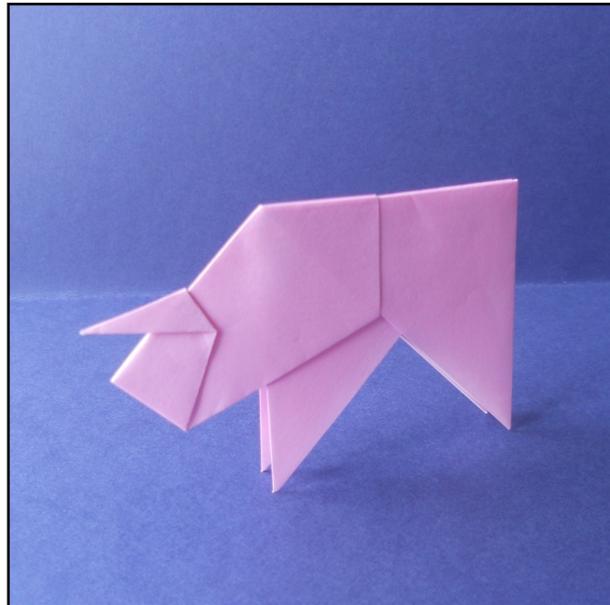


Mix and Match Animals

Designed by David Mitchell

One day, when I was playing around with the concept of Naive Origami, it occurred to me to wonder if it was possible to create a series of designs in which at least some of the various parts of one multiple piece animal could be reused in another. It turns out that they can, and these Mix and Match Designs are the result of exploring this idea.



All of them also meet the requirements to qualify as what I call Naive Designs. If you are interested in this, the criteria for qualifying as a Naive Design are set out on the About Naive Origami page of my website.

The only units of the designs that are common to all the animals are the legs, which are recycled from my Alpha Pyramids modular design.

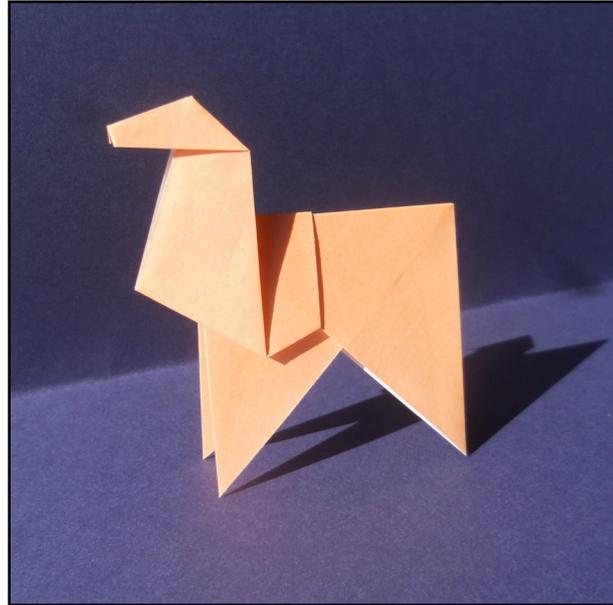
The bonus for me in the exploration was that I had never before managed to design a llama, a bactrian, a dromedary or a giraffe with which I was remotely satisfied. Even though these designs are unusual, and mostly look very little like the animals they are supposed to represent, I find the process of folding and assembling them both satisfying and amusing. I hope you will too. I am also sure you will be able to find many more similar designs for yourself.

All the pieces of all the animals are made from the same size squares. For the sake of clarity I have drawn the diagrams as though they are being folded from irogami but any kind of paper can be used.

These mix and match animals were designed in 2013.

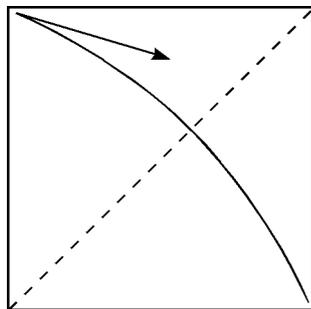
Mix and Match Llama

The Mix and Match Llama is made from three squares of paper.



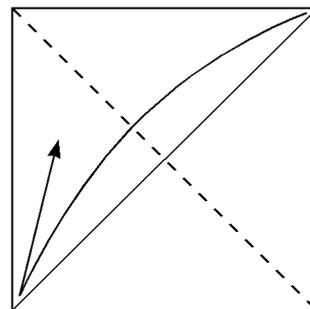
Making the legs

1

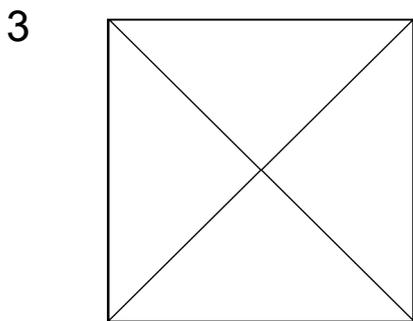


1. Arrange your first square white side up. Fold in half diagonally, then unfold.

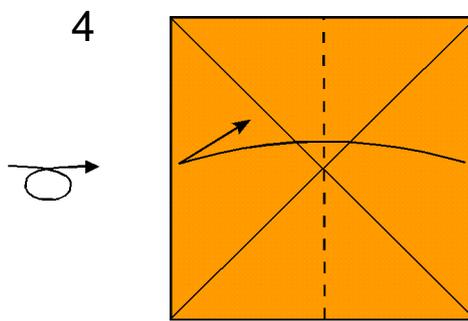
2



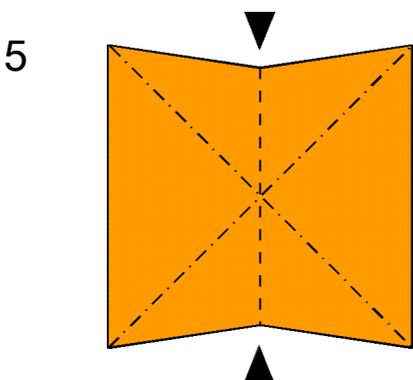
2. Fold in half diagonally in the opposite direction, then unfold.



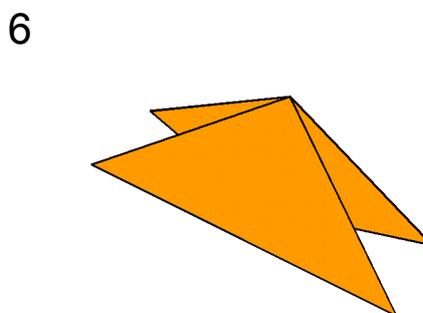
3. Turn over sideways.



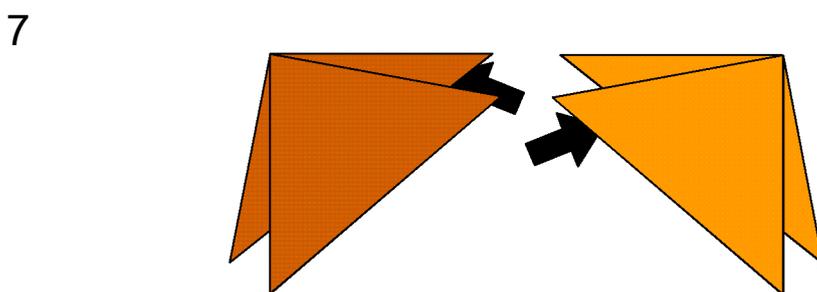
4. Fold in half sideways, then unfold.



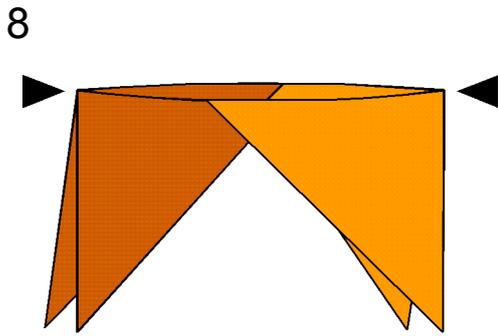
5. Collapse into the form shown in picture 6. The centre rises up towards you as you do this.



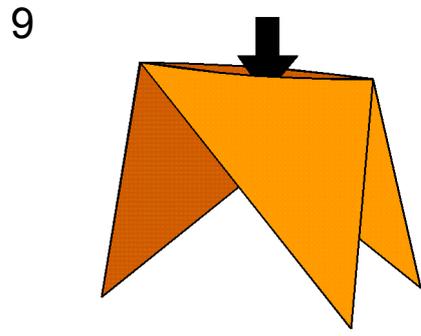
6. This is the result. Make two. For the sake of clarity the second piece is shown in a darker shade.



7. Interweave the arms of the two pieces in the way shown here. The front arm of the right piece goes inside the front arm of the left piece. The rear arm of the left piece goes inside the rear arm of the right piece.

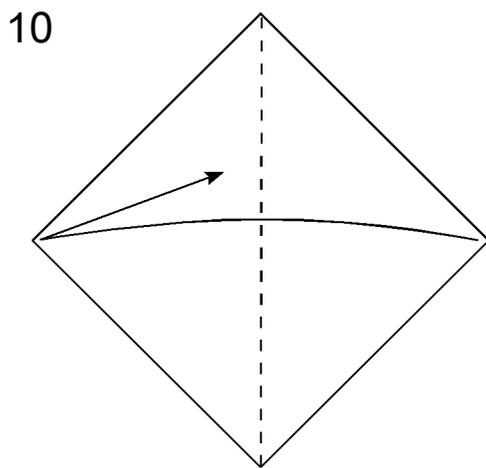


8. Push the two pieces fully together.

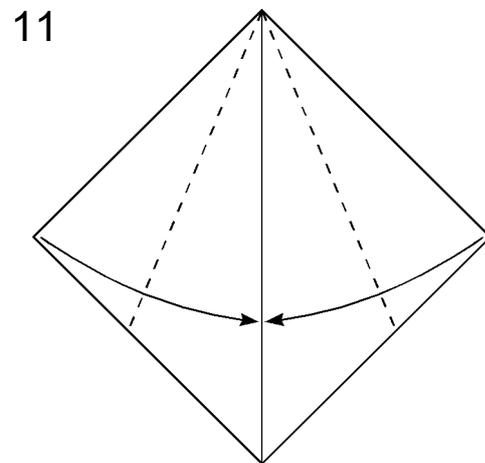


9. The legs are finished. There is a pocket in the top into which other pieces can be inserted.

Making the head and neck

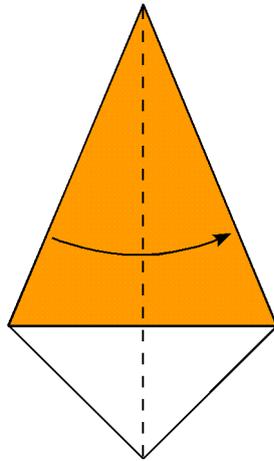


10. Fold in half sideways, then unfold.



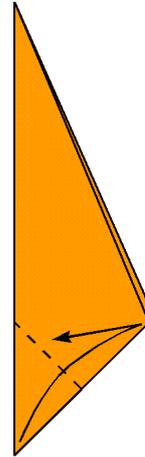
11. Fold both upper sloping edges onto the vertical crease.

12



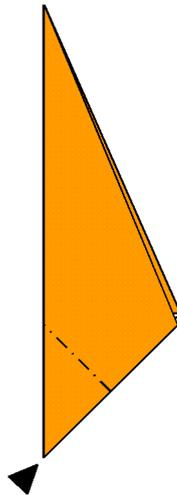
12. Fold in half from left to right.

13



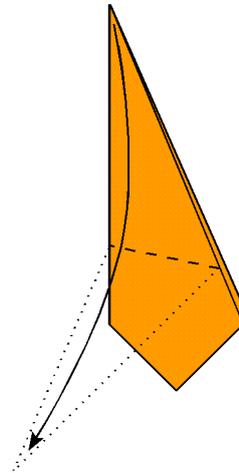
13. Fold the bottom point onto the right corner, then unfold.

14



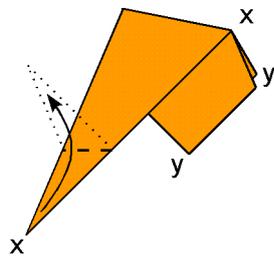
14. Turn the bottom point inside out in between the other layers using the existing creases.

15



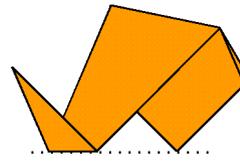
15. Fold the top point downwards at the angle shown so that the result looks like picture 16.

16



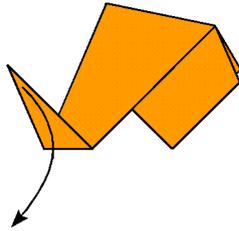
16. Make sure that the edges xx and yy are parallel. Fold the bottom point of the front layer upwards as shown.

17



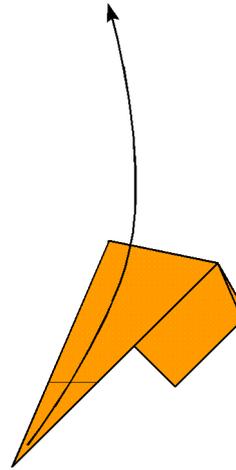
17. Note that the existing bottom point and the new bottom edge should be aligned in the way shown here.

18



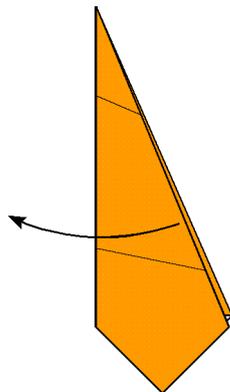
18. Unfold.

19



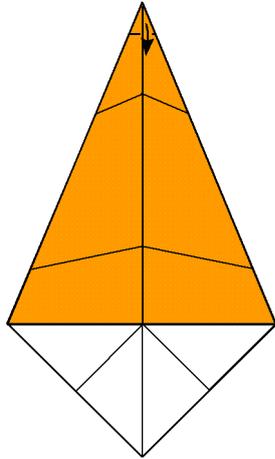
19. Unfold again.

20



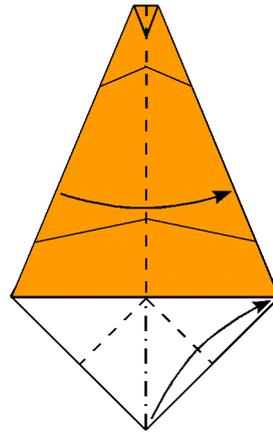
20. Unfold for a third time.

21



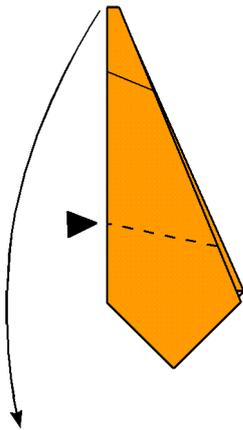
21. Fold the tip of the top point downwards to blunt the top of the design.

22



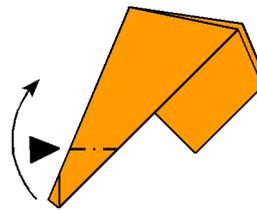
22. Fold in half from left to right and allow the lower folds to reform.

23



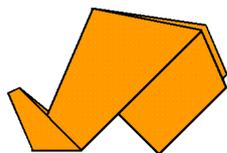
23. Fold the top point inside out outside the other layers using the creases in step 15.

24



24. Fold the new bottom point inside out outside the other layers using the creases made in step 16.

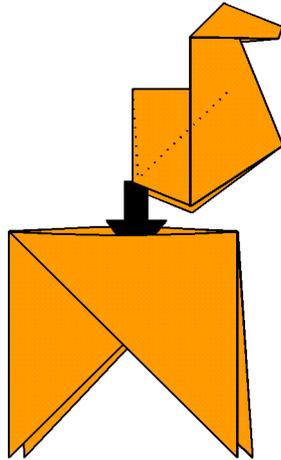
25



25. The head and neck are finished. Rotate clockwise to align with picture 26.

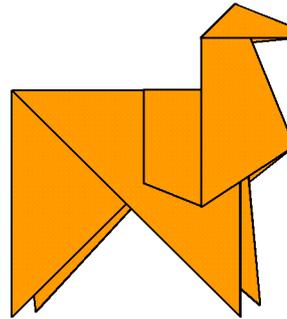
Putting the pieces together.

26



26. Place the head and neck onto the body so that the hidden triangular flap slots inside the pocket in the top of the legs.

27

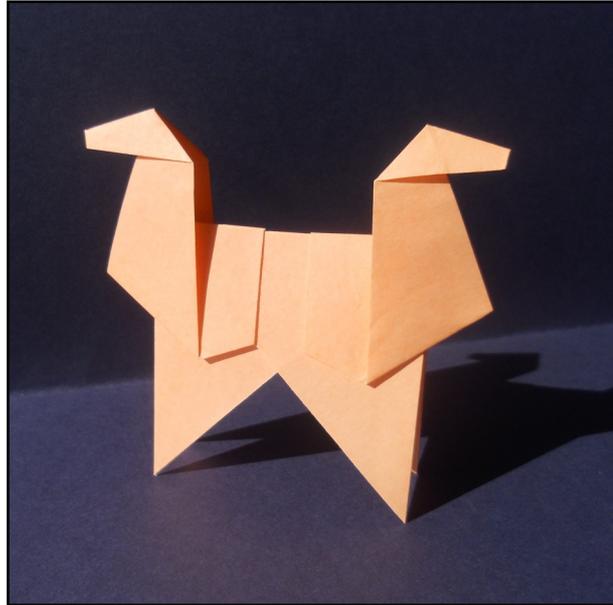


27. The Mix and Match Llama is finished.

The Push Me Pull You

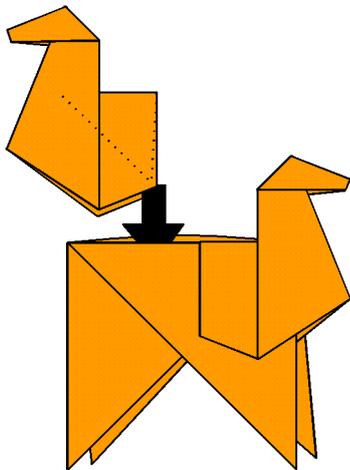
The Push Me Pull You is made by adding a second head to the Mix and Match Llama.

The Pushmi-pullyu, as it is correctly spelled, is a character in the Dr Doolittle books by Hugh Lofting. It was originally a gazelle / unicorn cross but was portrayed as a double-headed Llama in the 1967 film Dr Dolittle.



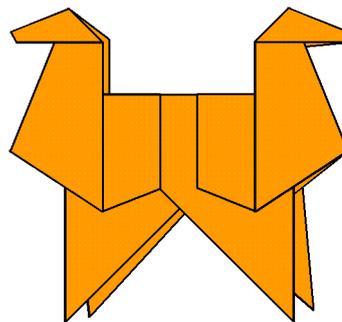
Putting the pieces together.

28



28. Make a second head and neck and add it to the other end of the legs in the same way.

29

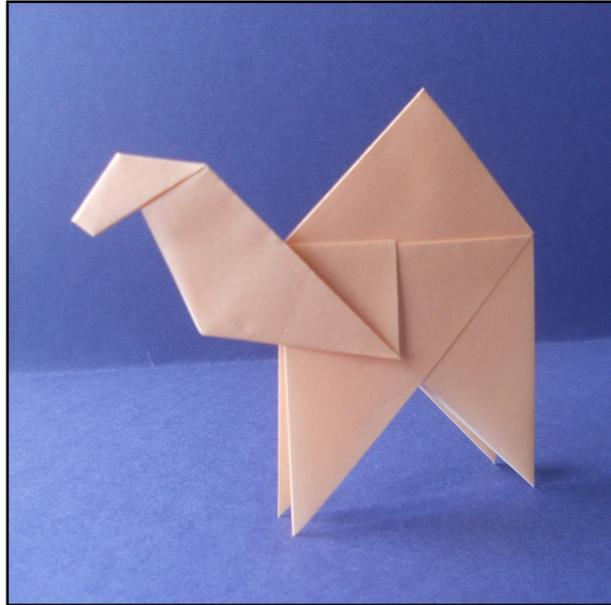


29. The Push Me Pull You is complete. It can, of course, move off in both directions at once.

Mix and Match Dromedary

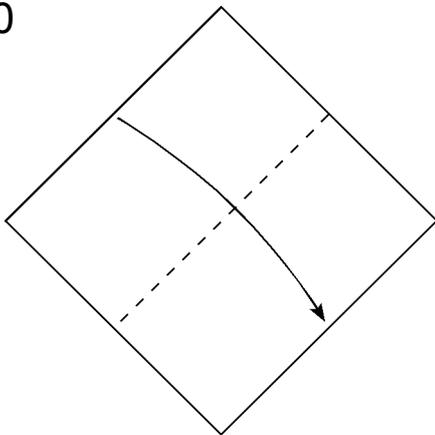
The Mix and Match Dromedary is made by adding a single hump to the Llama and then altering the angle of the neck.

I am particularly fond of the simple pull out move by which this variation is achieved.



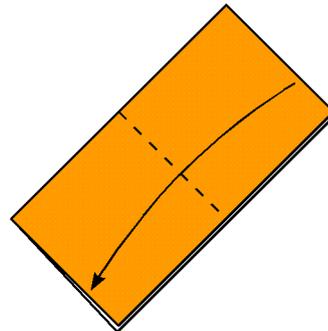
Folding the hump

30



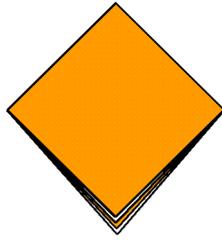
30. Fold in half edge to edge as shown.

31



31. Fold in half edge to edge in the alternate direction.

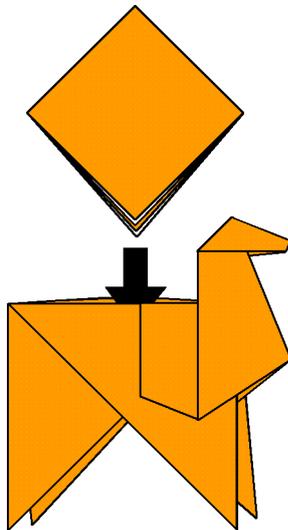
32



32. The hump is complete.

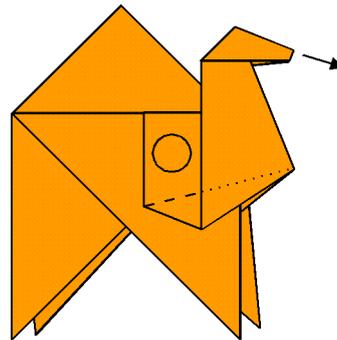
Putting the pieces together and altering the neck

33



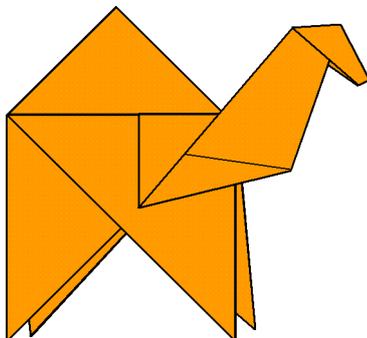
33. Insert the open edges of the hump inside the pocket in the top of the legs.

34



34. Hold firmly at the point marked with a circle and pull the head forwards. Make a new crease in the position marked.

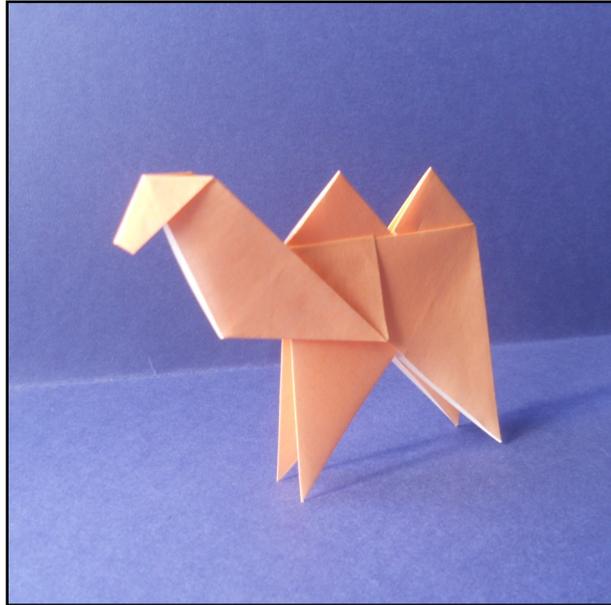
35



35. The Mix and Match Dromedary is complete.

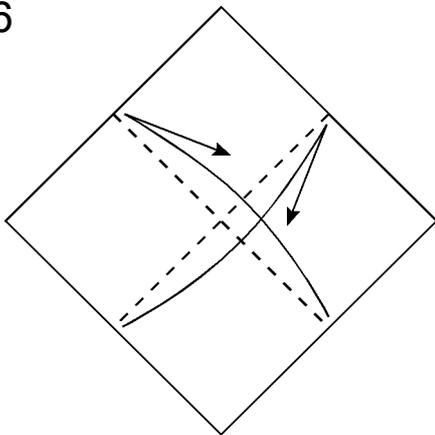
Mix and Match Bactrian

The Mix and Match Bactrian is made by replacing the single hump of the Dromedary with a double hump.



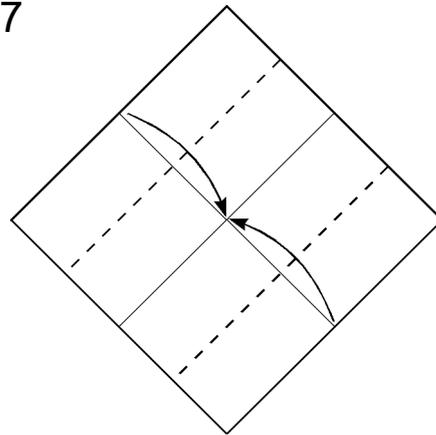
Folding the double hump

36



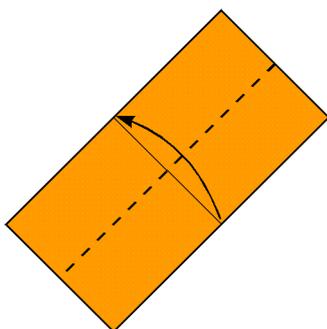
36. Fold in half edge to edge in both Directions, then unfold.

37



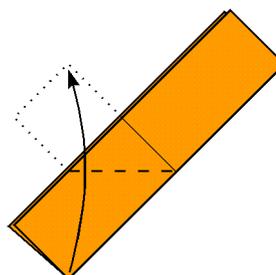
37. Fold two opposite edges into the centre as shown.

38



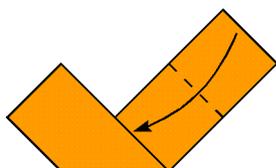
38. Fold in half sideways as shown.

39



39. Fold the bottom point upwards as shown, using the diagonal crease to locate the fold.

40



40. Fold the top sloping edge inwards as shown.

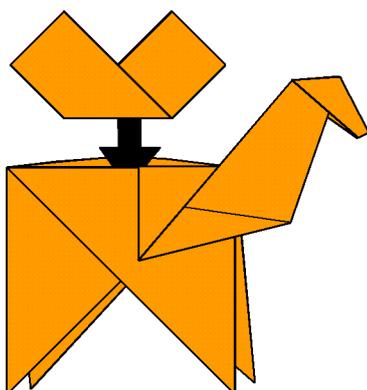
41



41. The double hump is finished.

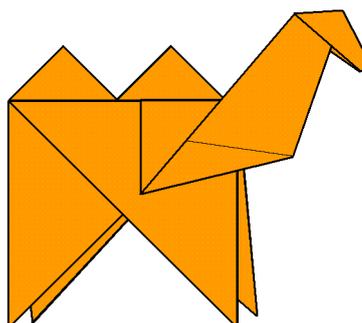
Putting the pieces together

42



42. Insert the double hump inside the pocket in the top of the legs, like this.

43

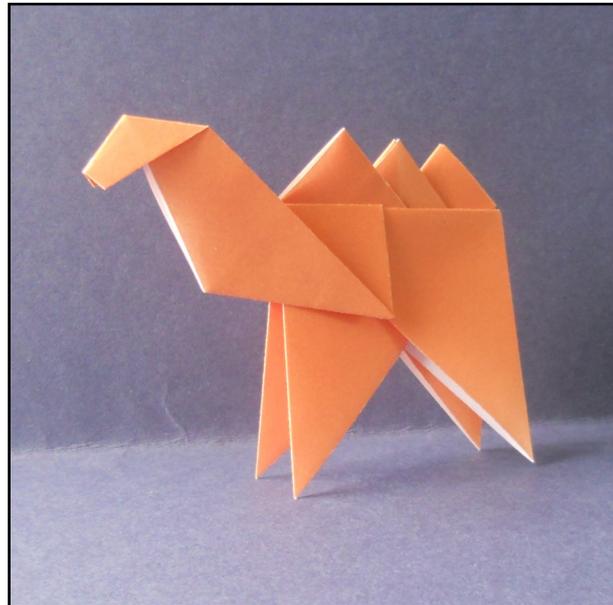


43. The Mix and Match Bactrian is complete.

Humphrey

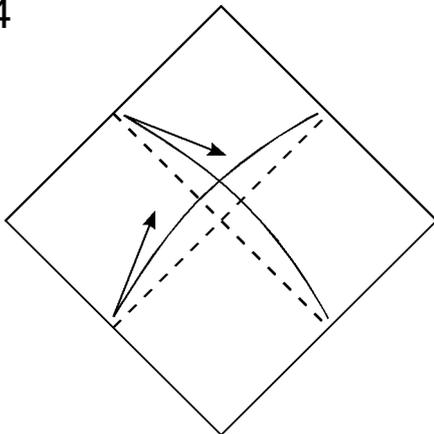
Humphrey is made by replacing the single hump of the Dromedary with a triple hump.

The picture shows the original version of the triple hump. I have diagrammed a simplified version here but you may like to try to reconstruct the original for yourself. Both versions are folded from the same size square.



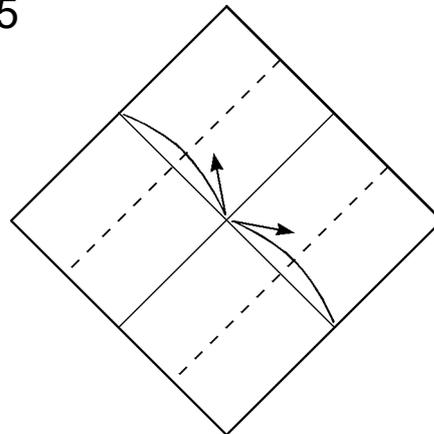
Folding the triple hump

44



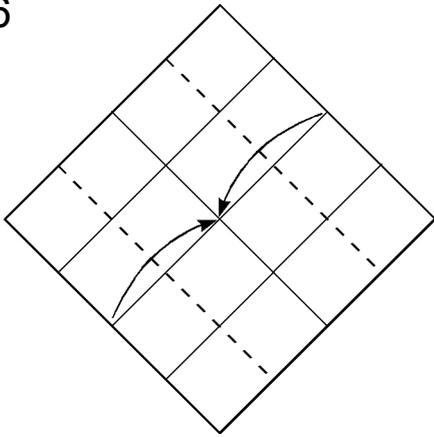
44. Fold in half edge to edge in both directions, then unfold.

45



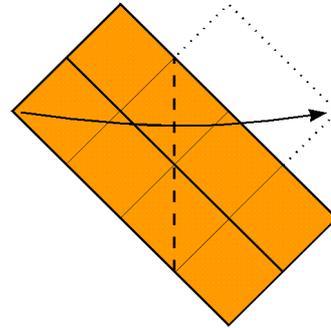
45. Fold two opposite edges into the centre as shown, then unfold.

46



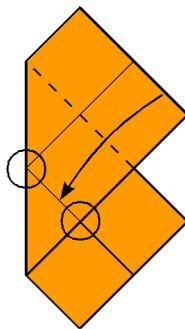
46. Fold the other two opposite edges into the centre.

47



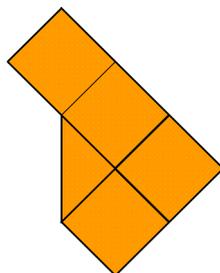
47. Fold the left corner across to the right making sure the crease forms in the position shown.

48



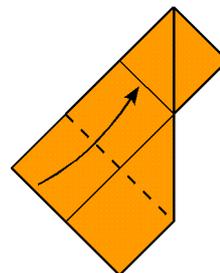
48. Fold the top right sloping edge inwards using the existing crease.

49



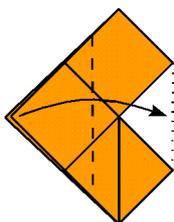
49. Turn over sideways.

50



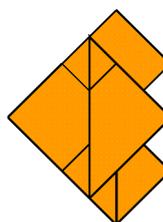
50. Fold the bottom left sloping edge inwards using the existing crease.

51



51. Fold the left corner of just the top layer across to the right so that all three humps are aligned in the way shown in picture 52.

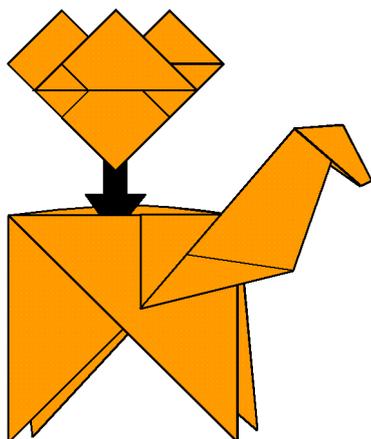
52



52. Rotate 90 degrees anticlockwise.

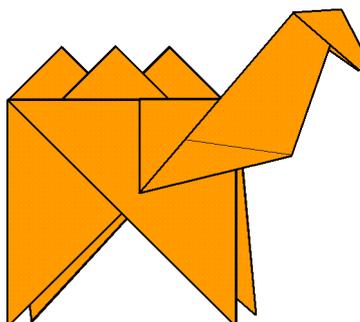
Putting the pieces together

53



53. Insert the triple hump into the pocket in the top of the legs.

54

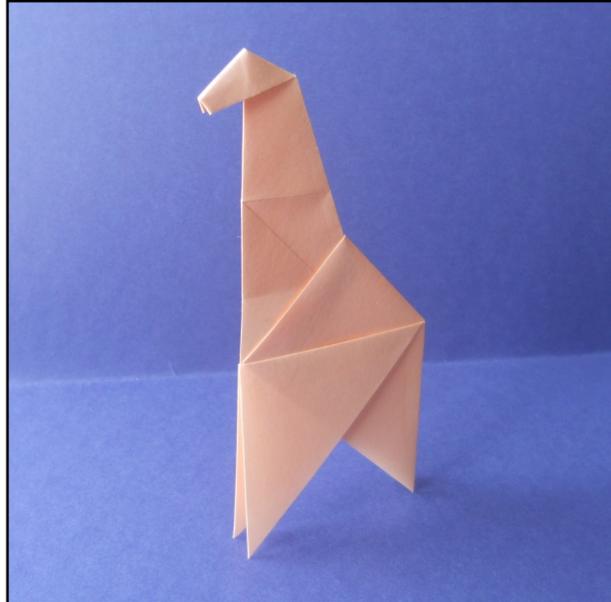


54. Humphrey is finished.

Mix and Match Giraffe

The Mix and Match Giraffe is made by adding a different head and neck to the legs and hump of the Dromedary.

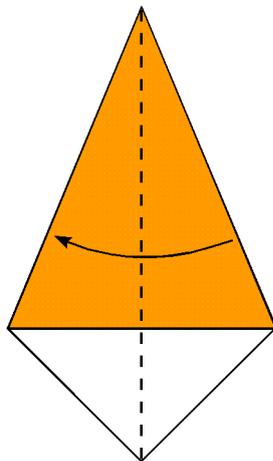
The neck is locked into the other parts in an interesting way.



Folding the head and neck

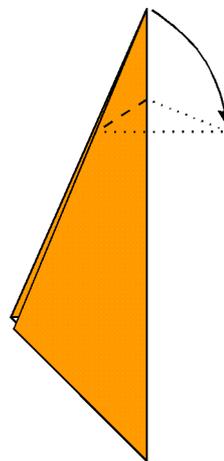
Begin with steps 10 and 11 of the Mix and Match Llama.

55



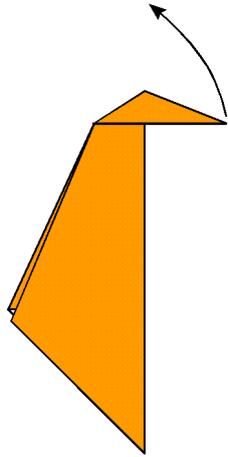
55. Fold in half sideways as shown.

56



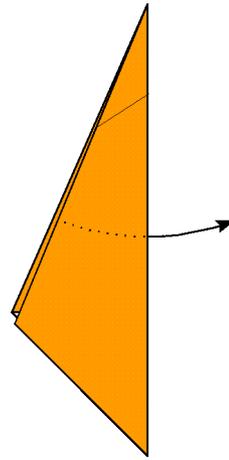
56. Fold the top point diagonally downwards to the right so that the result looks like picture 57.

57



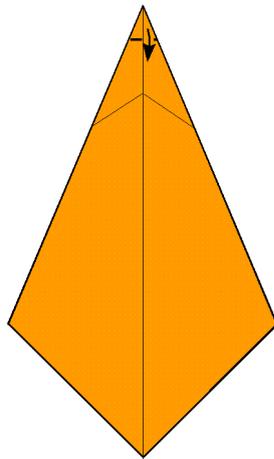
57. Unfold.

58



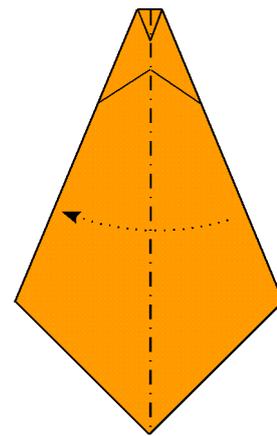
58. Unfold from behind.

59



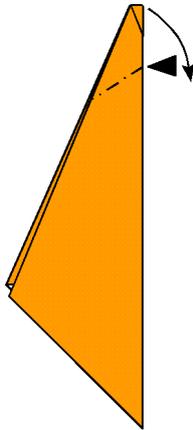
59. Fold the tip of the top point downwards to blunt the head.

60



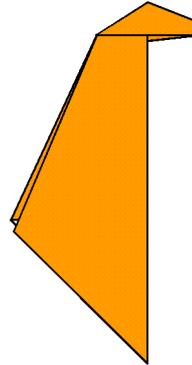
60. Fold in half behind.

61



61. Turn the top point inside out outside the other layers using the existing creases.

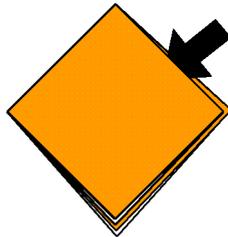
62



62. The head and neck are finished.

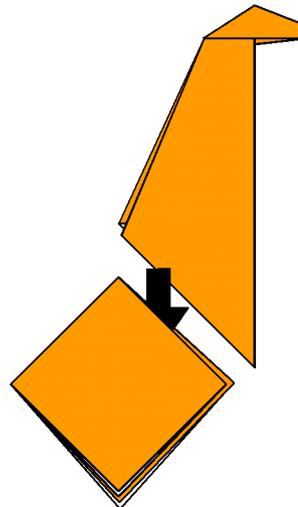
Putting the pieces together

63



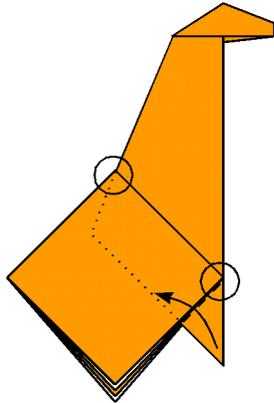
63. Follow steps 30 to 32 of the Dromedary to fold the hump and arrange it like this.

64



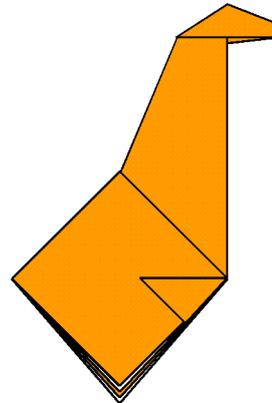
64. Slide the neck down inside the hump so that the bottom point protrudes slightly, as shown in picture 65.

65



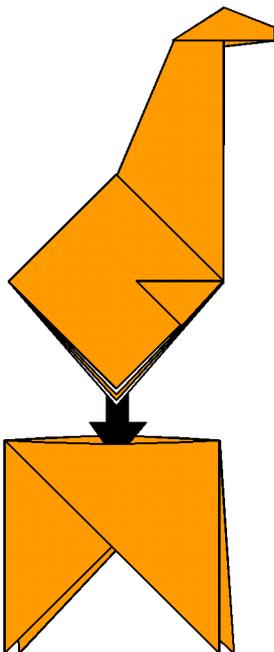
65. Make sure the neck and the hump are correctly aligned then fold the bottom point of the neck diagonally inwards to lightly lock both units together.

66



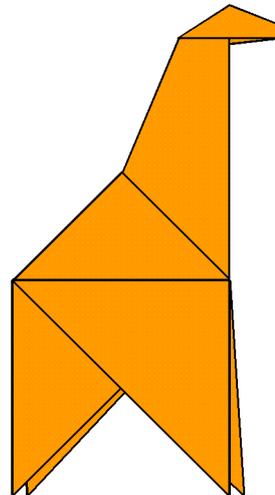
66. The result should look like this.

67



67. Insert the hump, head and neck into the pocket in the top of the legs. The neck and the hump will be locked much more firmly together as a result of this move.

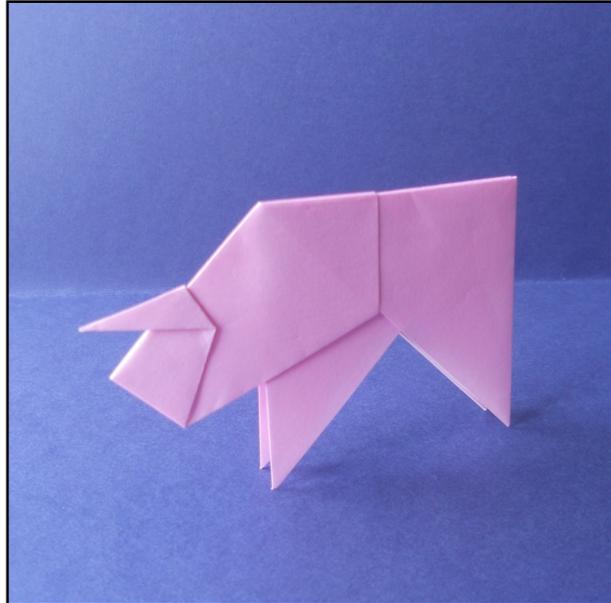
68



68. The Mix and Match Giraffe is finished.

Mix and Match Bullock

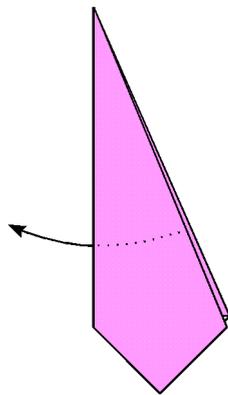
In terms of its finished appearance the bullock is probably the most successful of this series of Mix and Match designs. It is made by adding a different head and neck onto the standard legs.



Folding the head and neck

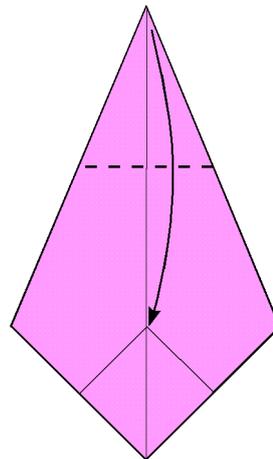
Begin with steps 10 through 14 of the Mix and Match Llama.

69



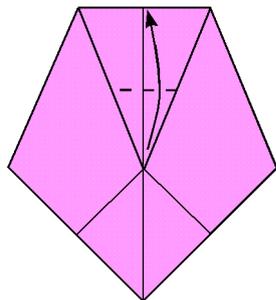
69. Open out behind.

70



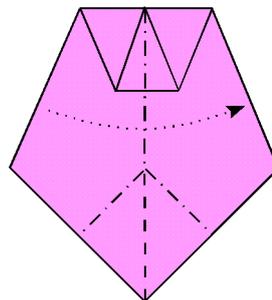
70. Fold the top point downwards to the point where the creases intersect.

71



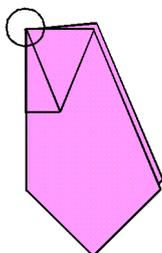
71. Fold the bottom point of the top layer upwards to the centre of the top edge.

72



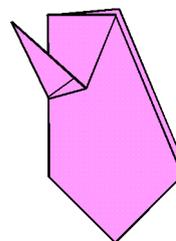
72. Fold in half behind as shown.

73



73. Pull the tip of the horn to the left and flatten in the position shown in picture 74.

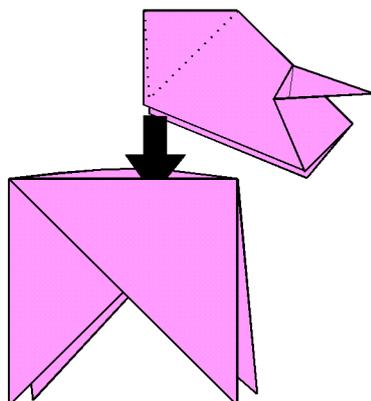
74



74. The head is finished. Rotate clockwise to align with picture 75.

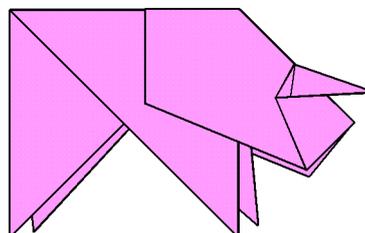
Putting the pieces together

75



75. Insert the hidden internal flap into the pocket in the top of the legs.

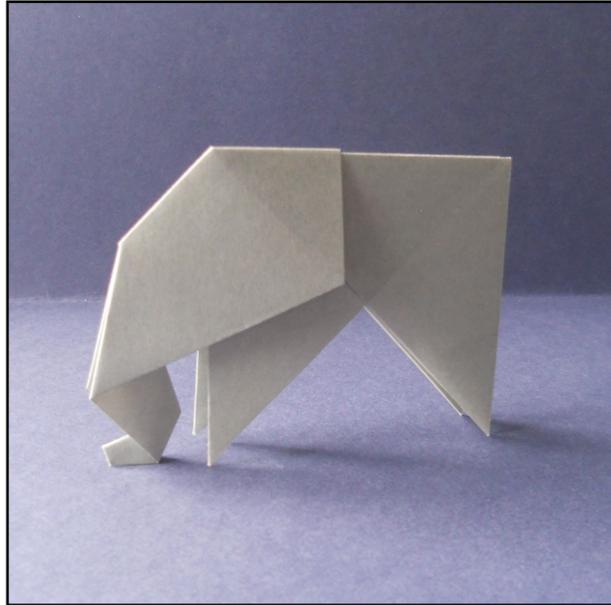
76



76. The Mix and Match Bullock is finished. Two Bullocks can lock horns.

Mix and Match Elephant

I have not drawn diagrams for this Mix and Match Elephant. I leave its reproduction with you as a small reverse engineering challenge. You will notice that the tip of the trunk rests on the ground. Enjoy!



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