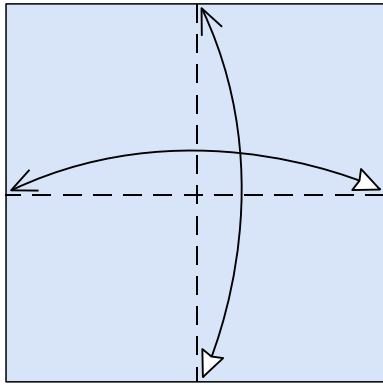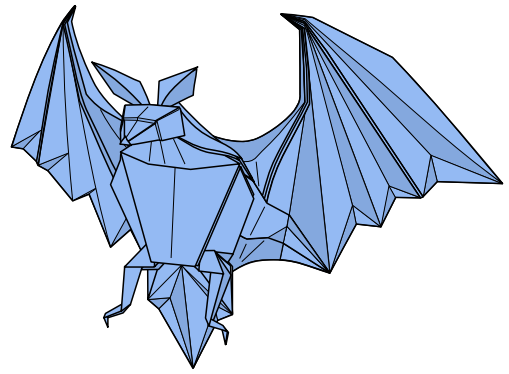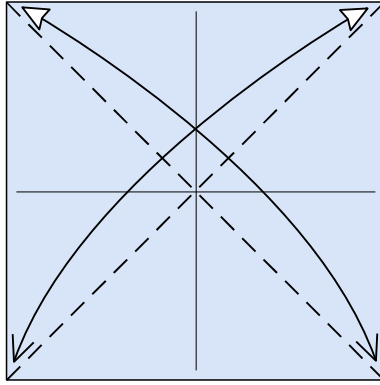# Bat

Origami Model by Noboru Miyajima
Diagrams by Carlos A. Furuti

Diagrams and folding sequence developed from a crease pattern; some details may differ from the original model.
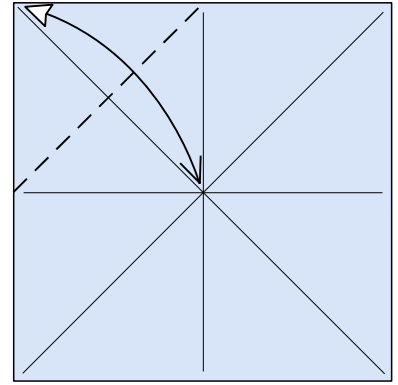
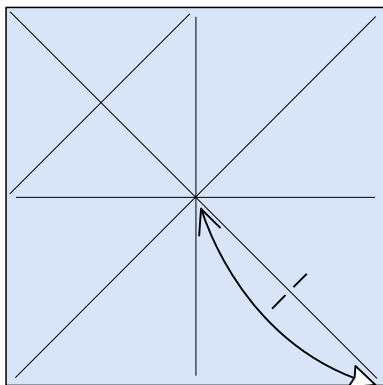Finished wingspan is roughly 70% of initial paper width.

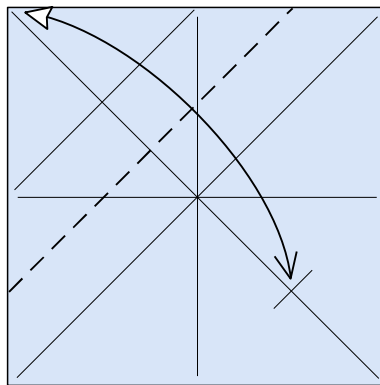**1.** Begin with a square, white side up for a mainly colored model. Fold and unfold.
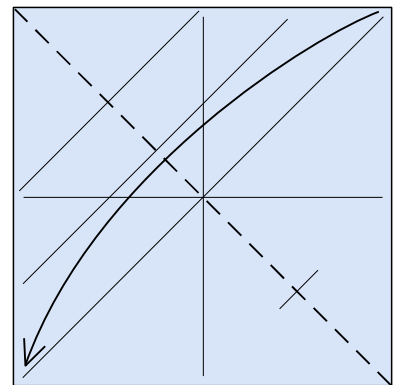
2. Fold the diagonals and unfold.
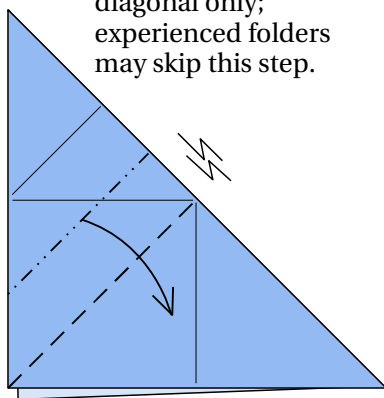
3. Fold to the center and unfold.

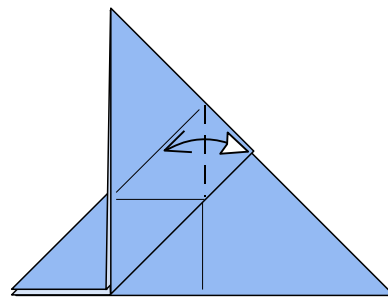**4.** Fold and unfold the diagonal only; experienced folders may skip this step.
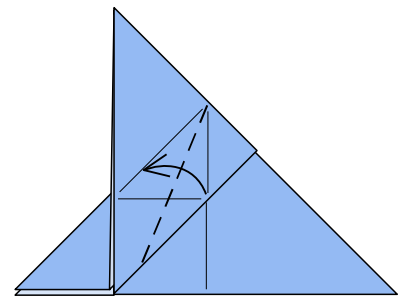
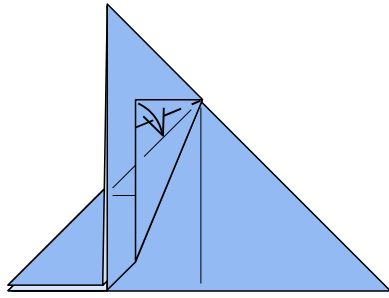**5.** Fold and unfold to the previous mark.
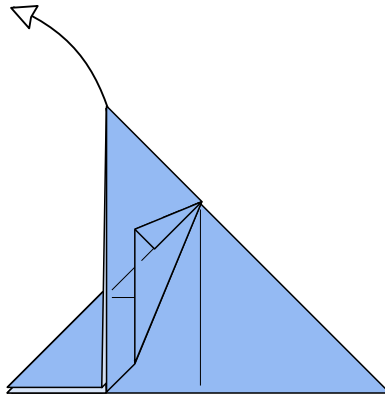
6. Valley-fold in half.

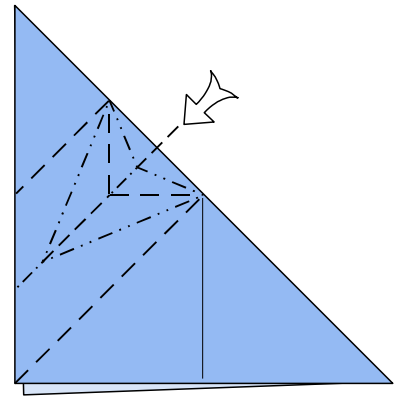**7.** Pleat-fold.

8. Fold and unfold.

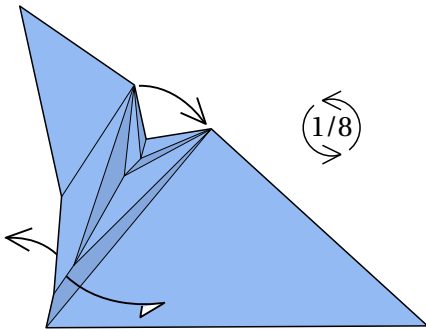**9.** Align the crease lines, bisecting an angle.

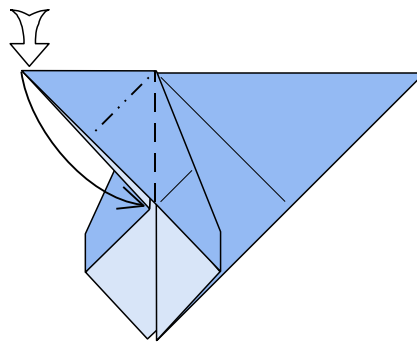**10.** Again, valley-fold bisecting an angle.

11. Unfold to step 7.

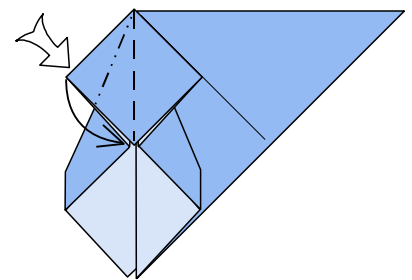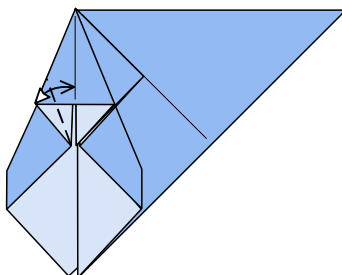**12a.** Sink in and out both sides simultaneously.

12b. Flatten the middle flaps in opposite directions.

1/8

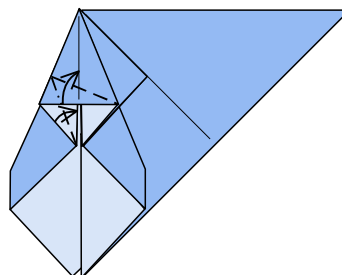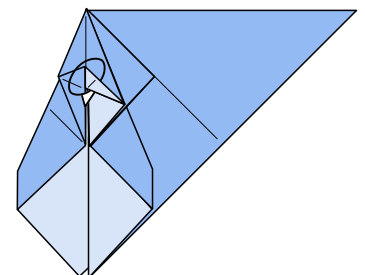**13.** Squash-fold.

14. Squash-fold again.
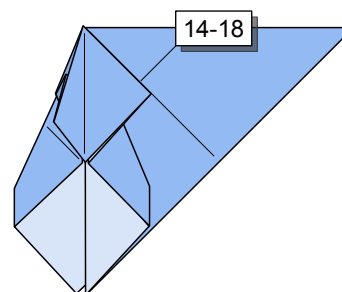
15. Fold and unfold.
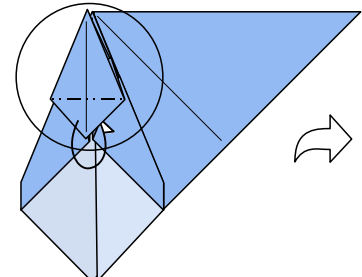
16. Swivel-fold.

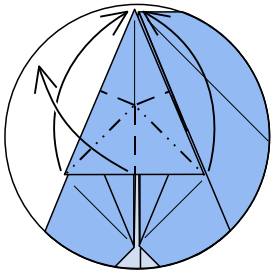**17.** Fold inside.
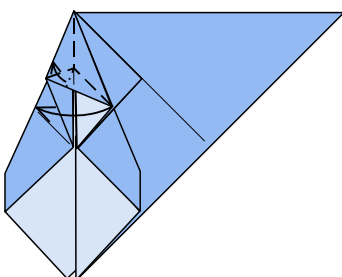
18. Close flap while incorporating a rabbit ear along angle bisectors.
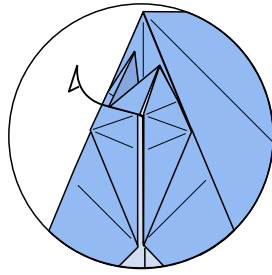
19. Repeat steps 14-18 on the right.
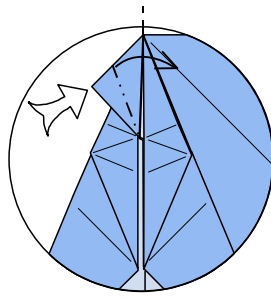
14-18

20. Tuck inside. Steps 21-25 will focus on the circled area.
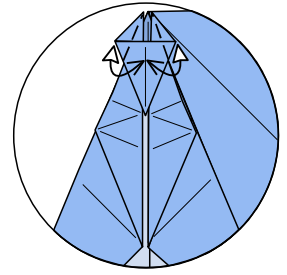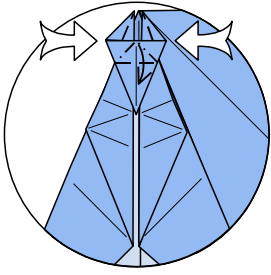
21a. Lift two points as high as possible.

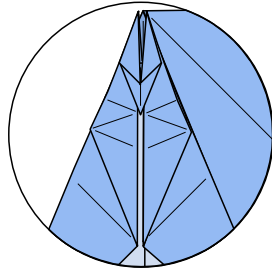**21b.** In progress. Flatten the triangular flap to the left.

22. Squash-fold.

23. Fold and unfold.
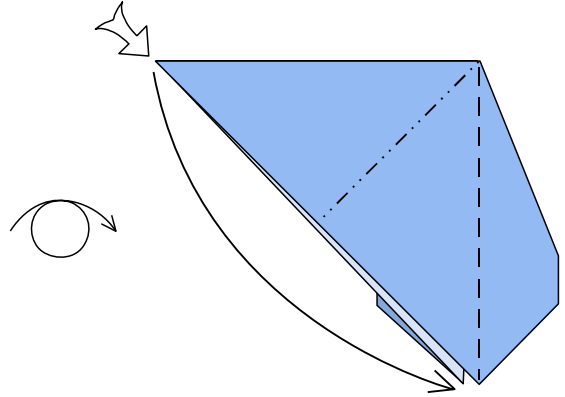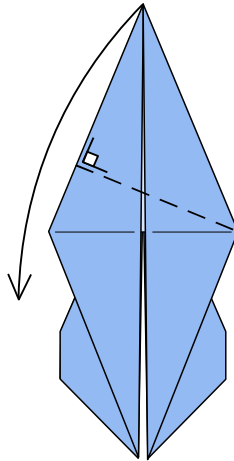
24. Petal-fold.
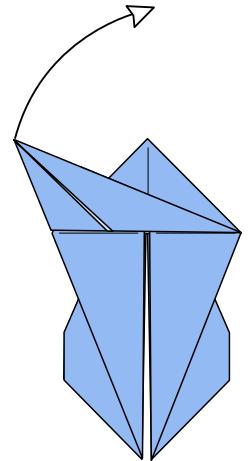
25. Turn over.

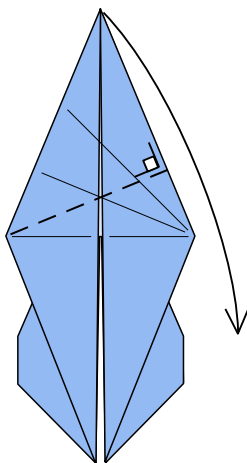**26.** Squash-fold.
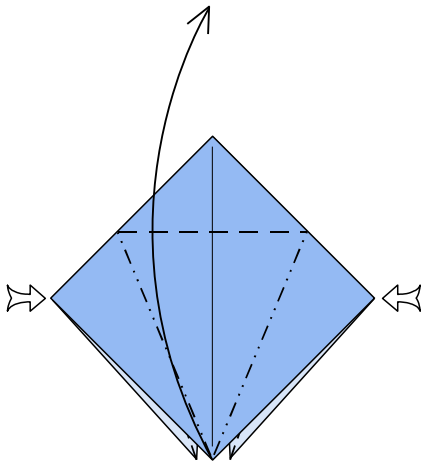
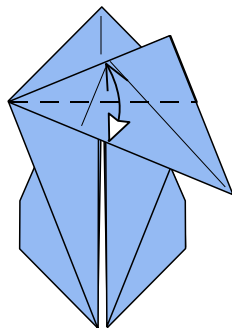**27.** Petal-fold.

28. Valley-fold aligning edges.
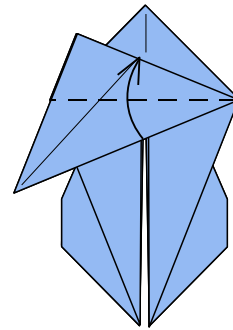
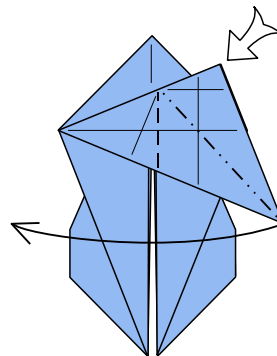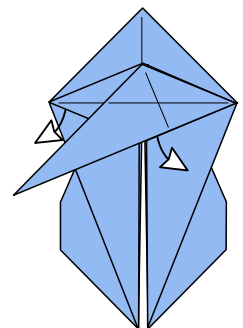**29.** Valley-fold to the edge.

30. Unfold to step 28.

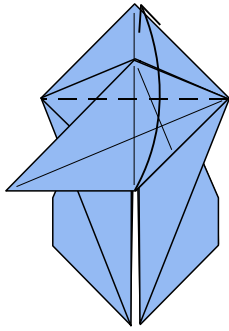**31.** Valley-fold aligning the edges again.
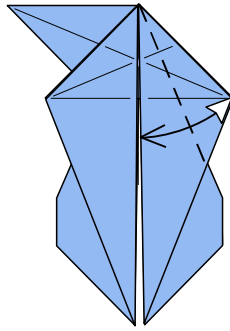
32. Fold and unfold.
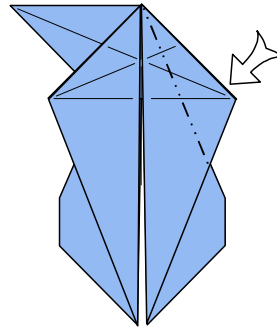
33. Swivel-fold.

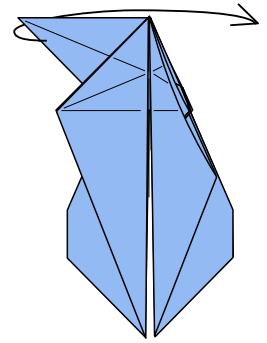**34.** Pull out a layer from both sides.
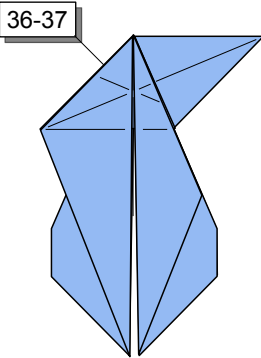
35. Valley-fold upwards.
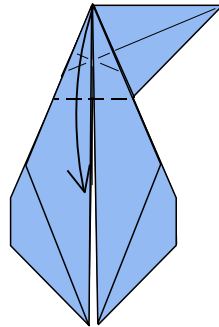
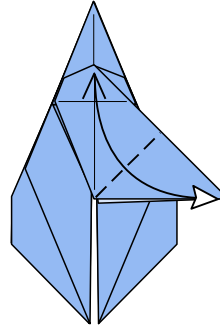**36.** Fold and unfold all layers.

37. Open sink.

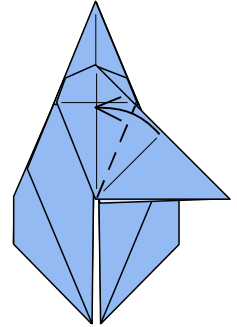**38.** Reverse-fold, swinging the triangle to the right.

36-37

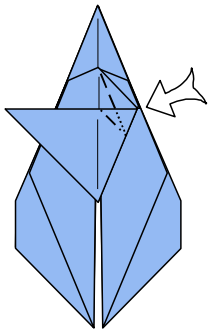**39.** Repeat steps 36-37 on the left.

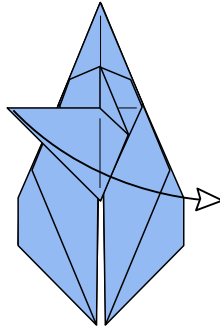**40.** Valley-fold downwards.

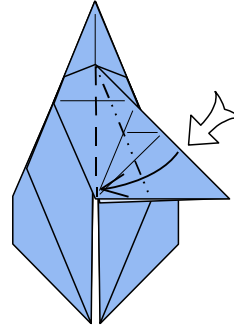**41.** Fold to the central line and unfold.
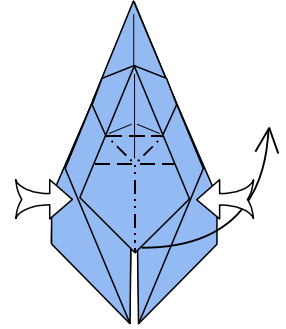
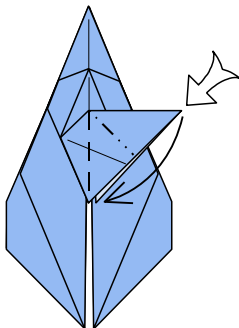**42.** Valley-fold aligning two creases.

43. Reverse-fold.

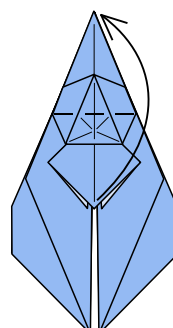**44.** Unfold to step 41.
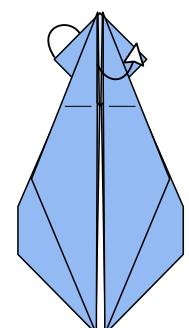
45. Squash-fold.

46. Squeeze and lift the flap.
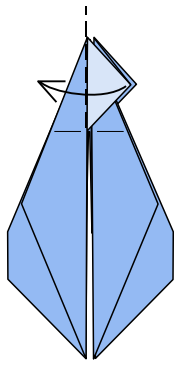
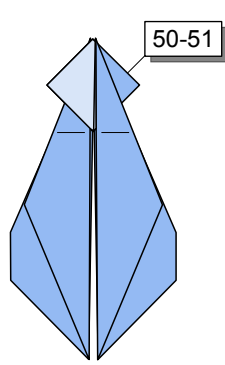**47.** Squash-fold.
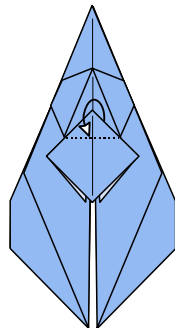
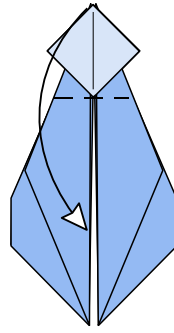**48.** Bring a layer to the front.

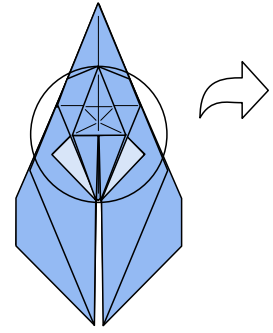**49.** Swing upwards.

50. Reverse-fold.
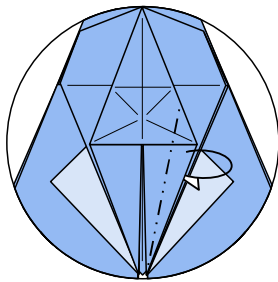
51. Swing the flap to the left.

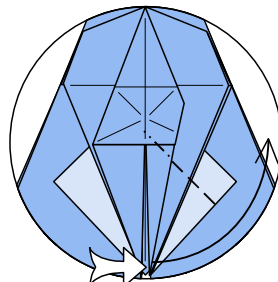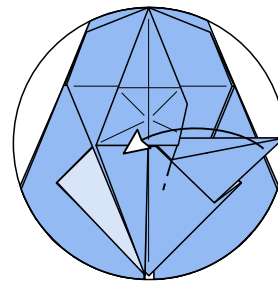**52.** Repeat steps 50-51 on the right.

53. Fold down.

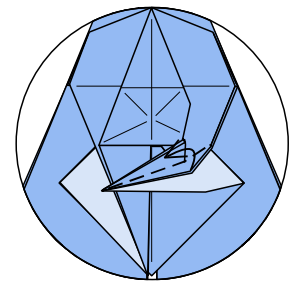**54.** Steps 55-65 will focus on the hind limbs.
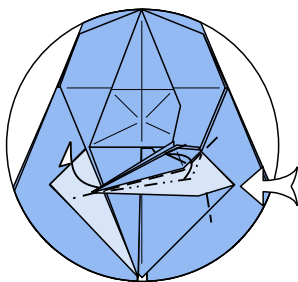
55. Mountain-fold one layer.

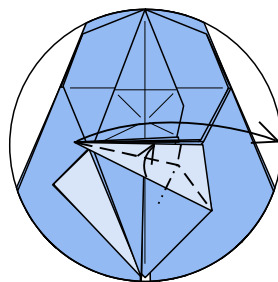**56.** Reverse-fold. Notice the layer distribution.

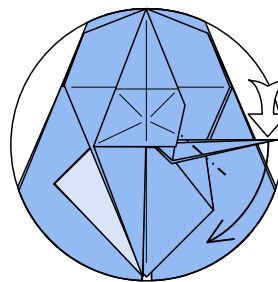**57.** Slightly lift one layer, but don't flatten it.

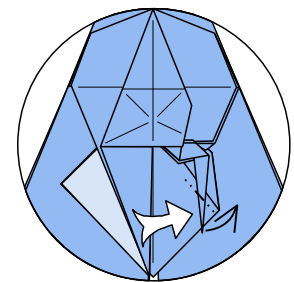**58.** Reverse-fold two layers. Model is still not flat.

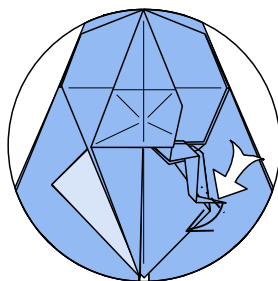**59.** Swivel-fold, flattening the flap. The mountain-fold trisects the angle.

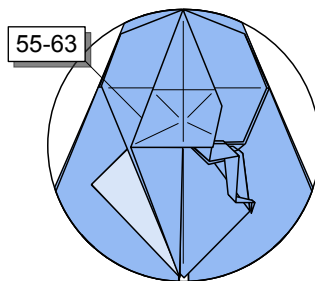**60.** Swing to the right again adding a rabbit ear.
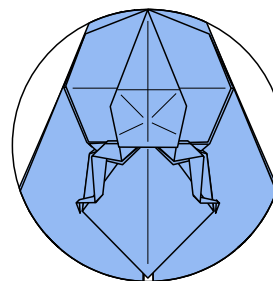
61. Reverse-fold the knee joint.

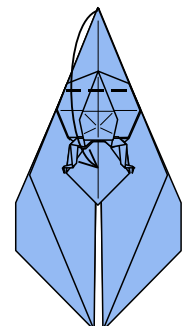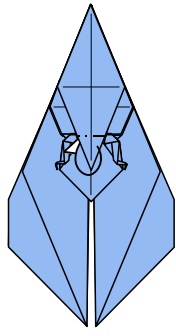**62.** Reverse-fold again...

63. ...and again.

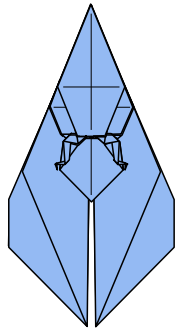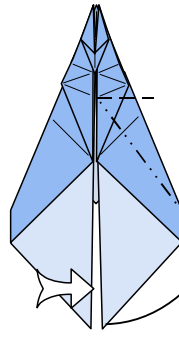**64.** Repeat steps 55 to 63 on the left side.
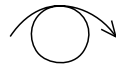
65. Legs and feet are completed.
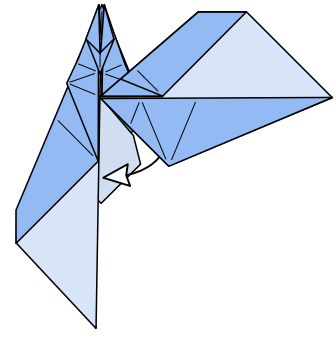
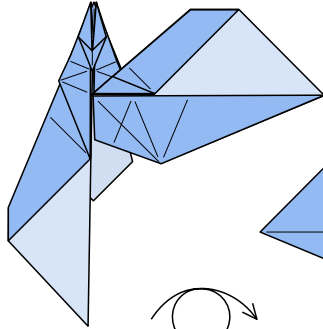**66.** Fold two layers as low as possible.

67. Tuck inside.
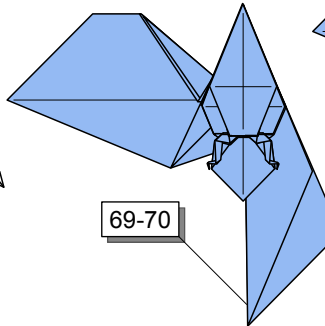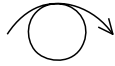
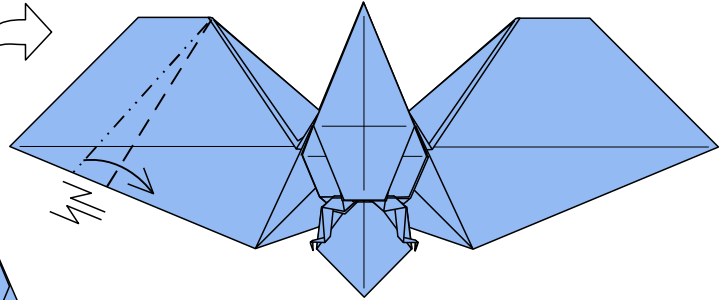**68.** Turn over.

69. Squash-fold. Check how layers lie in step 72.
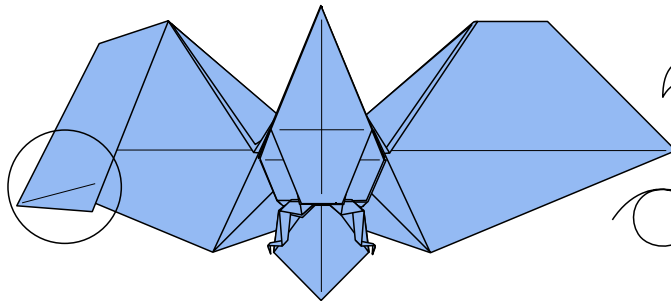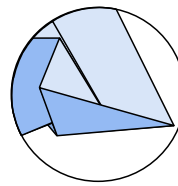
70. Pull out a hidden layer.

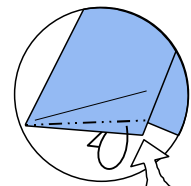**71.** Turn over.
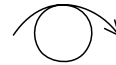
69-70

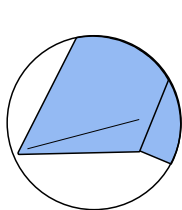**72.** Repeat steps 69 and 70 on the other wing.
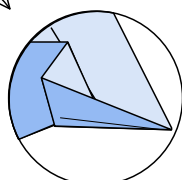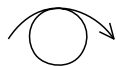
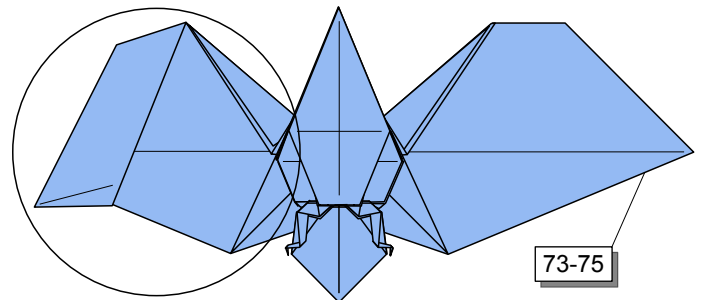**73.** Crimp-fold.
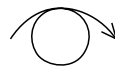
74. Focusing on the wingtip. Turn over.

75a. Turn over.
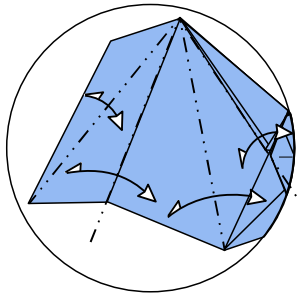
75b. Swivel-fold.
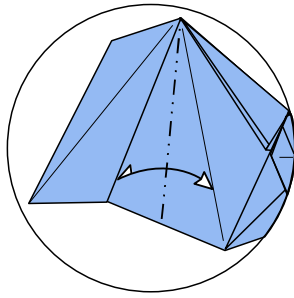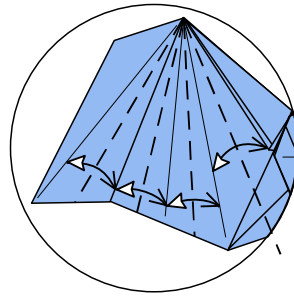
75c. Turn over.

75d. Turn over.

76. Repeat steps 73-75 on the right. Next steps will focus on the wing.
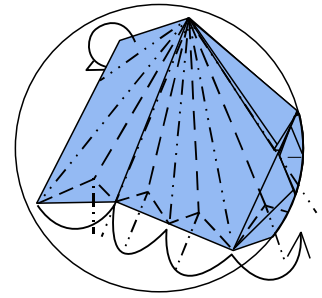
73-75

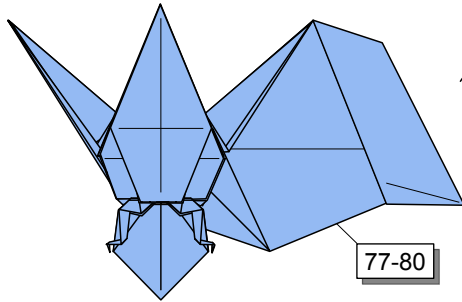**77.** Mountain-fold and unfold to 3 vertexes and along a spine.

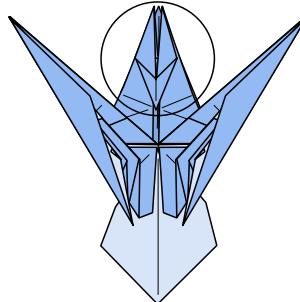**78.** Mountain-fold and unfold bisecting an angle.
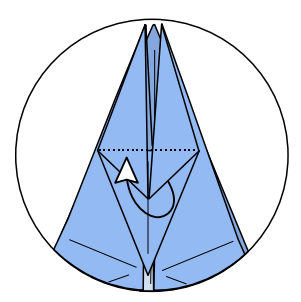
79. Valley-fold and unfold bisecting four angles.

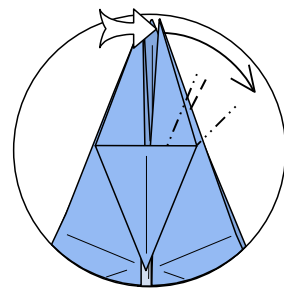**80.** Mountain-fold; accordion-fold incorporating rabbit ears.
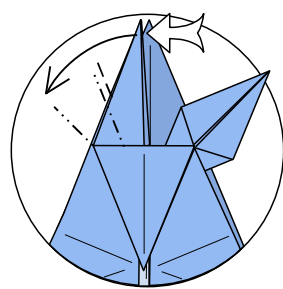
81. Repeat steps 77-80 on the right, then turn over.
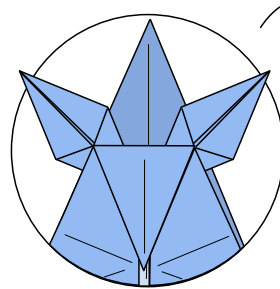
77-80

82. Now focusing on the head and ears.

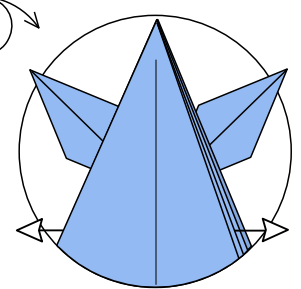**83.** Bring a layer to the front.
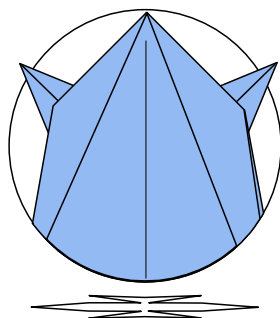
84. Squash-fold.

85. Squash-fold again on the left.
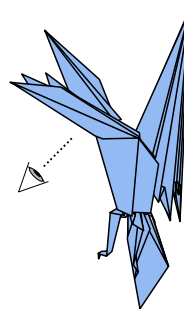
86. Turn over.

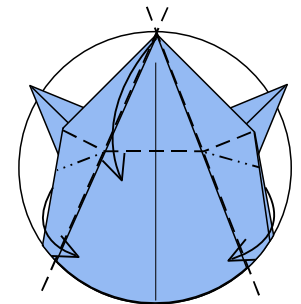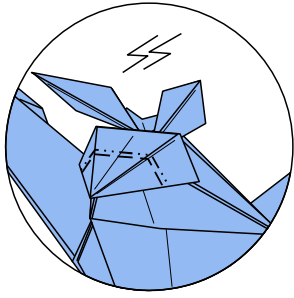**87.** Unsink the middle layers.

88. Done.
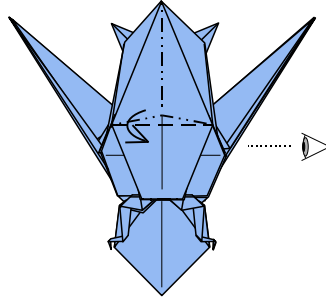
89. Bend the head forwards with a 3D rabbit ear. The head and neck will no longer be flat.
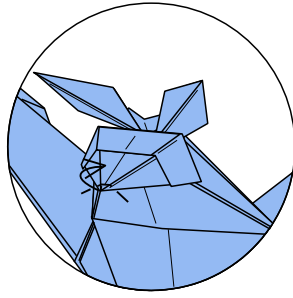
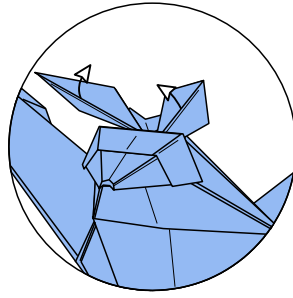**90.** Look under the neck again.

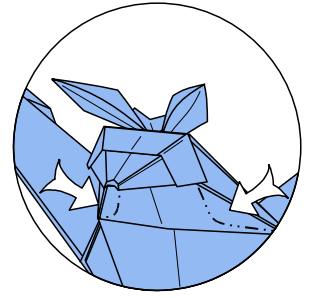**91.** Bend down the head. Narrow both muzzle and neck; don't flatten them.
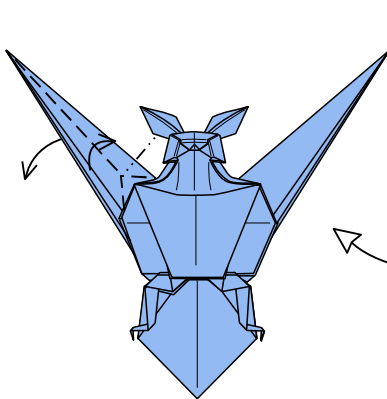
92. An optional, shallow 3D pleat fold.

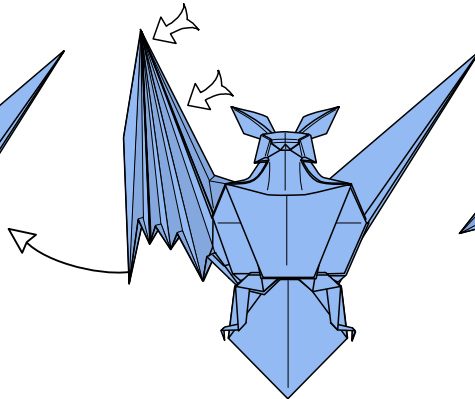**93.** Reverse-fold the tip of the muzzle.
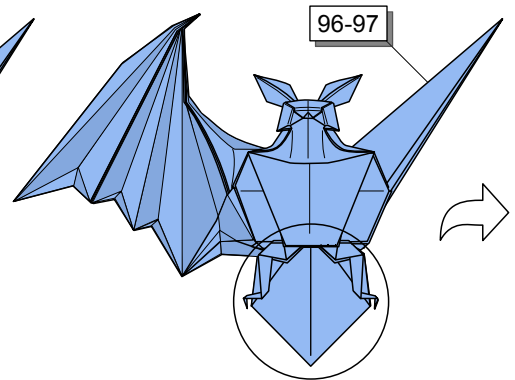
94. Open the ears slightly.
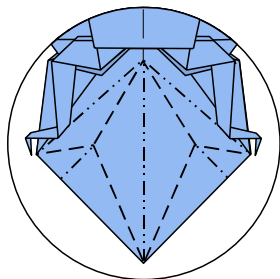
95. Further narrow the neck.

96. Rabbit-ear the thickest layer only, twisting the other layers 90 degrees.
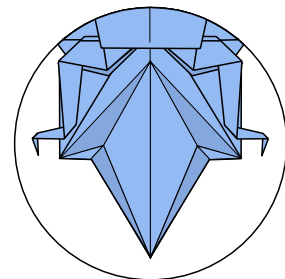
97. Sharply bend the thick layer at both elbow and thumb joints. Fan out the other layers.
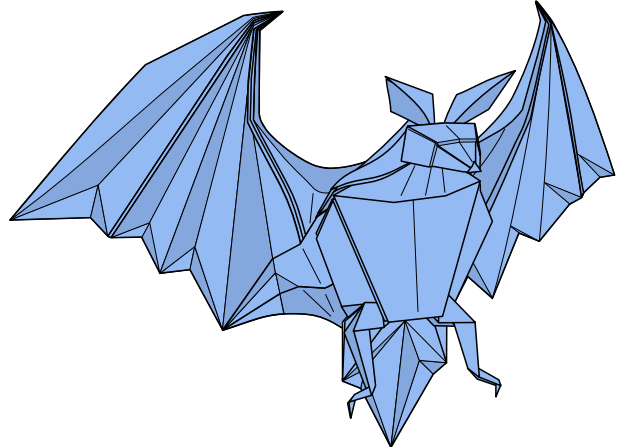
98. Repeat steps 96-97 on the right. Now focus on the tail.

96-97

99. Two rabbit ears. Don't flatten...

100. ...just narrow and shape the tail.

101. Model completed.