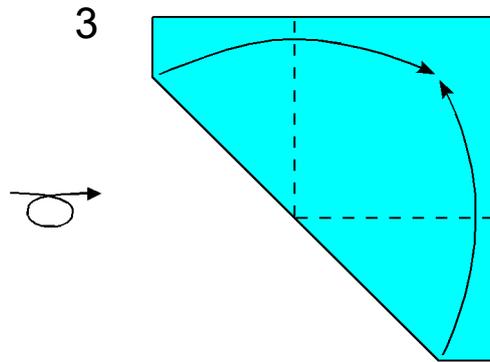
1



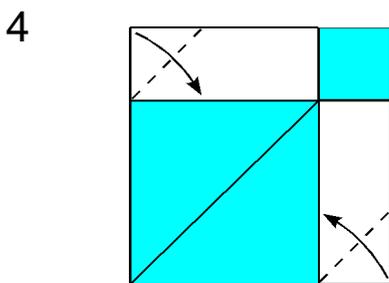
1. Fold the bottom right corner diagonally inwards like this. Make the crease softly at first and only crease it firmly when you are sure it is in the correct position. See picture 2.



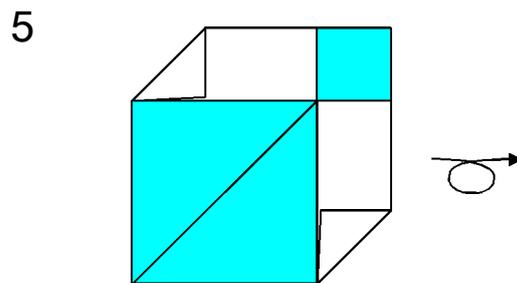
2. Make sure the original bottom right corner lies on the diagonal of the square, marked with a dotted line here. Turn over sideways.



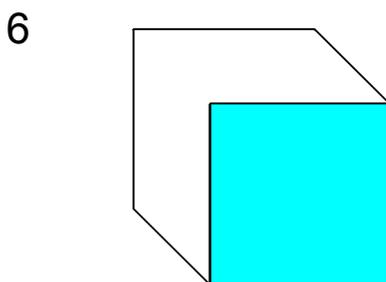
3. Fold both the left and bottom edges inwards as shown.



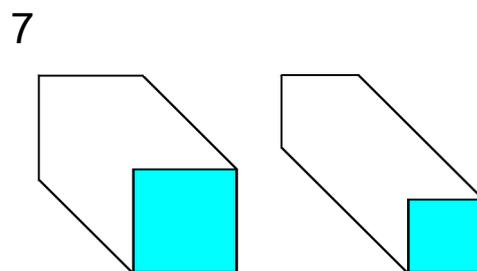
4. Fold the top left and bottom right corners inwards as shown.



5. Turn over sideways.

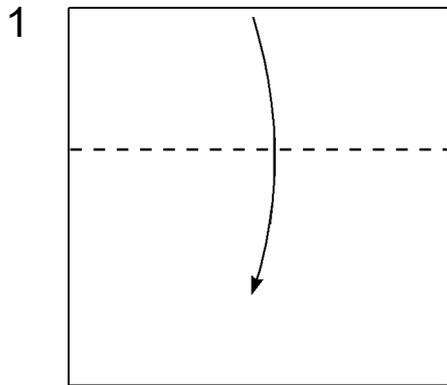


6. The Simple Cube is finished

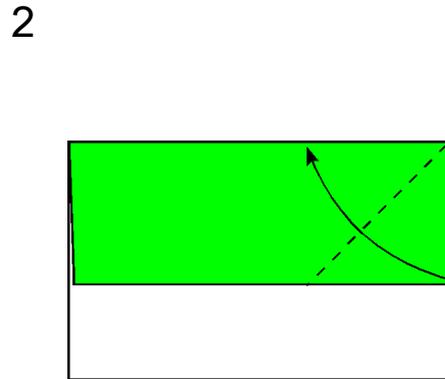


7. By adjusting the position of the first fold you can produce cuboids of different proportions. A small difference in the placement of the first fold can make a big difference in the final result.

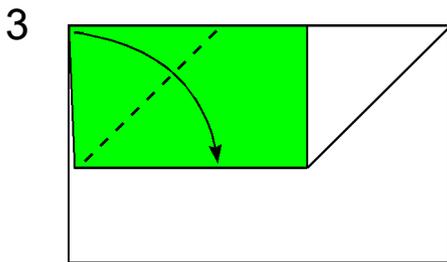
## Handy Boxes



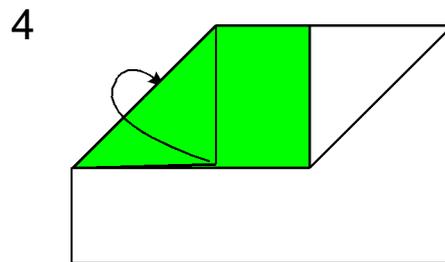
1. Fold the top edge downwards.



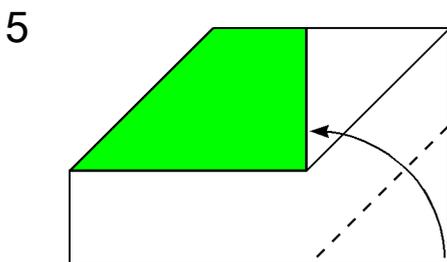
2. The height of the white area becomes the depth of the box. Fold the right hand corner of the front flap inwards.



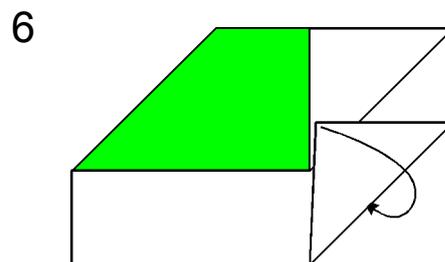
3. Fold the top left hand corner inwards ...



4. ... then swing the new flap backwards out of sight.

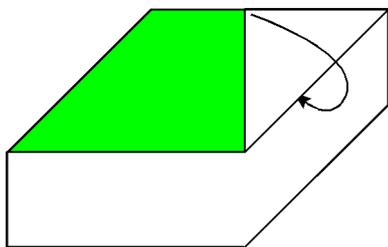


5 Fold the bottom right hand corner upwards so that the edges of the two flaps line up.



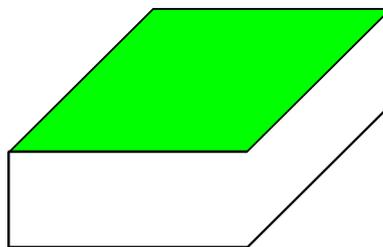
6. Swing the front flap backwards out of sight using the existing crease.

7



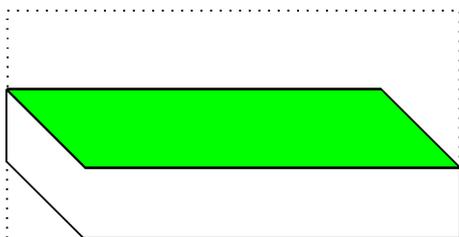
7. Swing the new top flap out of sight between the layers by reversing the existing crease.

8



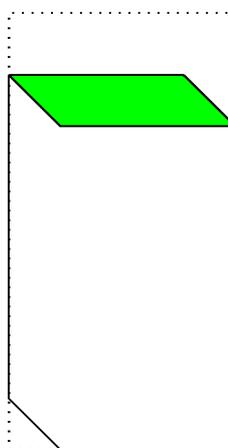
8. Your Handy Box is finished.

9



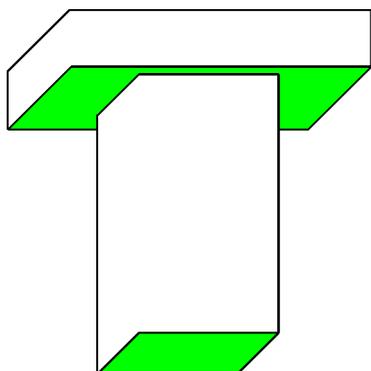
9. By varying the position of the first fold and the shape of the paper you start from you can change the proportions of the box.

10



10. The dotted lines in pictures 9 and 10 show the proportions of the paper these Handy Boxes are folded from.

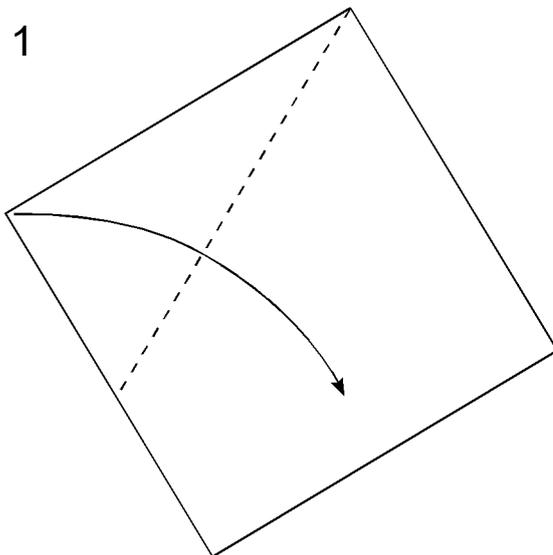
11



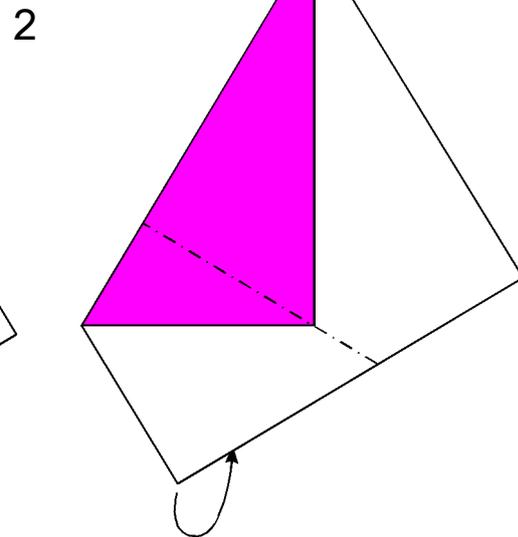
11. Handy Boxes can be combined to make more complex images.

# Simple Pyramids

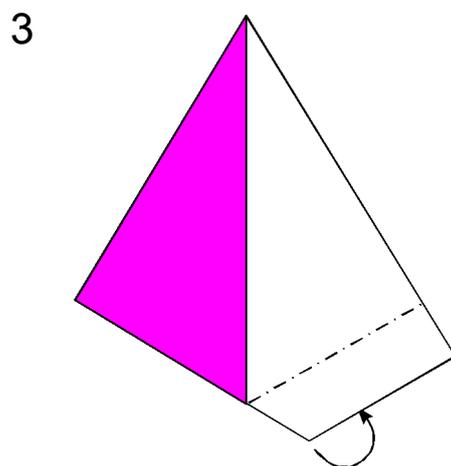
## Simple Pyramid 1



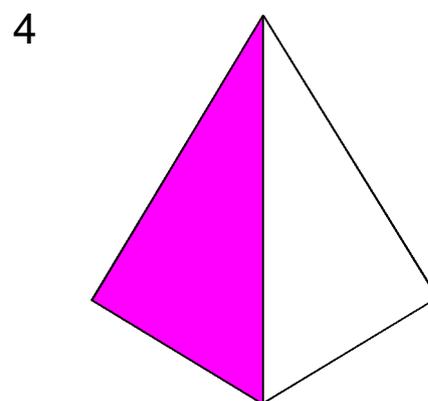
1. Fold one corner of your square inwards like this.



2. Fold the bottom corner backwards. The crease should pass through the point of the coloured triangle and be at right angles to the top left hand edge.



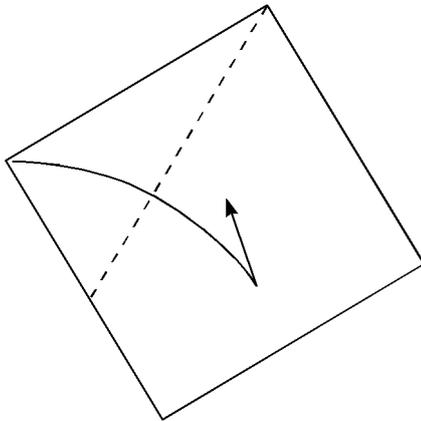
3. Fold the bottom right hand corner backwards in a similar way.



4. Simple Pyramid 1 is finished.

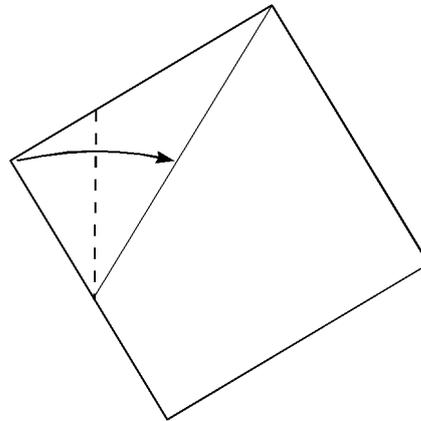
## Simple Pyramid 2

1



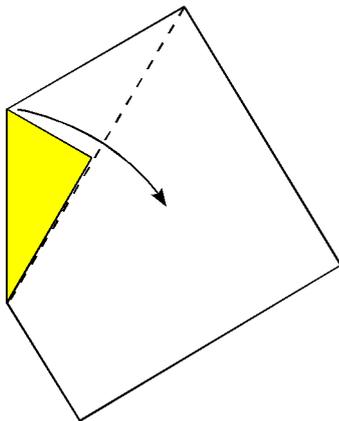
1. Begin Simple Pyramid 2 in the same way as Simple Pyramid 1 but then open out the fold.

2



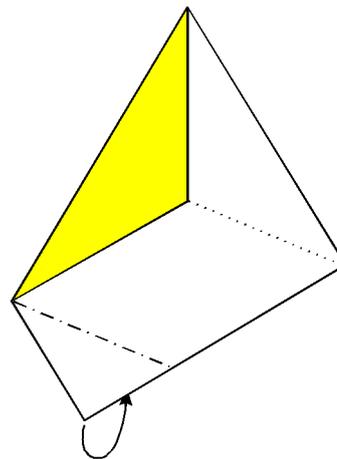
2. Fold the same corner inwards so that the edge lies just shy of the crease made in step 5.

3



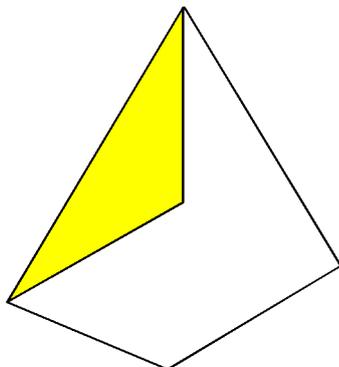
3. Remake fold 1.

4



4. Fold the bottom left hand corner backwards. This crease should be parallel to an imaginary line joining the two nearest corners of the pyramid, which is shown dotted here.

5

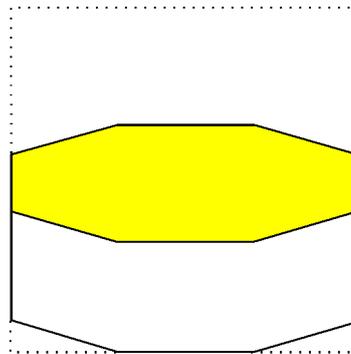
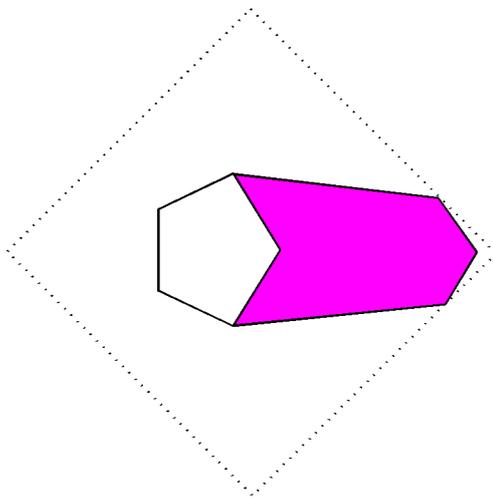
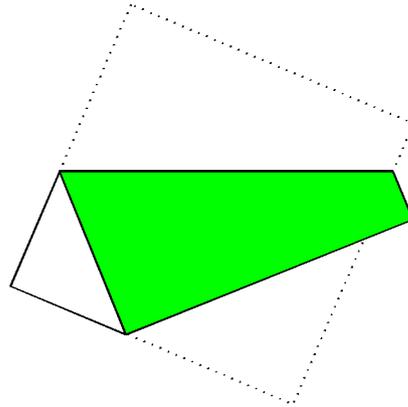
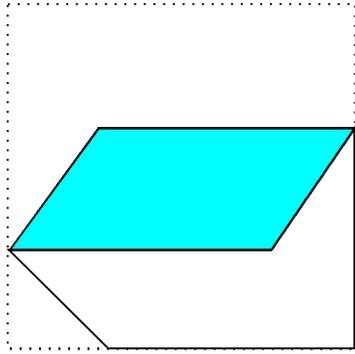


5. Simple Pyramid 2 is finished.

6

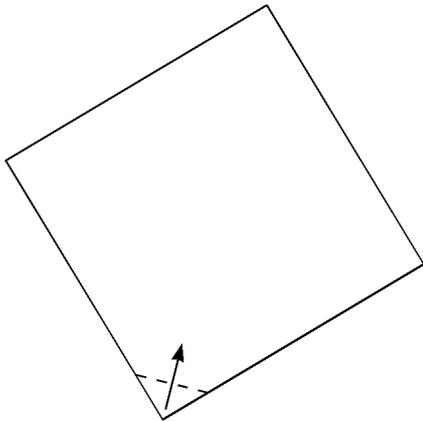
## Simple Prisms

Here are four Simple Prisms that can be made in a similar way to the other Simple Solids. You might like to work out the folding sequences for yourself. The dotted lines mark the outlines of the squares the prisms are folded from. Many other similar designs are possible.



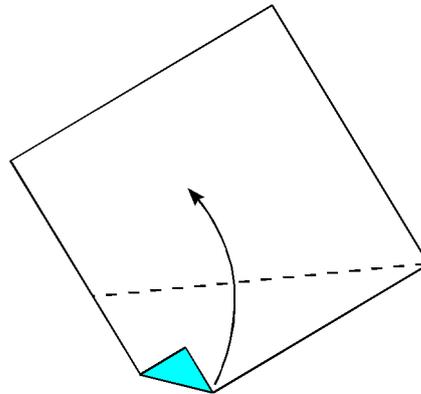
## Simple Wedge

1



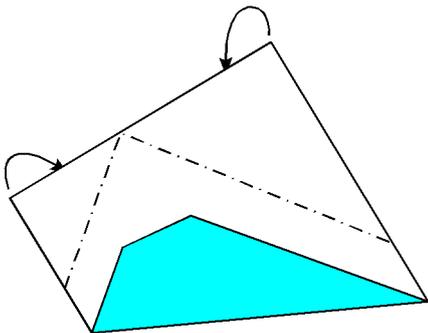
1. Fold the bottom upwards as shown.

2



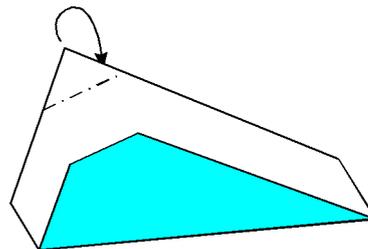
2. Fold the bottom part of the paper upwards again.

3



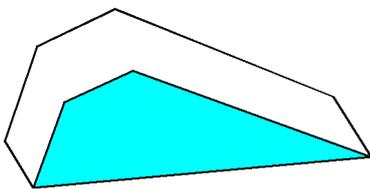
3. Fold both top corners backwards as shown. These folds should be parallel to the corresponding edges of the front layers below them.

4



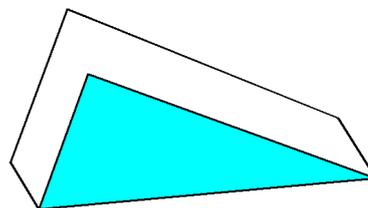
4. Finally fold the new top corner backwards as well. This fold should be parallel to the corresponding edge of the front layer below it.

5



5. The Simple Wedge is finished

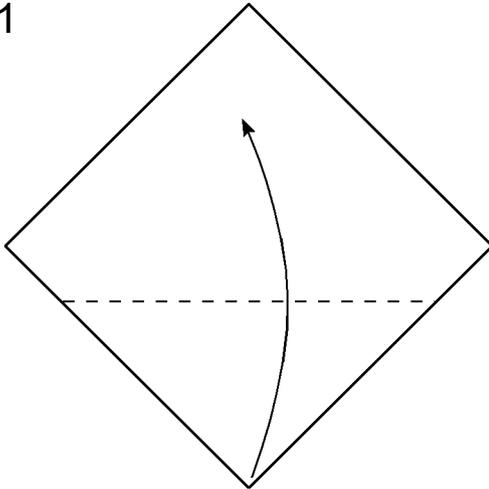
6



6. An even simpler version of the Simple Wedge can be obtained in just three folds by omitting steps 1 and 4.

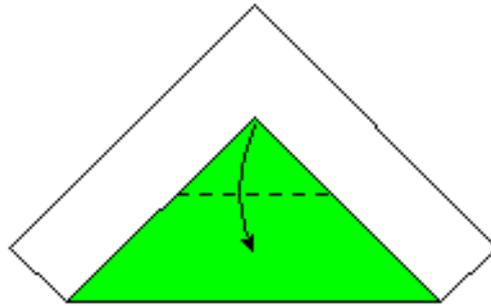
## Impossible Object

1



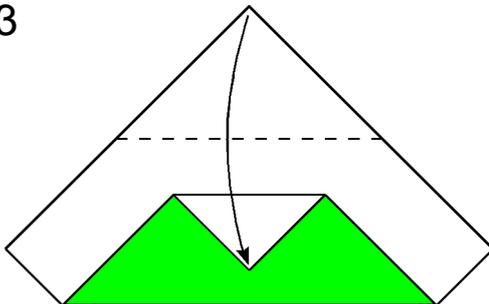
1. Fold the bottom upwards as shown.

2



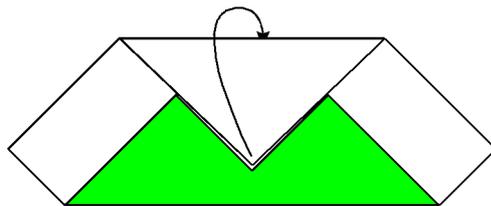
2. Fold the top point of the front layer downwards as shown.

3



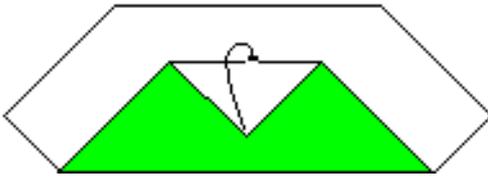
3. Fold the top point downwards to lie on top of the bottom point of the front layer.

4



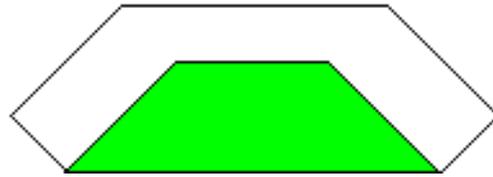
4. Fold the front layer out of sight behind by reversing the direction of the existing crease.

5



5. Fold the new front layer out of sight behind by reversing the direction of the existing crease.

6



6. Either end of this design makes sense when viewed three-dimensionally ... but the design does not make sense when viewed as a whole. It is an Impossible Object.

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