



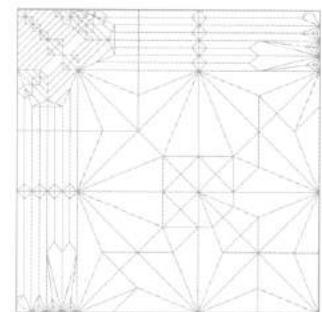
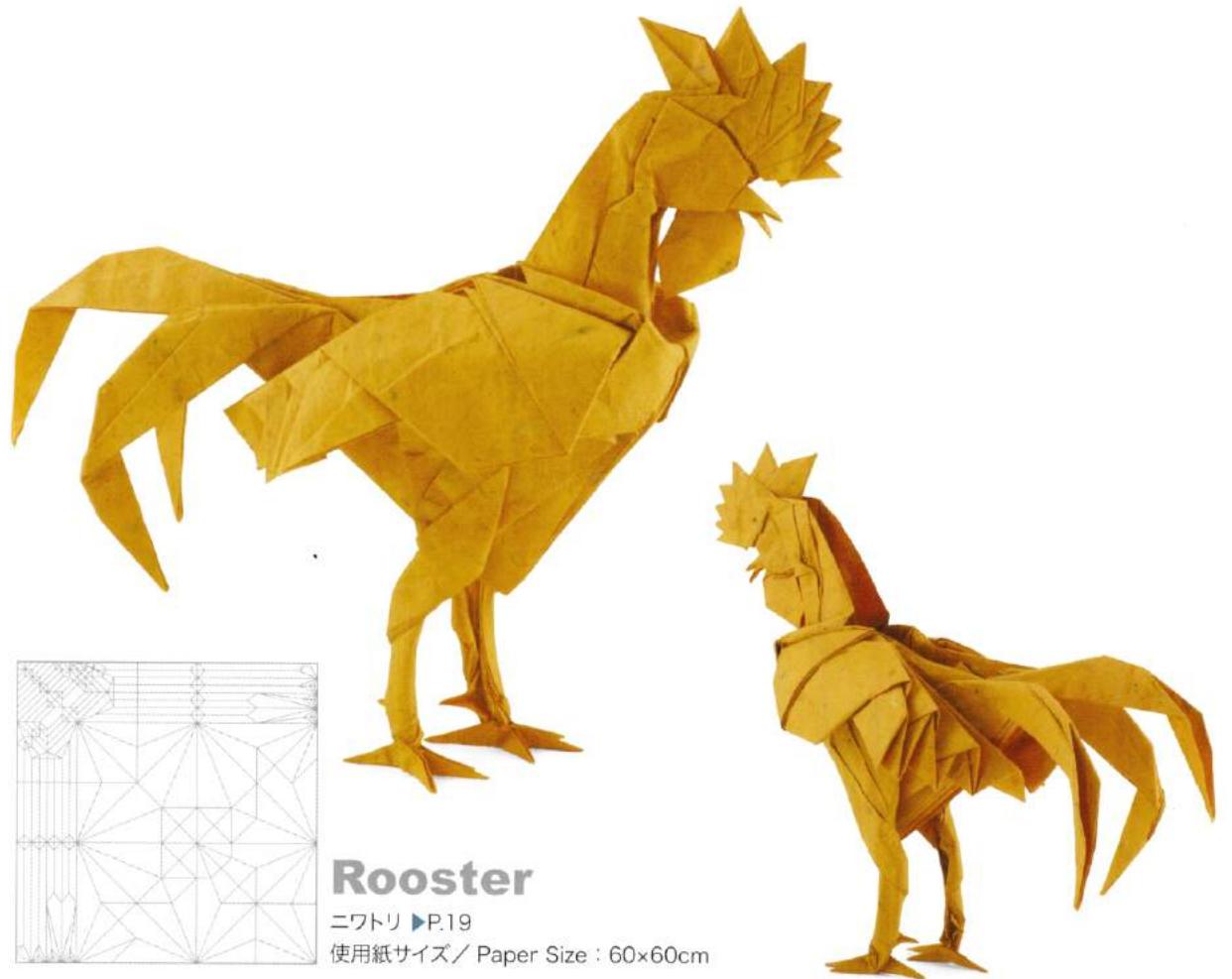
神谷哲史折り紙作品集3

Origami Works of Satoshi KAMIYA 3

神谷哲史・著 山口 真・編 立石浩一・訳

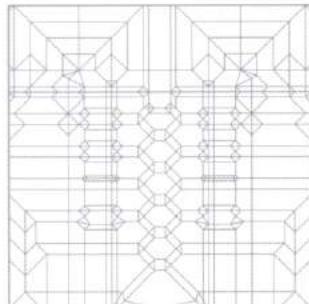


おりがみはうす



Rooster

ニワトリ ▶P.19
使用紙サイズ / Paper Size : 60×60cm



**Loggerhead
Sea Turtle**

アカウミガメ ▶P.52
使用紙サイズ / Paper Size : 48×48cm



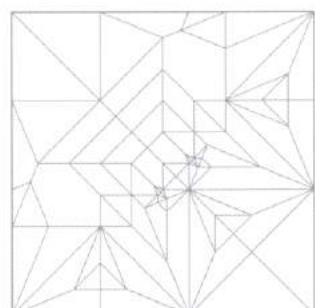
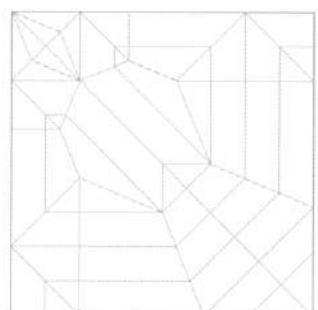
神谷哲史折り紙作品集3 Origami Works of Satoshi KAMIYA 3

神谷哲史・著 山口 真・編 立石浩一・訳

Model Design & Diagrams by Satoshi Kamiya
Editor : Makoto Yamaguchi
Translator : Koichi Tateishi

Penguin Chick

ペンギンの雛 ▶P.14
使用紙サイズ / Paper Size : 15×15cm



Angelfish

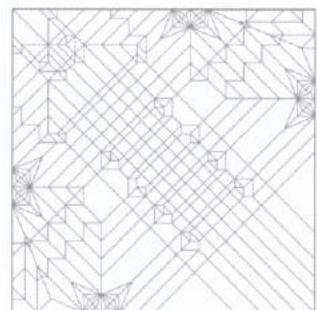
エンゼルフィッシュ ▶P.41
使用紙サイズ / Paper Size : 40×40cm



Manta Ray

マンタ ▶P.36

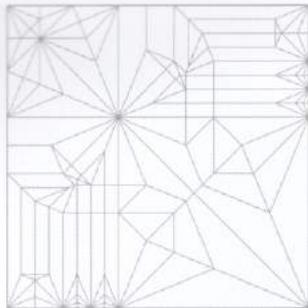
使用紙サイズ／Paper Size : 15×15cm



Spinosaurus

スピノサウルス ▶P.91

使用紙サイズ／Paper Size : 50×50cm



Deinonychus

ディノニクス ▶P.79

使用紙サイズ／Paper Size : 38x38cm



Eurypterus

ユーリプテルス ▶P.68

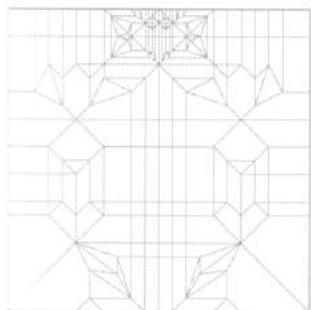
使用紙サイズ／Paper Size : 35x35cm



Horse

ウマ ▶P.109

使用紙サイズ／Paper Size : 50×50cm

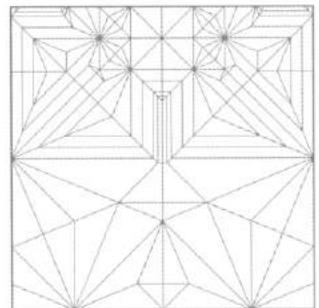


Tiger

トラ ▶P.123

使用紙サイズ／Paper Size : 90×90cm

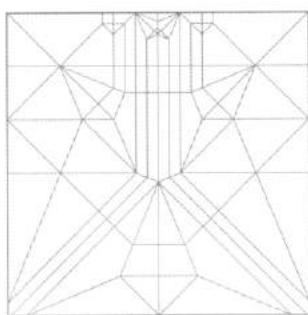
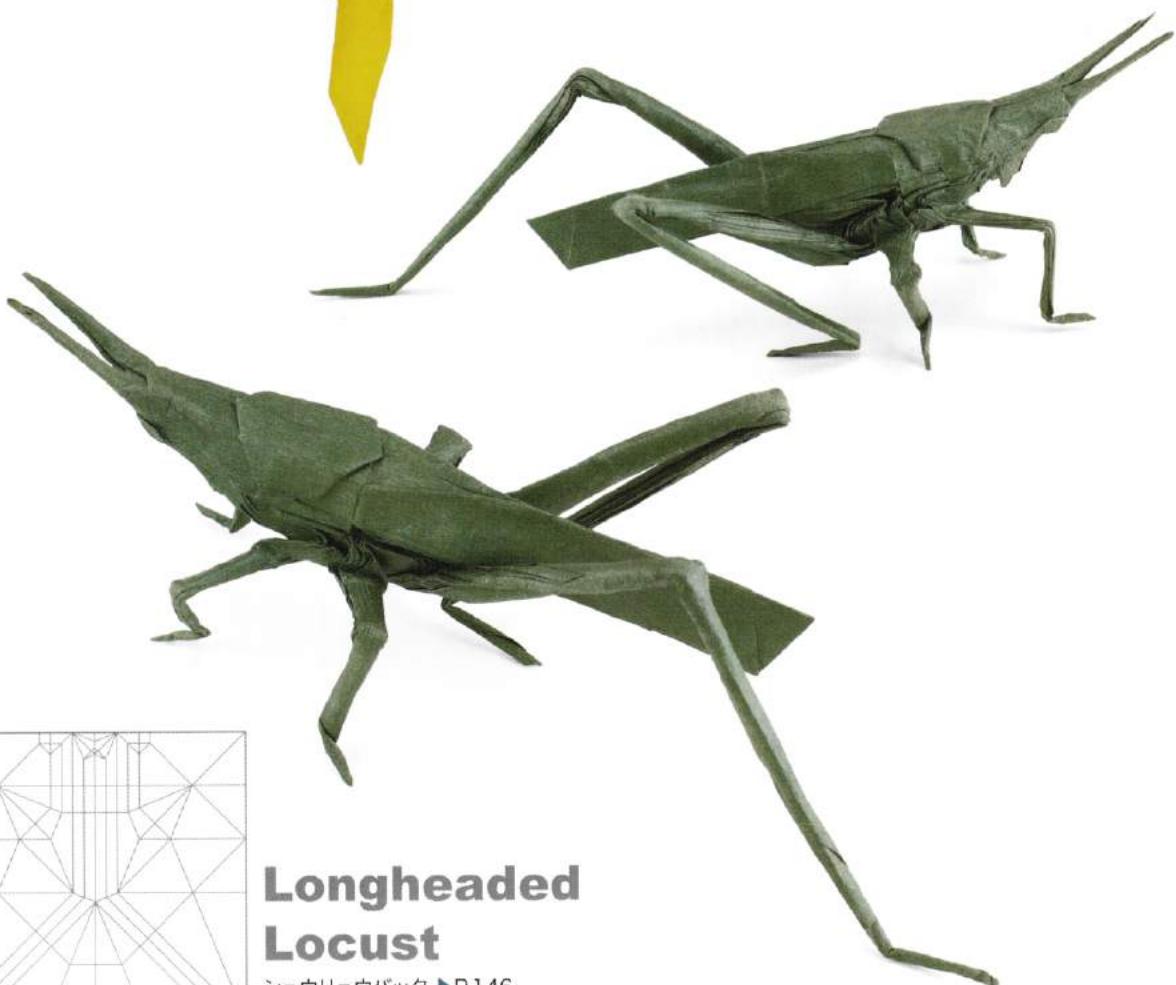




Butterfly

チョウ ▶P.156

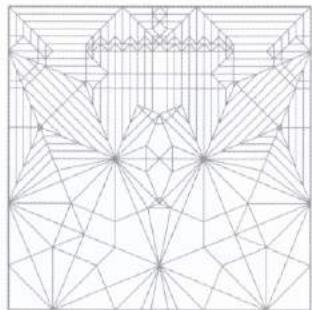
使用紙サイズ／Paper Size : 35x35cm



**Longheaded
Locust**

ショウリョウバッタ ▶P.146

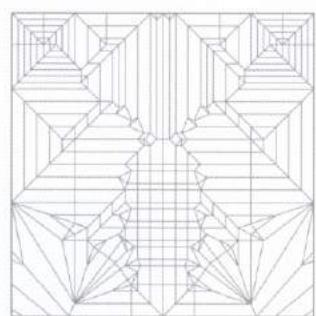
使用紙サイズ／Paper Size : 35x35cm



Praying Mantis

カマキリ ▶P.186

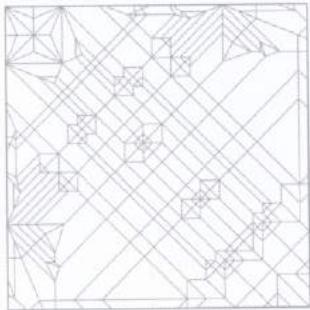
使用紙サイズ／Paper Size : 50x50cm



Dragonfly

トンボ ▶P.170

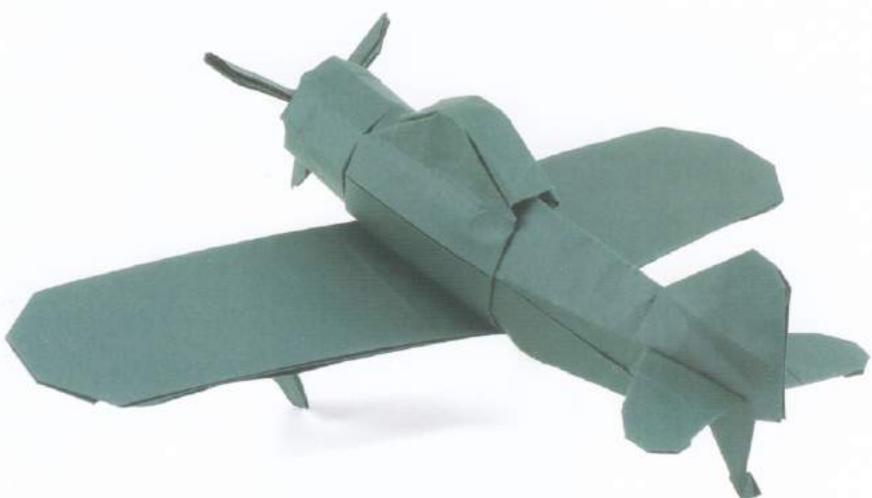
使用紙サイズ／Paper Size : 35x35cm



Zero Fighter

零式艦上戦闘機 ▶P.207

使用紙サイズ / Paper Size : 50×50cm



まえがき Foreword

本書に掲載されている作品は、2001年から2018年にかけて創作されたものです。創作を始めたころの作品を元にしているものや、折り図化まで期間の空いている作品もあり、もしかしたら少し古いと感じられる作品もあるのではないかと思います。

新しい作品を創作をする時は、常に何か新しいこと、面白いことをしたいと心掛けているが、折り紙の創作技術や表現方法は日々進化しています。本書の作品に使われている技術も、創作当時は目新しいものであったとしても、現在は普及し当たり前のように使いこなされているものがたくさんあります。

最新の創作技術の情報が共有され、多くの作家によって活用されるのは、技術の発展には理想的な状態といえます。そう考えると、創作から時間の経った作品が古く感じるというのは、とても健全であり喜ばしいことなのかもしれません。現在、そしてこれから先の未来に「当たり前」となる技術や表現方法に対して、本書がその普及の一助となれば幸いです。

The models in this book were designed in the period 2001-2018. Some are remakes of older works and some others took time until they were finally diagrammed, so readers may feel that some models look old.

When I design a new model, I always try to do something "innovative", but skills and expressions of origami models are always being improved. The "innovation" at one time quite often is a matter of course currently.

However, sharing skills and methods of expressions among folders is always good for improvement and development of the world of origami. In that sense, some skills' becoming a matter of course would be a very sound move and we would have to celebrate it. I hope this book will be of some aid for skills in this book to become "a matter of course" in the near future.

神谷哲史 Satoshi Kamiya

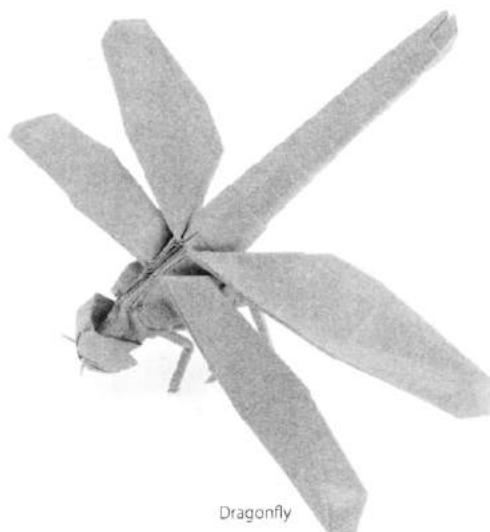
目次 Contents

- 9 まえがき／Foreword
- 11 折り図記号と基本の技法／Symbols and Basic Techniques
- 13 折り紙初心者の方へ／To Origami Beginners and Novices

神谷哲史折り紙作品集 3

Origami Works of Satoshi KAMIYA 3

- 14 ペンギンの雛／Penguin Chick
- 19 ニワトリ／Rooster
- 36 マンタ／Manta Ray
- 41 エンゼルフィッシュ／Angelfish
- 52 アカウミガメ／Loggerhead Sea Turtle
- 68 ユーリプテルス／Eurypterus
- 79 ディノニクス／Deinonychus
- 91 スピノサウルス／Spinosaurus
- 109 ウマ／Horse
- 123 トラ／Tiger
- 146 ショウリヨウバッタ／Longheaded Locust
- 156 チョウ／Butterfly
- 170 トンボ／Dragonfly
- 186 カマキリ／Praying Mantis
- 207 零式艦上戦闘機／Zero Fighter



Dragonfly

折り図記号と基本の技法

Symbols and Basic Techniques

「神谷哲史折り紙作品集3」は、難しい折り紙作品の折り方の本です。折り方(折り図)には折り紙の専門用語や特殊技法がでてきます。それらは、初めて見る方には難しく感じられることも多いでしょう。

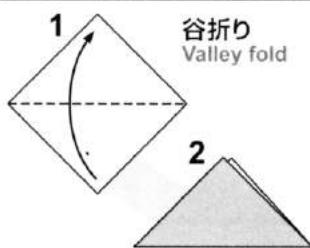
ここでは、それらの基本を示しました。折り進めるうちに、分からぬ用語や折り方に出会ったら、まさこのページを見直してみてください。「基本」ですから、必ずしも同一ではありませんが、解決の糸口はきっと見つかるはずです。

In *Origami Works of Satoshi Kamiya 3*, you will see in the diagrams many technical terms and folding techniques which are not familiar to you. This page shows you the very basic terms of origami. Always refer to this page when you are in trouble. As the page only describes only the basics, you may not find the exact term you are looking for, but the basics here certainly will help you solving the problem.

折り線の種類 Types of crease lines

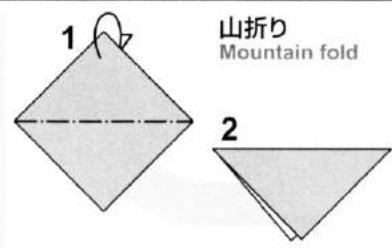
谷折り線 Valley fold

手前で折る
Fold paper forwards



山折り線 Mountain fold

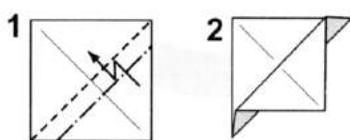
後ろへ折る
Fold paper backwards



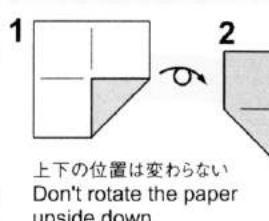
いろいろな記号 Symbols

段折り Pleat fold

横から見ると段になっているように見える
Pleats are formed when you look from the side.

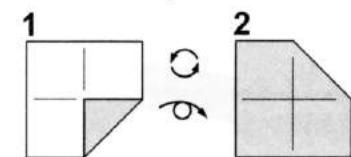


裏返す Turn paper over



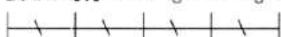
上下が変化する場合は
回転記号を併用する

When turning over vertically,
the rotation symbol is also used.



等分記号 Division

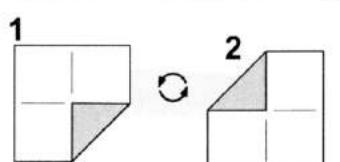
長さの等分 Dividing the length



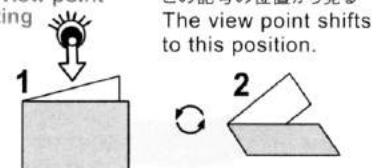
角度の等分
Dividing the angle



紙の向きを変える Rotation



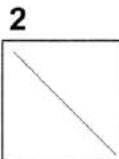
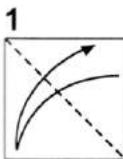
視点が変わる
The view point shifting



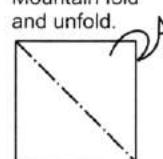
折り筋をつける

Making a crease line

一度折ってから戻して折り筋をつける
Fold and mark a crease line, then unfold.



山折りにつける
場合もある
Mountain fold and unfold.

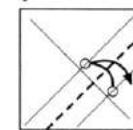


特殊な折り筋のつけ方 Various types of crease lines.

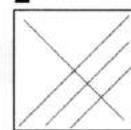
折り筋と折り筋を
合わせて折り筋をつける
Fold line to line and
unfold.



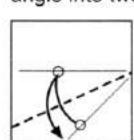
1



2



斜めにつける
場合もある
Crease lines sometimes
divide the angle into two.

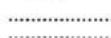


○の山折り線を折り筋に
合わせて折って戻す
Pleat aligning the
crease line to another
crease line and unfold.

次の図を拡大
A magnified view



隠れた線・形
A hidden line / layer



引き出す
差し込む
Pull out
Insert a flap



ひろげる
Open up



注意するところ
Marked points
(reference points)



同じ場所を示す
These points are on
top of each other.



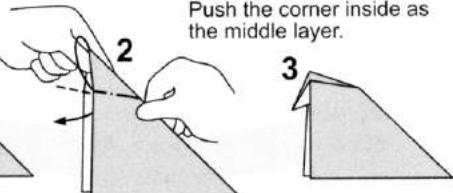
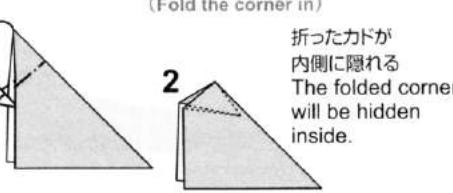
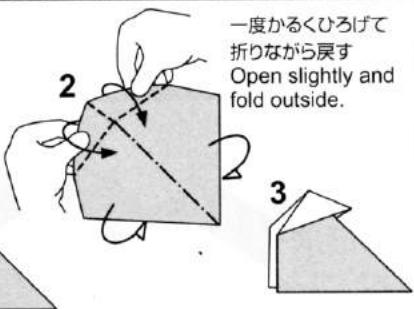
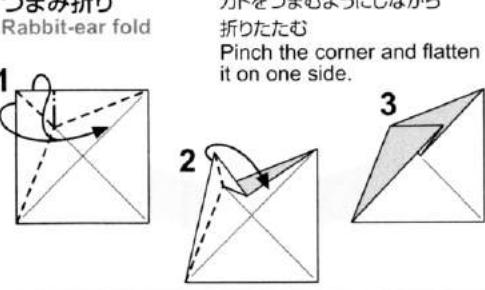
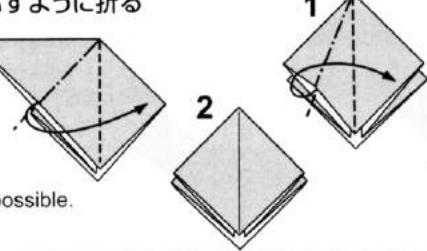
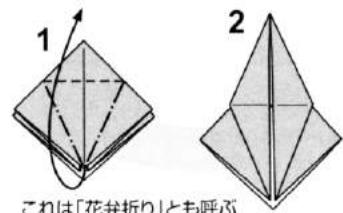
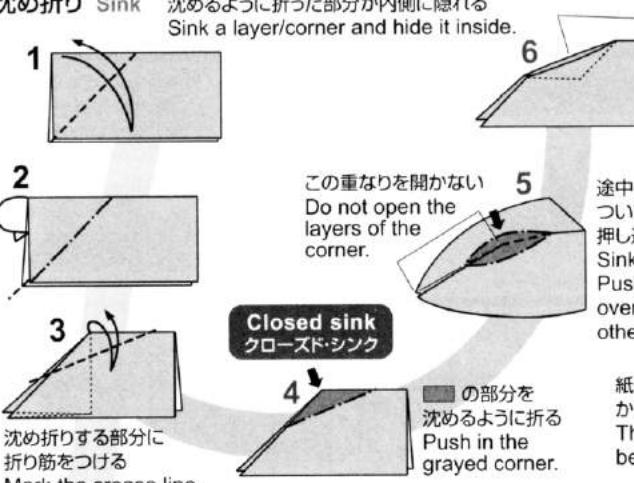
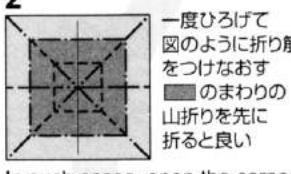
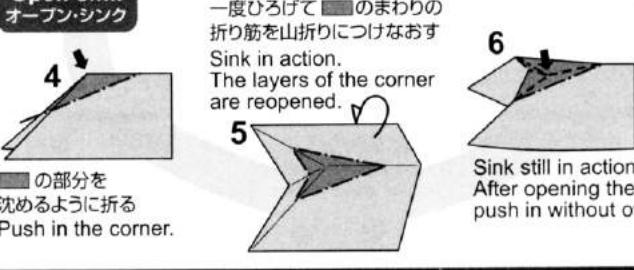
押す・つぶす
Push paper in



直角
Right angle



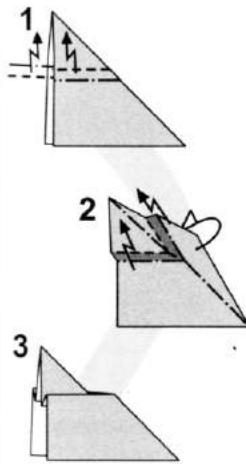
折り方の技法 Basic Folding Skills

<p>中わり折り Inside reverse fold 内側を割るように折ってカドを出す Push the corner inside as the middle layer.</p> 	<p>カドを内側に折る Inside reverse fold (Fold the corner in) 折ったカドが内側に隠れる The folded corner will be hidden inside.</p> 
<p>かぶせ折り Outside reverse fold 両側の紙を裏返すようにしてかぶせる Wrap the corner around the layers.</p> 	<p>つまみ折り Rabbit-ear fold カドをつまむようにしながら折りたたむ Pinch the corner and flatten it on one side.</p> 
<p>内側をひろげてつぶすように折る Squash fold 角度が違ったり部分的に折る場合もある Many types of total / partial squashing are possible.</p> 	 <p>これは「花弁折り」とも呼ばれる This type of squashing is called the petal fold.</p>
<p>沈め折り Sink 沈めるように折った部分が内側に隠れる Sink a layer/corner and hide it inside.</p>  <p>紙のヒダが閉じた(closed)かたちになっている The layers are locked.</p> <p>途中の図 ついている折り筋で押し込むように折る Sink in action. Push in with layers overlapped onto each other.</p> <p>紙のヒダが開いた(open)かたちになっている The layers can be reopened.</p>	<p>沈めるように段折り Sink in and out</p> <p>■の部分を沈めるように段折り Sometimes sink requires the pleat-like structure by sinking in and out.</p>  <p>一度ひろげて図のように折り筋をつけなおす ■のまわりの山折りを先に折ると良い</p> <p>In such cases, open the corner once, and fold the existing crease lines. Start from the mountain folds around the gray area.</p>
<p>Open sink オープン・シンク</p>  <p>途中の図1 一度ひろげて■のまわりの折り筋を山折りにつけなおす Sink in action. The layers of the corner are reopened.</p> <p>途中の図2 ついている折り筋で■の部分を沈めながら折りたたむ Sink still in action. After opening the corner lightly, push in without overlapping layers.</p> <p>■の部分を沈めるように折る Push in the corner.</p>	<p>それぞれカドのところからつまむようにして折りたたむ Pinch the corners and flatten.</p> 

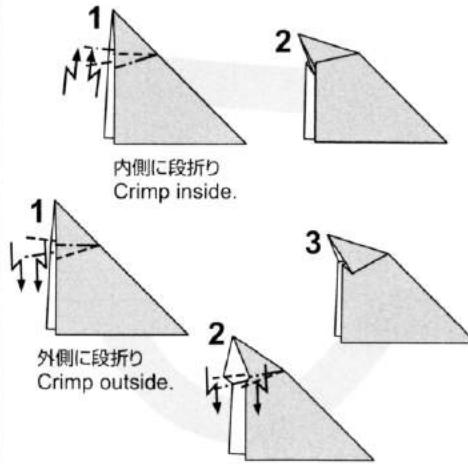
特殊な段折り Pleating and Crimping Layers

両側で段折り Pleating and crimping on both sides.

両側で同 段折りする
Pleat on both sides at the same time.

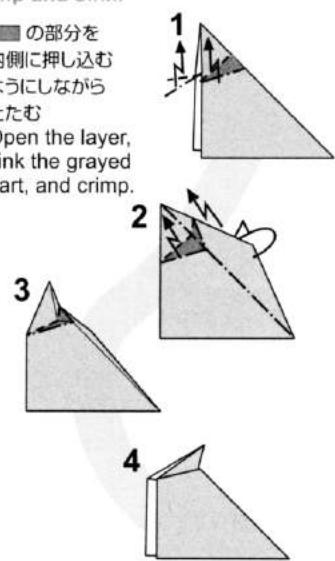


斜めに折る場合もある
Crimp on both sides at the same time.



内側に押し込むように両側で段折り
Crimp and sink.

■の部分を
内側に押し込む
ようにしながら
たたむ
Open the layer,
sink the grayed
part, and crimp.



●折り紙初心者の方へ

1 本書の作品の多くは、最初の段階で折り筋をたくさんつけます。とても大切な作業ですので、つけ間違いのないよう、よく折り図を見て進んでください。

2 折り筋は正確にはっきりとつけてください。カドや○で示したところは、間違いやすい部分ですから特に注意しましょう。

3 紙の裏と表、向きは大事です。1工程折るたびに紙を図と同じ向きに並べ、正確に折れているかどうか確認していくと間違いを防ぐことができます。

4 一見複雑な折り方があるっても、折り線には「山」と「谷」しかありません。あわてず1つ1つ折り紙と図を見比べて、まずは図の通りに折り筋をつけてみてください。また、少し先の図を見て、折った後の形をイメージしながら折るのも良いでしょう。

5 難しい作品ばかりですから、一度の挑戦では上手に折れない場合もあります。初めて折る場合は、まず練習(試作)のつもりで折りましょう。練習には市販の折り紙用紙が適しています。

6 作品は何度も折るうちに、きれいに折れるようになっていきます。難しい折り紙には、何よりも根気が大事です。

7 何度も紙を折りたたみますから、途中で紙がぼろぼろになり形が分からなくなることもあります。そんな場合は思い切って最初から折り直しましょう。また少しの破れなら、セロハンテープで裏から貼り合わせ、そのまま折り進めても良いでしょう。

●「使用紙サイズ」について

本書では、折りが細かすぎて小さな紙で折ることができない作品があります。そのため、用紙選びの参考に、作例で実際に使用した用紙のサイズを付記しました。

作品を折るのに必要な大きさは、使用する紙の種類や厚みによって変わります。最初に挑戦する時は、少し大き目の用紙を使うと良いでしょう。

中には、折り紙用紙として市販されていない大きさもあります。その場合はなるべく薄くて丈夫な紙(例えば一番薄い上質紙など)を探し、正方形に切って使ってください。

To Origami Beginners and Novices:

The models in this book require that you make many crease lines before assembling. The process of creasing is very important for the completing the model, so fold as precisely as possible, always with the next diagram as your reference.

Crease precisely. Don't crease from/through the wrong corners. Use reference points on the diagrams (circled or dotted in many cases) as your guide.

Take special care on the side and orientation of the sheet. When you have done one step, carefully check your folded model with the diagram orienting them towards the same direction.

Keep in mind that folding processes in origami only consist of mountain and valley folds. Your best reference is always the next diagram.

It is the fact of life that the models in this book are difficult, so don't expect that you can fold them beautifully in your first try. Use regular origami paper for practice.

Be patient. You can make it in the end.

Sometimes the paper will be ragged and torn into pieces. If this happens, take another sheet of paper and start from the beginning. If the raggedness is not so disastrous, you may be able to tape the back of the sheet and continue your folding.

The Necessary Size of the Sheet:

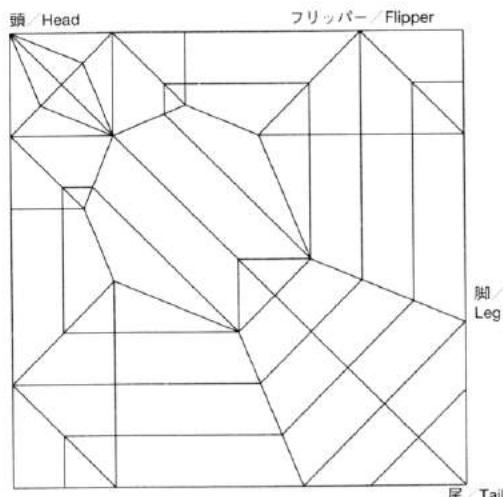
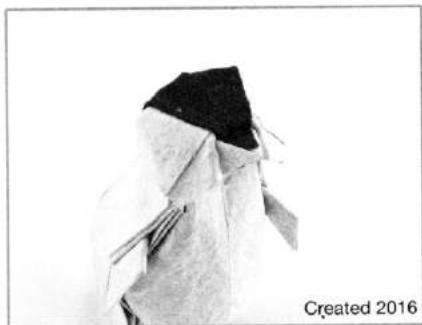
The size of the sheet of paper with which you fold is written in the colored sample models pages. This is because the models sometimes need very skillful foldings.

However, the size is only RECOMMENDED. We suggest you start with a larger sheet, but you can always be a challenger!

Regular origami sheets may not have the recommended sizes. If so, take thin and strong paper and cut it into a square.

ペンギンの雛

Penguin Chick

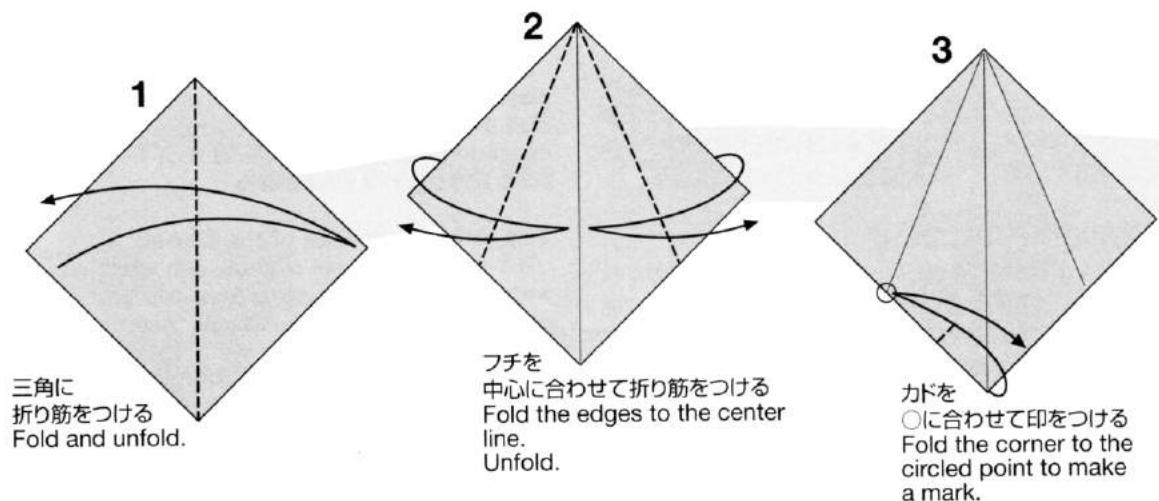


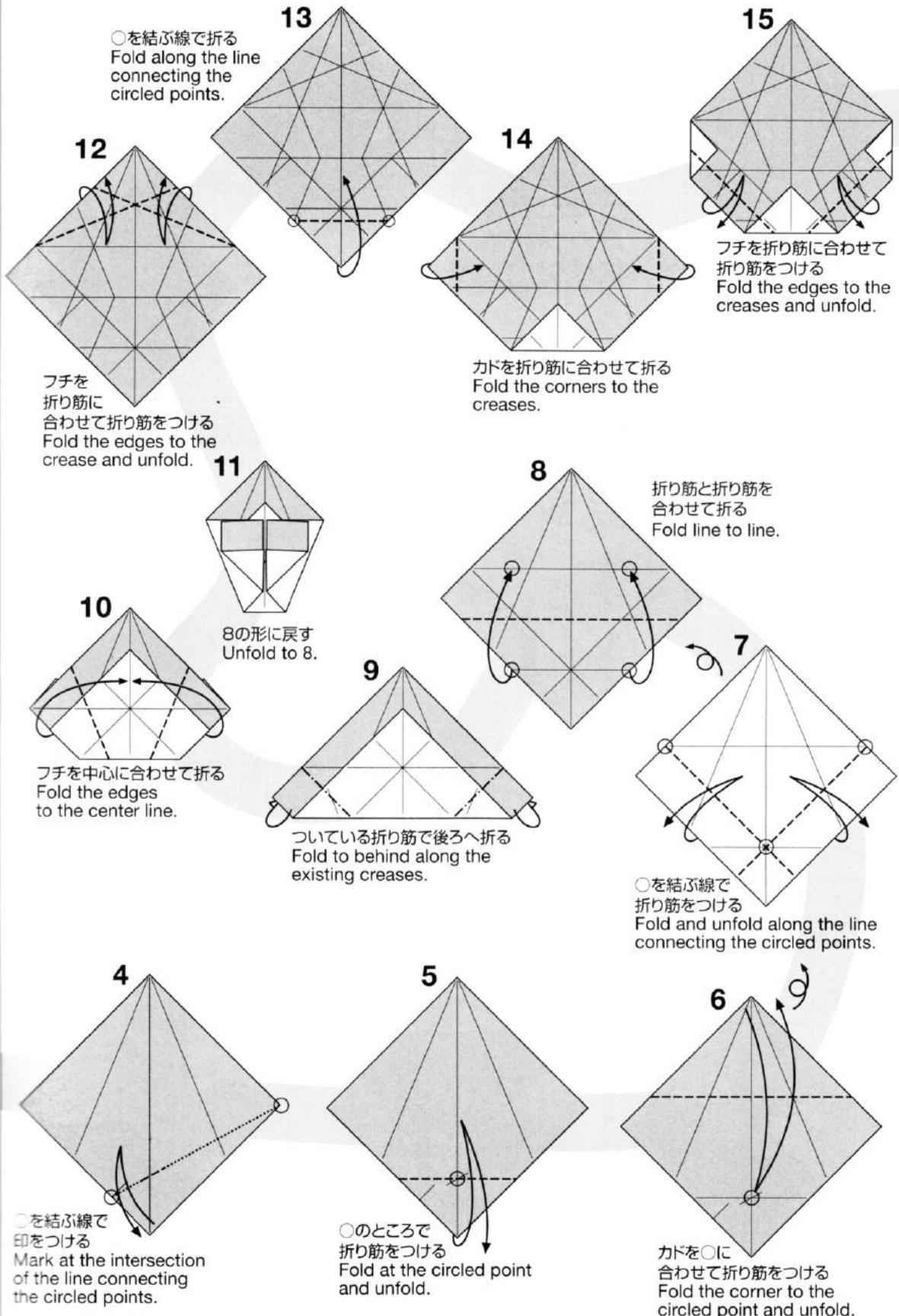
近 年創作をする人口も増え、日々多くの新作が生み出されています。このままだと何もかも折り尽くされてしまい、折る題材に困るのではないかと心配する方もいるかもしれません、そんなことはありません。少し視点を変えて周りを見れば魅力的な題材はまだたくさんあります。ただ折り紙の題材として認識されていないだけなのです。

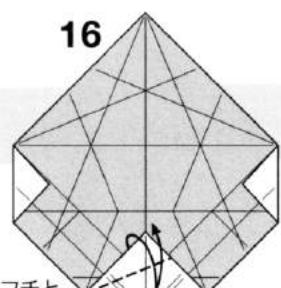
このペンギンの雛もそういった題材の一つだったのかもしれません。この題材を折ろうと思ったのは、博物館でコウテイペンギンの親子の剥製を見ていた時に、ペンギンの折り紙はたくさんあるけれど、雛を題材とした作品は見た覚えがないことに気がついたのがきっかけです。よく見ると色分けも可能で、うまく創ればかわいい仕上がりになりそうです。考えられる構造は、頭の色分けの折り出し方法からある程度限定されます。そのため8割くらいまではすぐにできたのですが、実は下半身の構造は難航しました。結局少し時間を置いた後、ふと現在の比率を思いつき実際に試してみたところあっさりとまとまりました。結果を見てからだとなぜ当時は気がつかなかったのかと不思議に思いますが、まあそういうものです。

We find much more folders/designers these days, and we do have so many new models. One might worry that we may end up with being in short of motifs, which is just not true. We find so many potential motifs, or, with old motifs, we can always change the focus and scope.

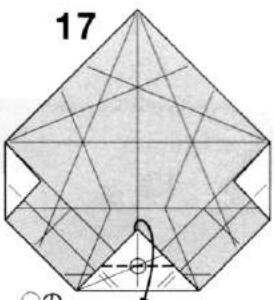
A penguin chick is one such "newly-discovered" motif. I discovered this new motif when I was watching a stuffed exhibition of parent-chick emperor penguins in a museum. The chick is with a change of color, so it will become a very good motif for a color change model. The structure of the model is bound by the color change on the head, so I found 80% of folding procedure pretty smoothly though I had hard time to complete the lower half of the body. With some "cooling-off" period, I found the current ratio of flaps, and the model was completed naturally. Sometimes refraining from designing a particular model for a while works like this.



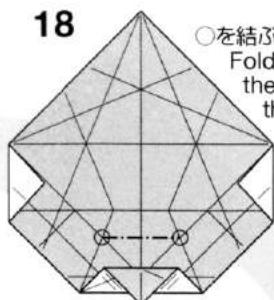




フチと
フチを合わせて折り筋をつける
Fold edge to edge and unfold.

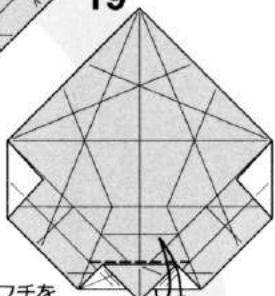


○の
ところにカドを下へ折る
Fold the corner down
at the circled point.

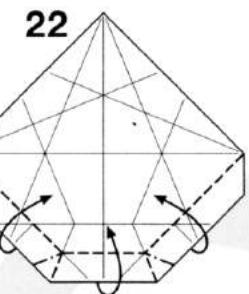


○を結ぶ線で折り筋をつける
Fold and unfold along
the line connecting
the circled points.

19

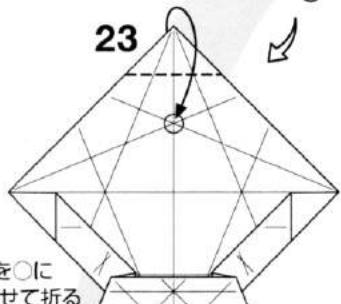
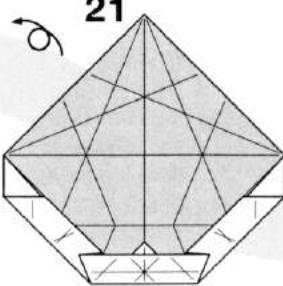


フチを
折り筋に合わせて折り筋をつける
Fold the edge to the crease
and unfold.



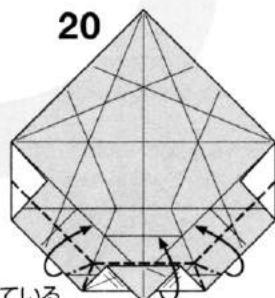
ついている
折り筋を使って
つまむように
折る
Fold the
edges along
the existing
creases.

21

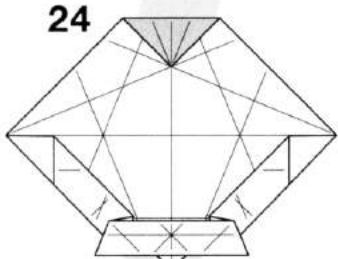


カドを○に
合わせて折る
Fold the corner
to the circled point.

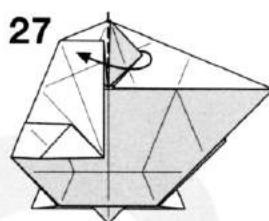
20



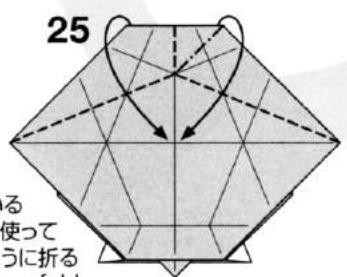
ついている
折り筋を使ってつまむように折る
Fold the edges along the
existing creases.



24

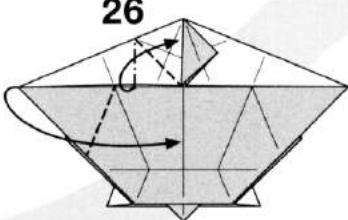


カドを反対側へ折る
Fold the corner
to the other side.



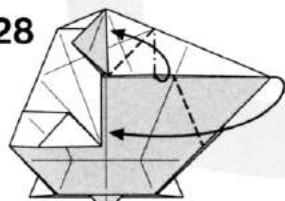
ついている
折り筋を使って
つまむように折る
Rabbit-ear fold.

26

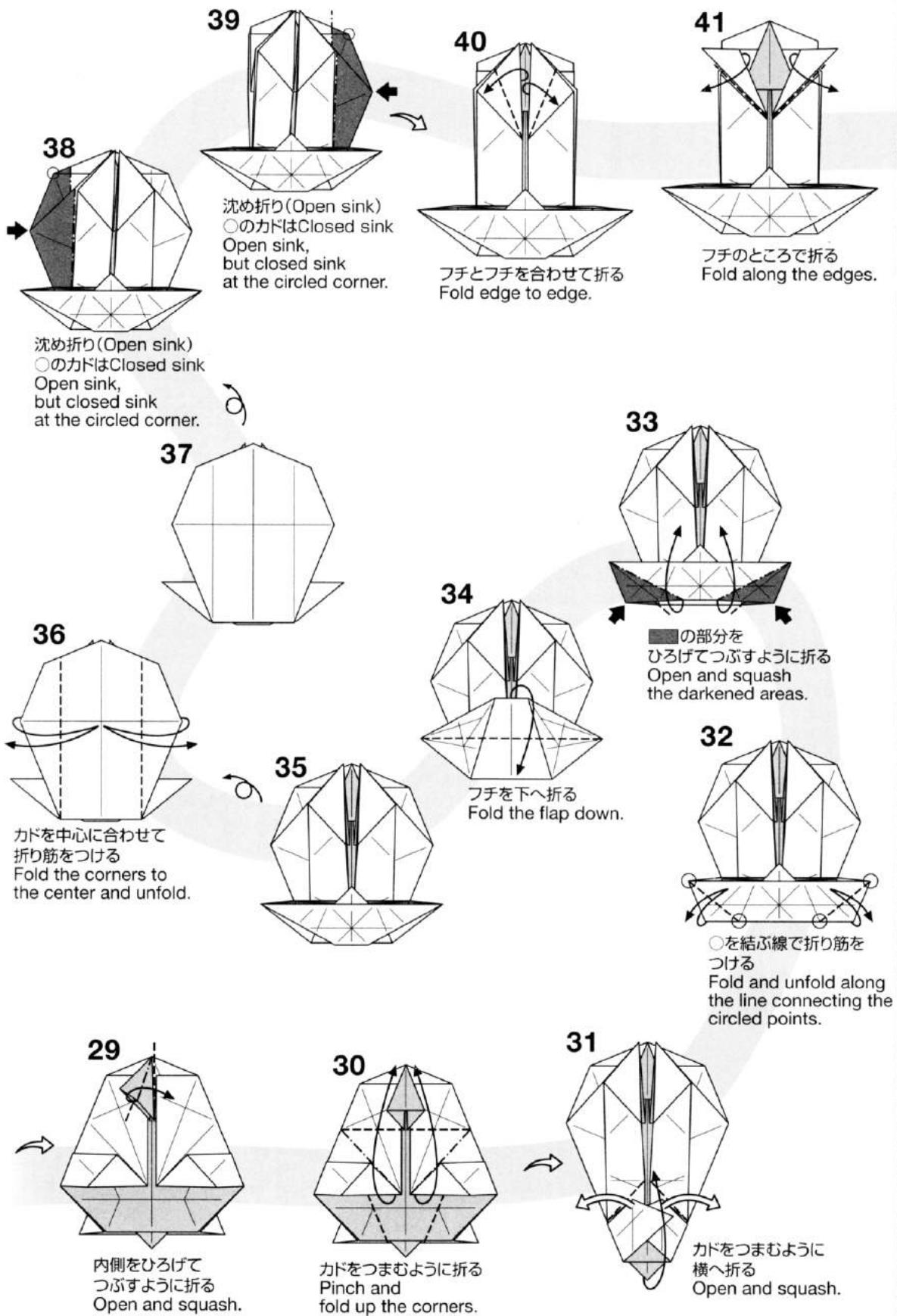


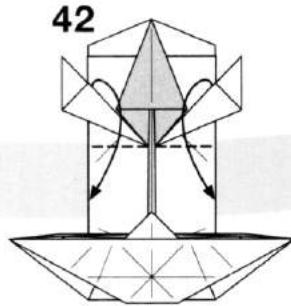
ついている折り筋を使って
折りたたむ
Fold and swivel using
the creases.

28

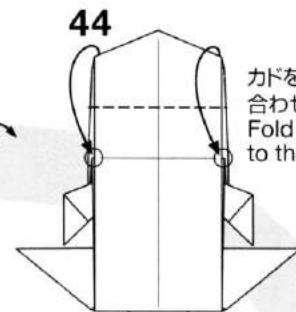
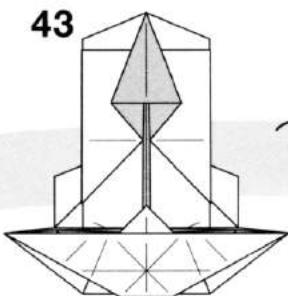


ついている折り筋を使って
折りたたむ
Fold and swivel using
the creases.

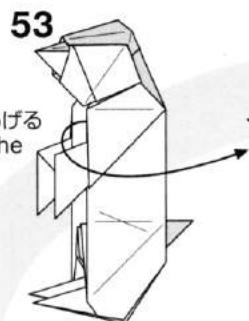




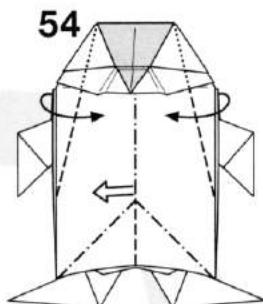
カドを下へ折る
Fold the flaps down.



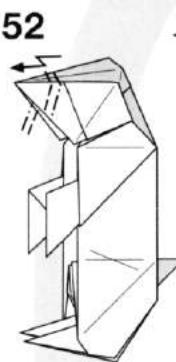
カドを○に
合わせて折る
Fold the corners
to the circled points.



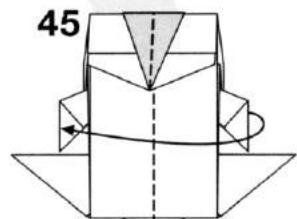
軽くひろげる
Open the
layer.



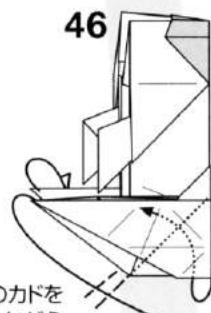
紙を出すように折って
形を整える
Pull out the inner layer
and shape the model 3-D.



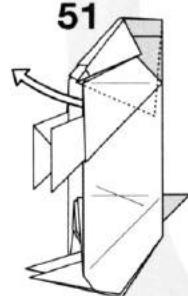
立体的に
段折り
Pleat inside.



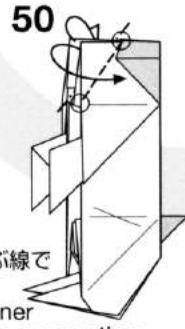
半分に折る
Fold in half.



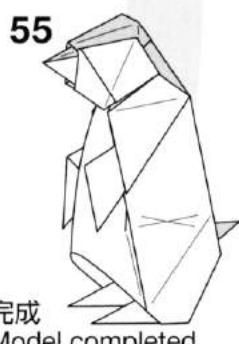
両側のカドを
下ろしながら
中心のカドを中わり折り
Inside reverse fold the
inner flap while folding
down the longer flaps.



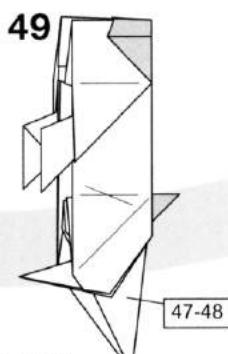
内側のカドを引き出す
Pull out the hidden
corner.



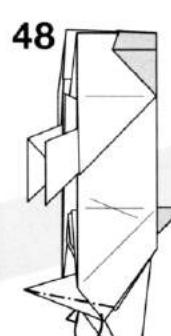
カドを○を結ぶ線で
折る
Fold the corner
along the line connecting
the circled points.



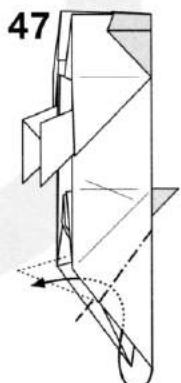
完成
Model completed.



反対側も
47-48と同じように折る
Repeat 47-48 behind.



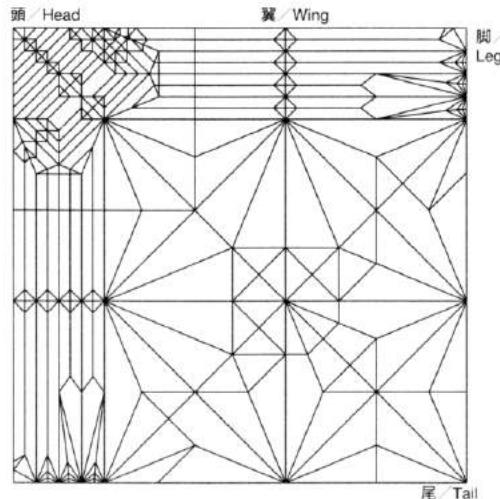
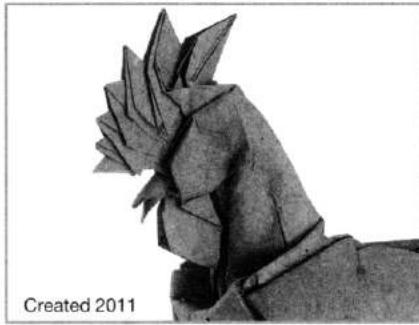
フチを後ろの
すき間へ折り込む
Mountain fold the edge
into the slot behind.



中わり折り
Inside reverse
fold.

ニワトリ

Rooster



この作品は、仕事の依頼で創作した干支作品の一つです。短い期間に12種類の作品を揃える必要があったため、新しく創作した作品は効率と速度を優先して創作を行いました。ではどうすれば効率と速度を上げられるのかというと、可能な限り過去の資産を利用して、アレンジやリメイク、それ以外にもいわゆる基本形や、パートの造形、カド配置など、これまでに創作した作品で使用した技術やアイディアを再利用します。

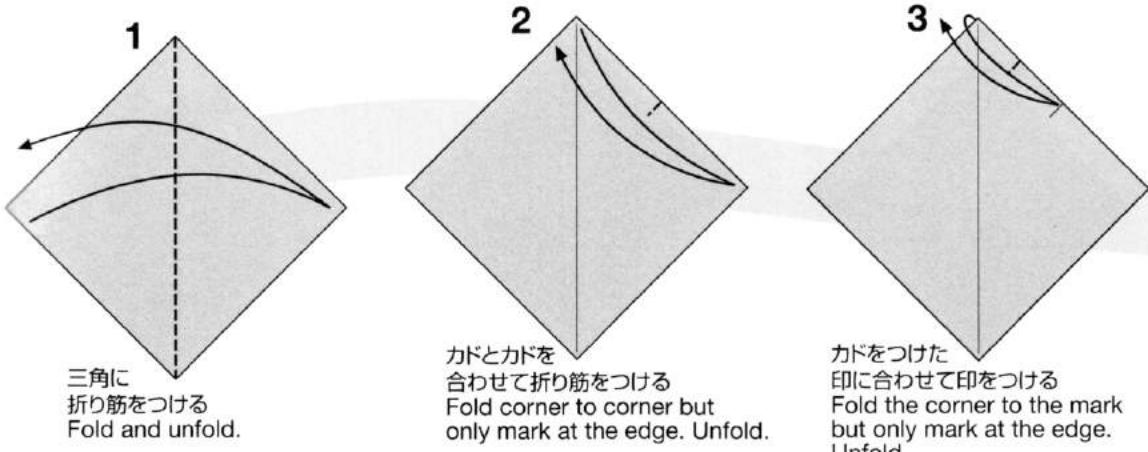
このニワトリの場合は、基本構造を創作を始めた頃の作品「鳳凰」の構造をそのまま再利用しています。とはいっても特別なものではなく、いわゆる4鶴を崩した構造の外側にヒダを付加したシンプルなものです。当然目新しさはありませんが、その分応用のきく使いやすい面もあり、なにより扱ったことのある構造なので、基本形まではあまり悩まずにすみ、仕上げの形に集中して作業することができます。

また造形面では見栄えを重視して仕上げています。特にトサカの部分に多くのカドを折り出して派手な形に仕上げています。ある程度全体のバランスがとれているのが前提ですが、適度な外連味は作品のよいアクセントになるのではないかと思います。

When I designed this model, I was asked to design all the Chinese Zodiac animals in a short period of time. In such a case, speed and efficiency are critical. I had to look back at my past works, rearrange/remake them sometimes. Also, I reused ideas and techniques adopted in the past, such as bases, shaping of parts, and distribution of necessary flaps.

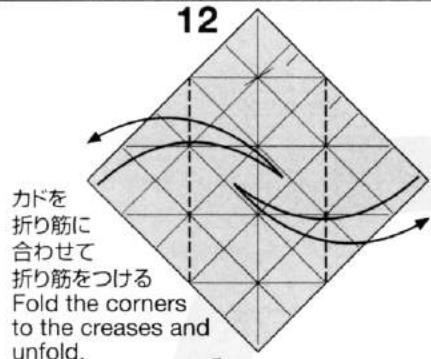
I reused the structure of my "Chinese Phoenix" in this model. It is nothing special, a simple rearranged "four bird bases" structure with pleats on the edges. Nothing is new in the structure, but it is easy to handle it as I have used it in the past. I did not have to give much effort on the base form, so that I could concentrate on the shaping.

I thought much about the visual impression of this model. I spent many small flaps for the cockscomb to show it off. The visual balance of the completed model is of course important, but sometimes the models need such prominent features.



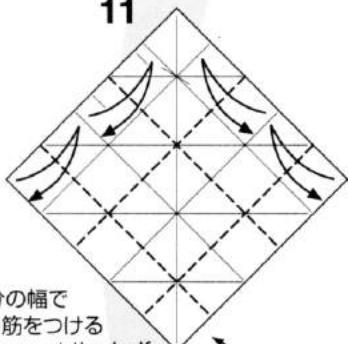
ニワトリ

12



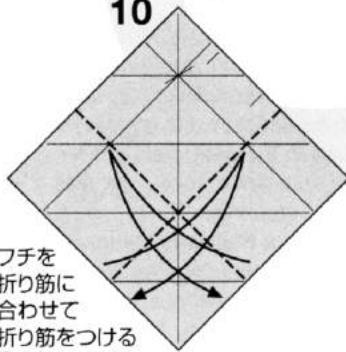
カドを
折り筋に
合わせて
折り筋をつける
Fold the corners
to the creases and
unfold.

11



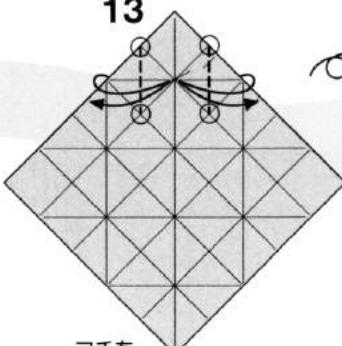
半分の幅で
折り筋をつける
Crease at the half
of the width.

10



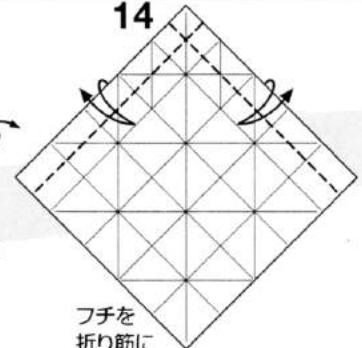
フチを
折り筋に
合わせて
折り筋をつける
Fold the edges to
the creases and unfold.

13



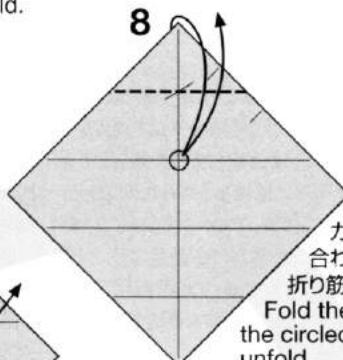
フチを
折り筋に
合わせて
折り筋をつける
Fold the edges to the
creases and unfold.

14



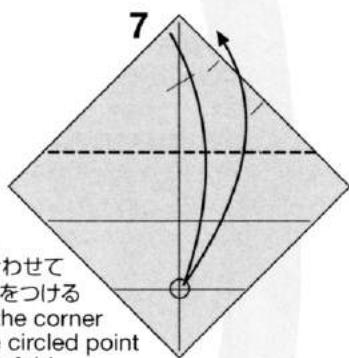
フチを
折り筋に
合わせて折り筋をつける
Fold the edges to the
creases and unfold.

8



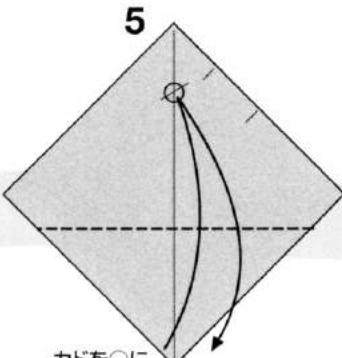
カドを○に
合わせて
折り筋をつける
Fold the corner
to the circled point
and unfold.

7



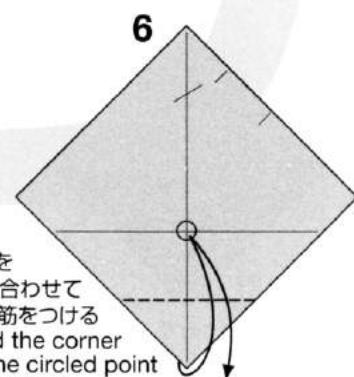
カドを
○に合わせて
折り筋をつける
Fold the corner
to the circled point
and unfold.

5



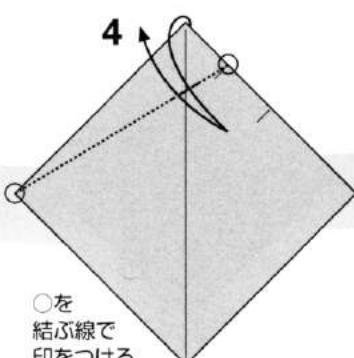
カドを○に
合わせて折り筋をつける
Fold the corner to the
circled point and unfold.

6

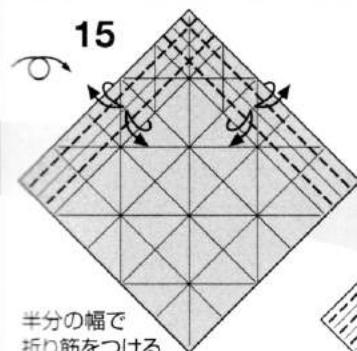


カドを
○に合わせて
折り筋をつける
Fold the corner to the
circled point and unfold.

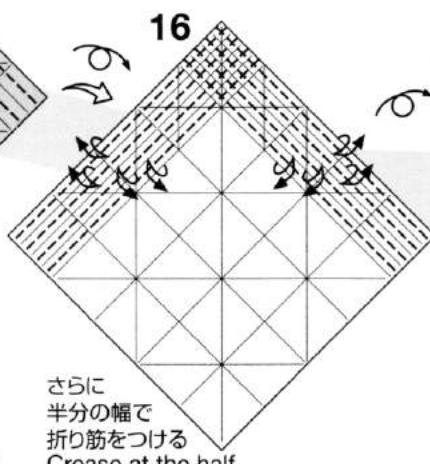
4



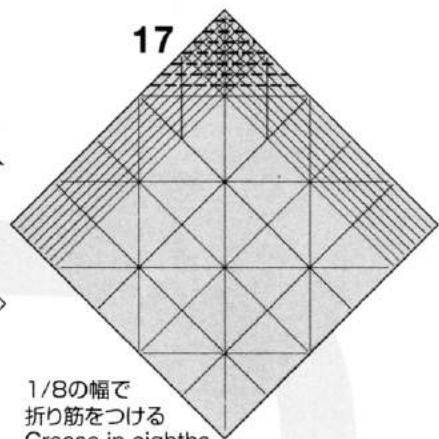
○を
結ぶ線で
印をつける
Mark at the intersection
of the line connecting
the circled points.



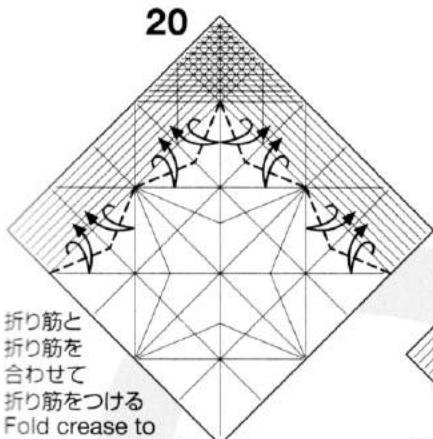
半分の幅で
折り筋をつける
Crease at the half of
the width.



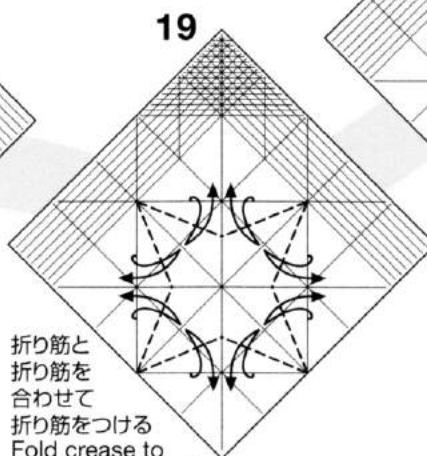
さらに
半分の幅で
折り筋をつける
Crease at the half
of the width.



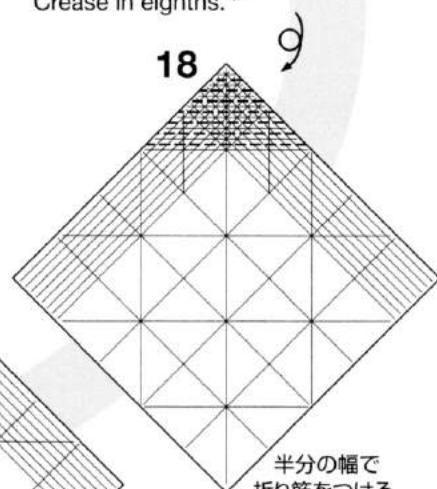
1/8の幅で
折り筋をつける
Crease in eighths.



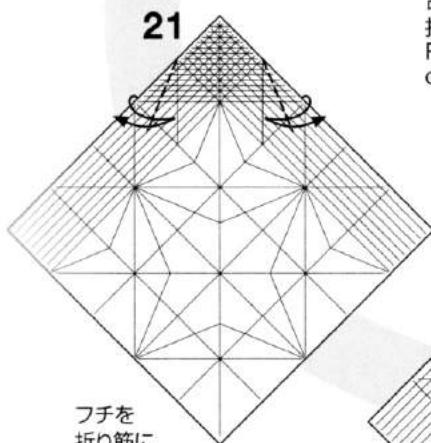
折り筋と
折り筋を
合わせて
折り筋をつける
Fold crease to
crease and unfold.



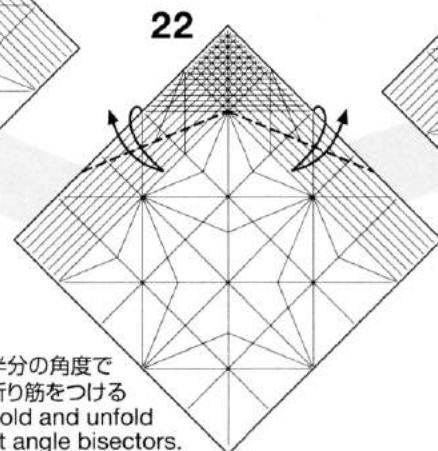
折り筋と
折り筋を
合わせて
折り筋をつける
Fold crease to
crease and unfold.



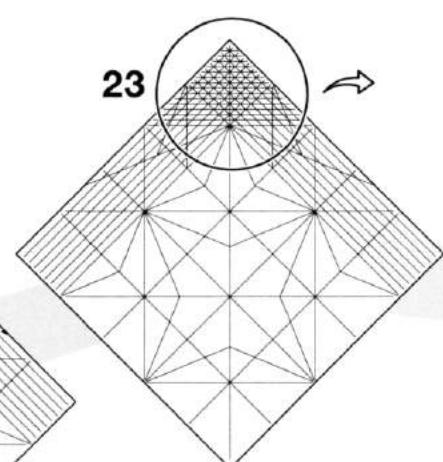
半分の幅で
折り筋をつける
Crease at the
half of the width.



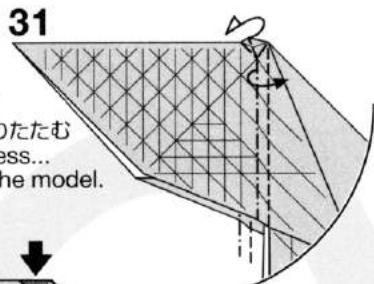
フチを
折り筋に
合わせて折り筋をつける
Fold edge to crease
and unfold.



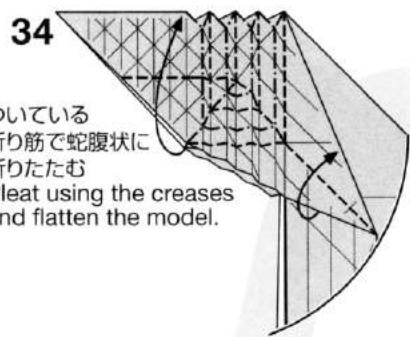
半分の角度で
折り筋をつける
Fold and unfold
at angle bisectors.



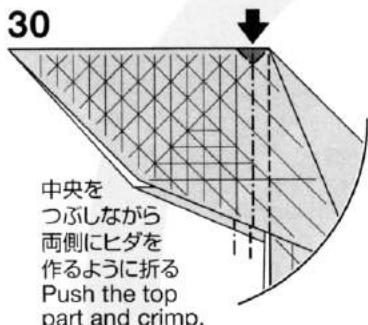
23



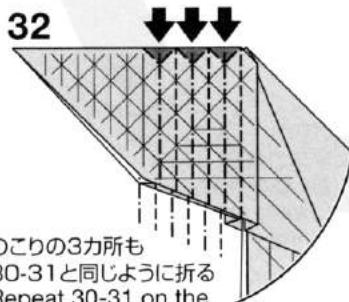
途中の図
平らに折りたたむ
In progress...
Flatten the model.



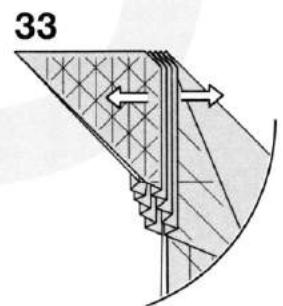
ついている
折り筋で蛇腹状に
折りたたむ
Pleat using the creases
and flatten the model.



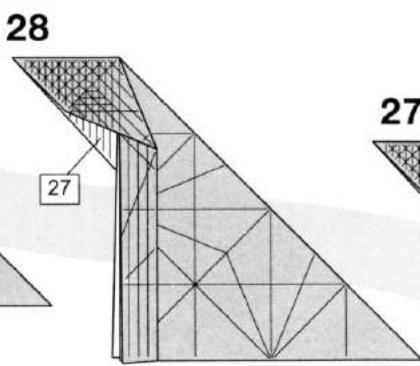
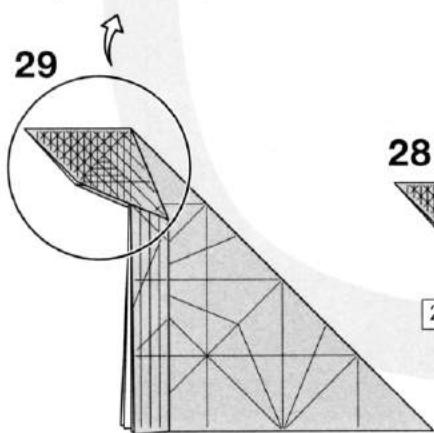
中央を
つぶしながら
両側にヒダを
作るように折る
Push the top
part and crimp.



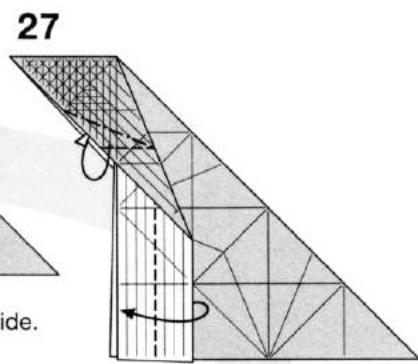
のこりの3カ所も
30-31と同じように折る
Repeat 30-31 on the
other pleats.



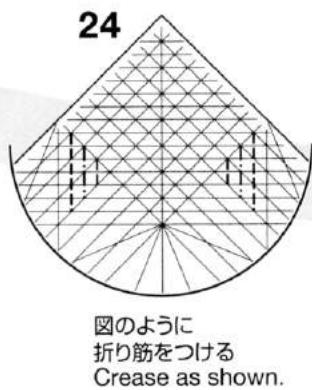
軽くひろげる
Open the layers.



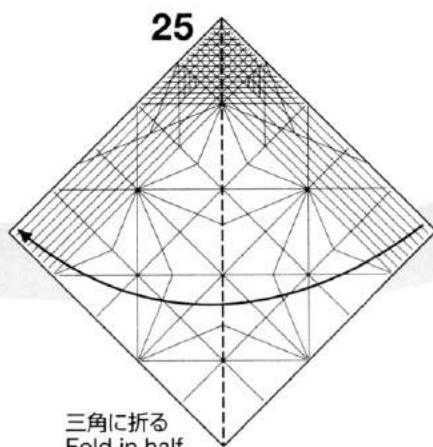
反対側も同じように折る
Repeat on the other side.



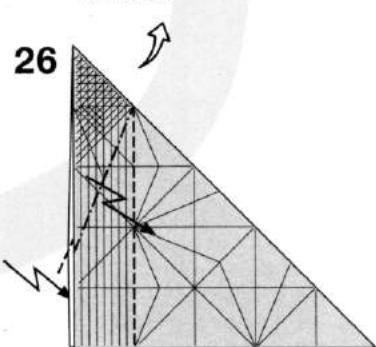
ついている折り筋を使って
チを折り込む
Swivel to inside using the
creases.



図のように
折り筋をつける
Crease as shown.

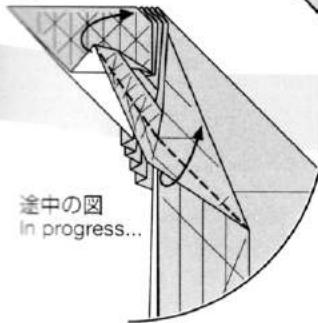


三角に折る
Fold in half.

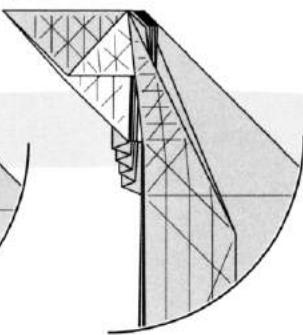


ついている折り筋で
両側で段折り
Crimp along the
creases.

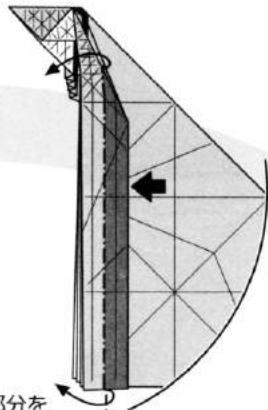
35



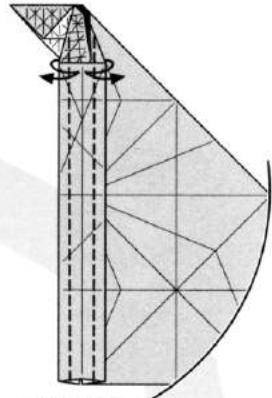
36



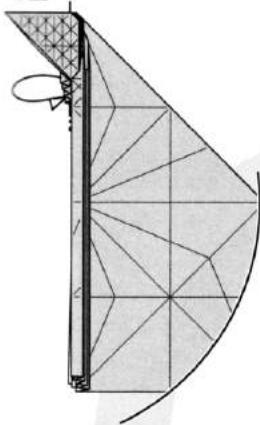
37



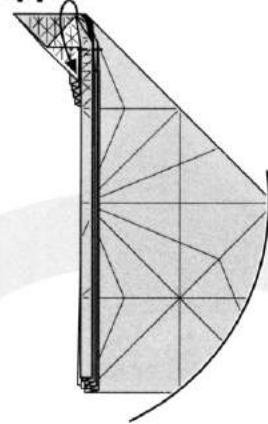
38



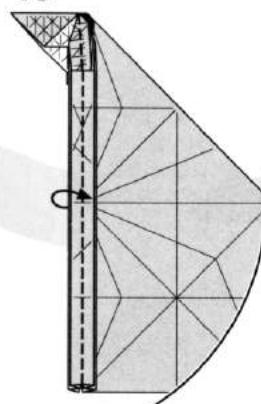
42



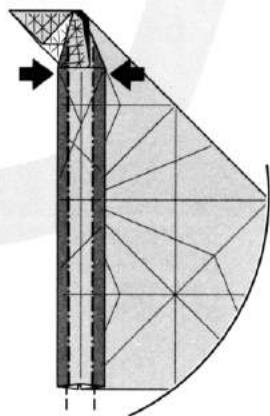
41



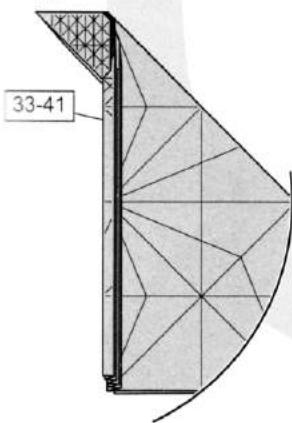
40



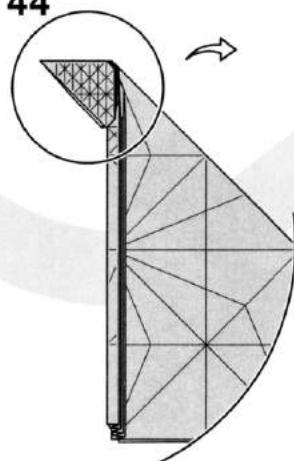
39



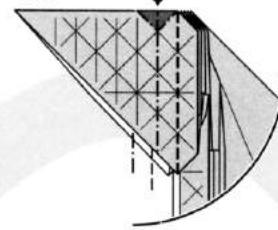
43



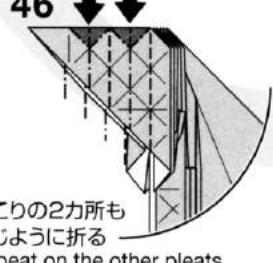
44



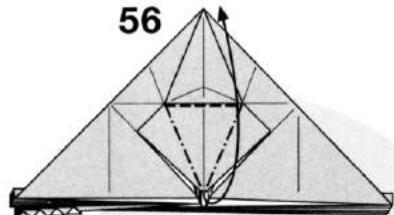
45



46

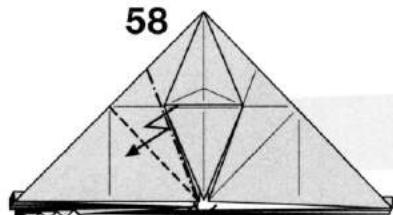


56



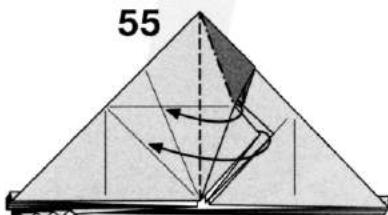
内側をひろげてつぶすように折る
(花弁折り)
Petal fold.

58



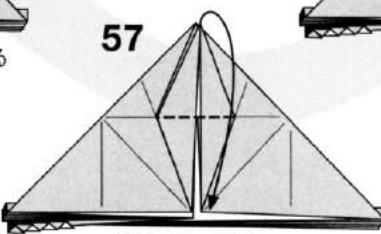
両側で段折り
Crimp inside.

55



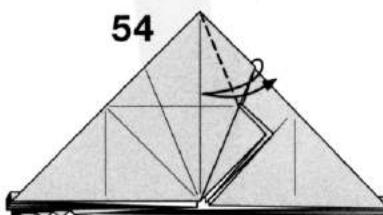
■の部分をひろげてつぶすように折る
Spread sink the darkened area.

57



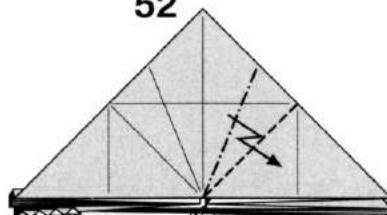
カドを下へ折る
Fold down the corner.

54



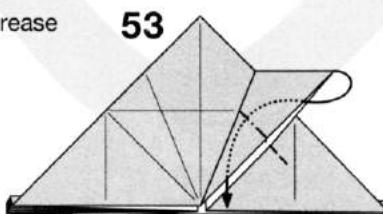
フチを折り筋に合わせて
折り筋をつける
Fold edge to crease
and unfold.

52



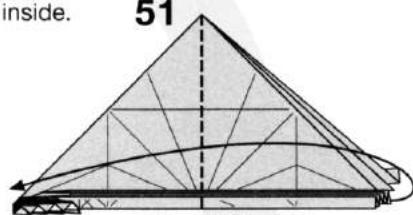
両側で段折り
Crimp inside.

53



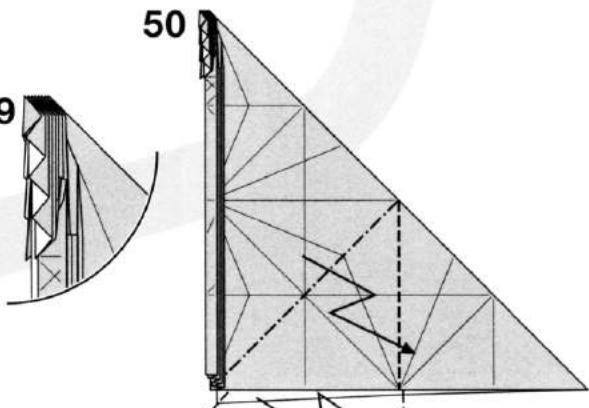
中わり折り
Inside reverse fold.

51



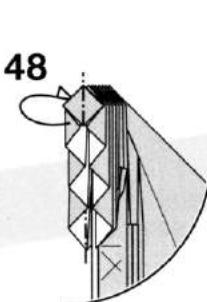
カドを反対側へ折る
Fold the corner
to the other side.

50



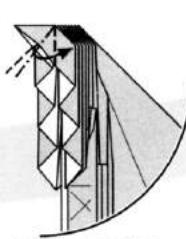
両側で段折り
Crimp.

48



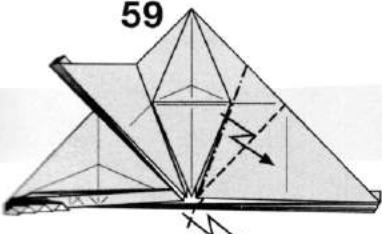
左側をまとめて後ろへ折る
Fold the layers to behind.

47

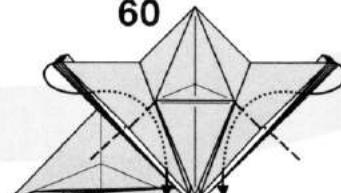


内側をひろげて
つぶすように折る
Open and squash.

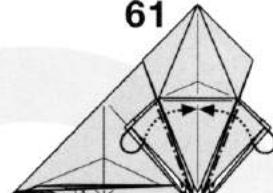
59

両側で段折り
Crimp inside.

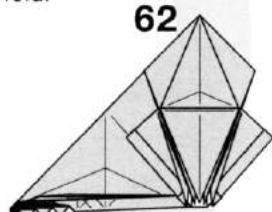
60

中わり折り
Inside reverse fold.

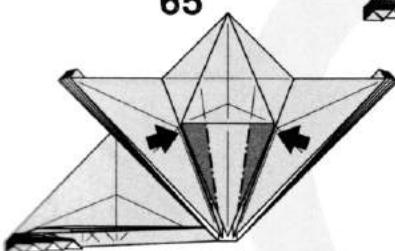
61

中わり折り
Inside reverse fold.

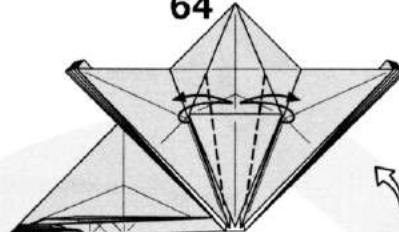
62

60の形に戻す
Unfold to 60.

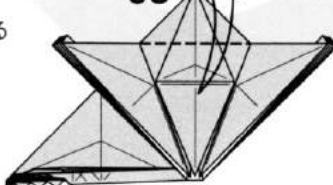
65

沈め折り(Open sink)
Open sink.

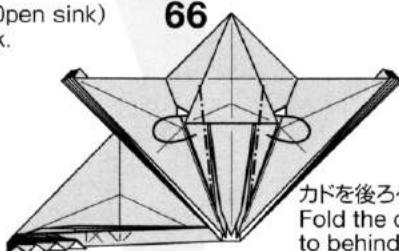
64

斜めに折り筋をつける
Fold and unfold.

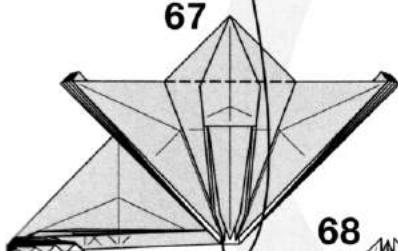
63

カドを結ぶ線で折り筋をつける
Fold and unfold along the line connecting the corners.

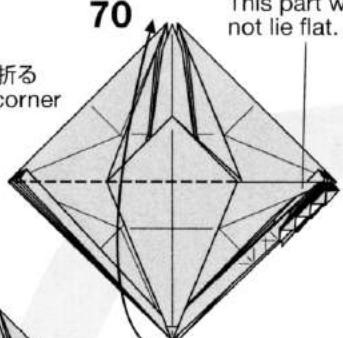
66

カドを後ろへ折る
Fold the corners to behind.

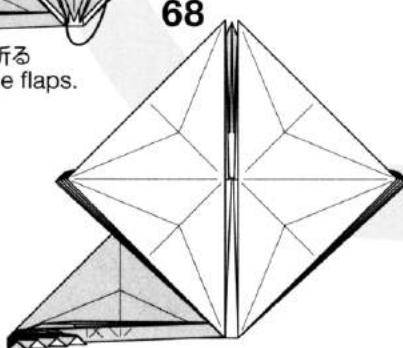
67

カドを上へ折る
Fold up the flaps.カドを上へ折る
Fold the corner up.

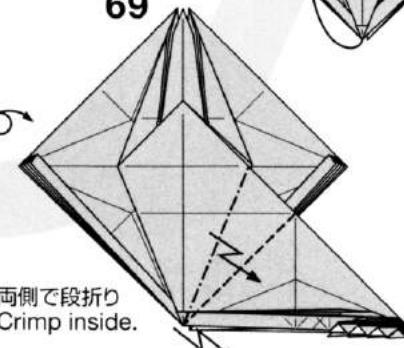
70

この部分は
平らにならない
This part will
not lie flat.

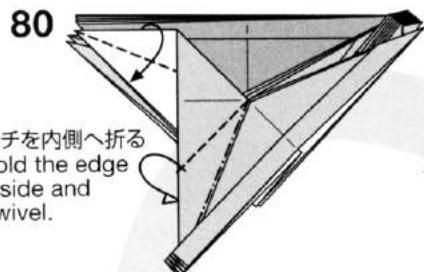
68



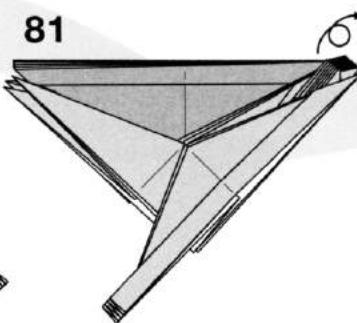
69

両側で段折り
Crimp inside.

ニワトリ

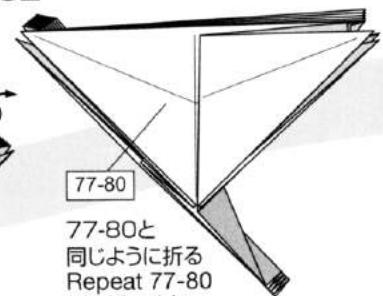


フチを内側へ折る
Fold the edge inside and swivel.

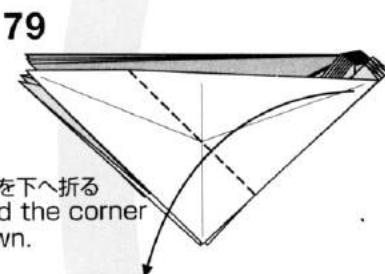


81

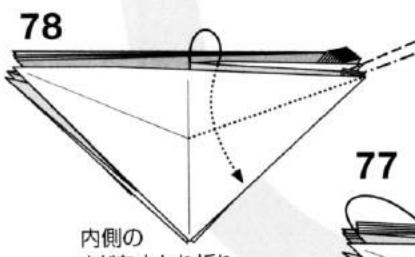
82



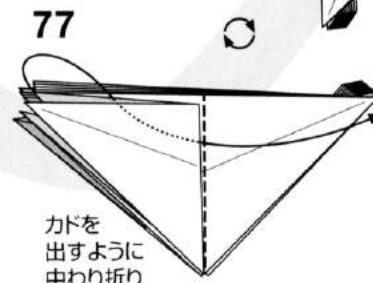
77-80と
同じように折る
Repeat 77-80
on this side.



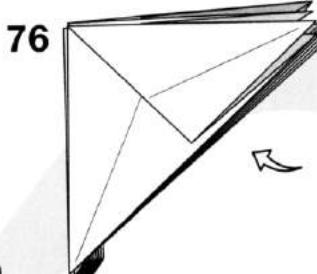
カドを下へ折る
Fold the corner down.



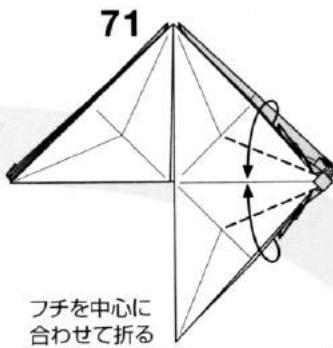
内側の
カドを中わり折り
Inside reverse fold
the hidden corner.



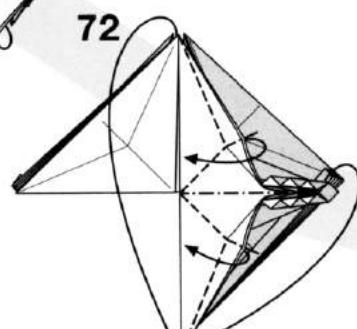
カドを
出すように
中わり折り
Inside reverse fold
the hidden corner.



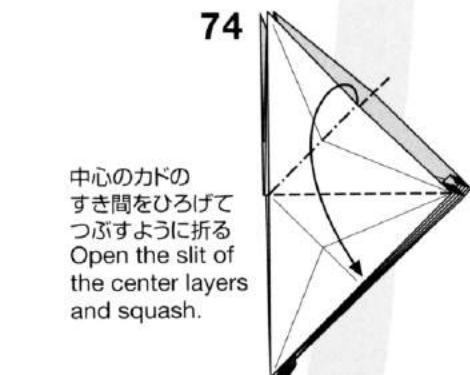
カドを後ろへ折る
Fold the corner to behind.



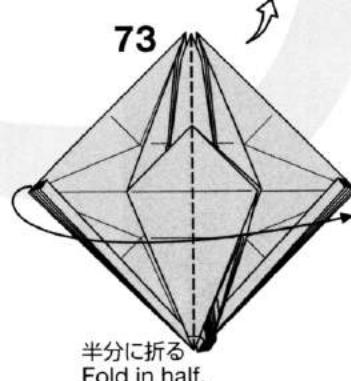
フチを中心
に合わせて折る
Fold the edges
to the center line.



ついている
折り筋で折りたたむ
Assemble using
the creases.

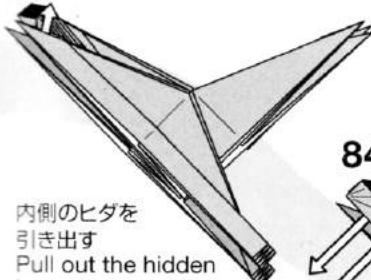


中心のカドの
すき間をひろげて
つぶすように折る
Open the slit of
the center layers
and squash.



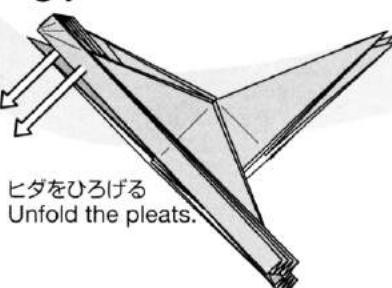
半分に折る
Fold in half.

83



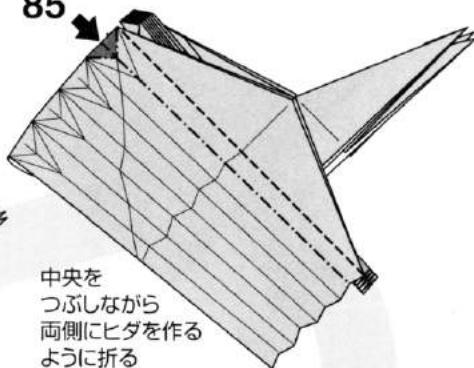
内側のヒダを
引き出す
Pull out the hidden
layers.

84



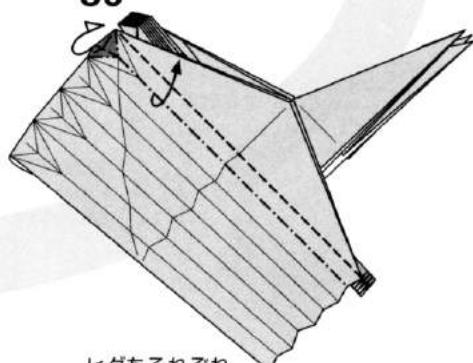
ヒダをひろげる
Unfold the pleats.

85



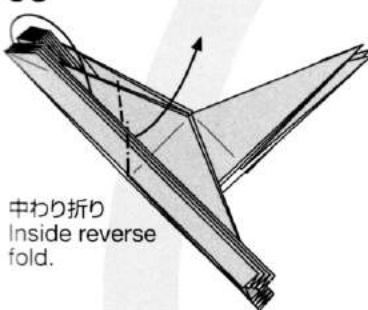
中央を
つぶしながら
両側にヒダを作る
ように折る
Push the top part and crimp.

86



ヒダをそれぞれ
右上へ折って折りたたむ
Fold the pleats up.

88



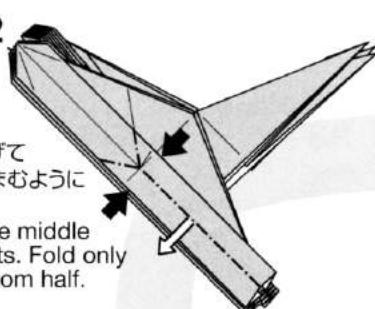
中わり折り
Inside reverse
fold.

89



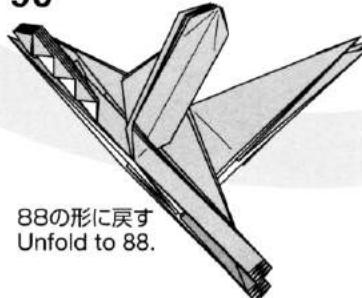
フチを1枚だけ
反対側へ折る
Fold only one flap
to the other side.

92



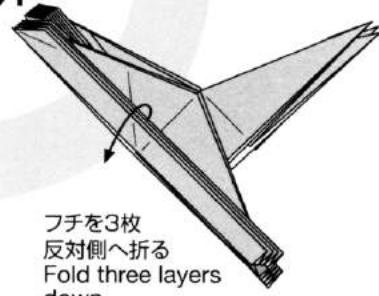
内側をひろげて
下半分をつまむように
折る
Pinch at the middle
of the pleats. Fold only
on the bottom half.

90



88の形に戻す
Unfold to 88.

91

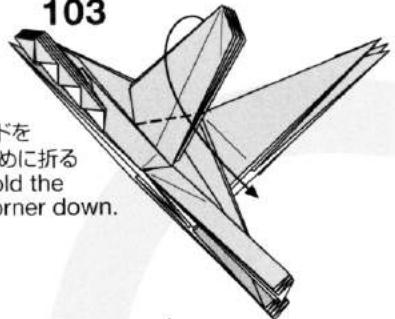


フチを3枚
反対側へ折る
Fold three layers
down.

ニワトリ

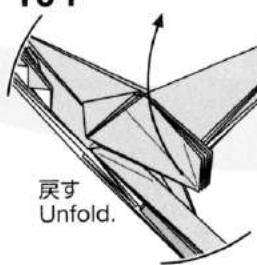
103

カドを
斜めに折る
Fold the
corner down.



104

戻す
Unfold.



105

ヒダを軽くひろげる
Open the layers.

98

うしろの
ヒダを引き出す
Pull out the layer behind.

102

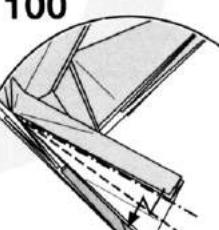
フチを
まとめて
反対側へ折る
Fold the layers
to the other side.

101

フチを
反対側へ折る
Fold the layers
to the other side.

斜めに段折り
Pleat along angle
bisectors.

99



100

斜めに段折り
Pleat along
angle bisectors.

97

フチのところで
折り筋をつける
Fold along the
edge and unfold.

96

カドを
○を結ぶ線で折る
Fold up along the
line connecting the
circled points.

93

ついている
折り筋を使って
平らに折りたたむ
Flatten with the existing
creases folding the top
flap down.

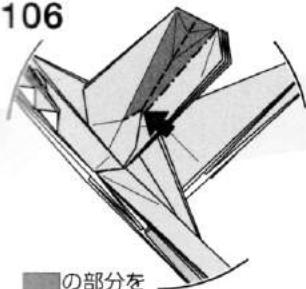
94

途中の図
In progress.

95

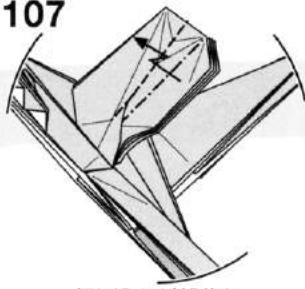
1枚を
反対側へ折る
Fold one layer
to the other side.

106



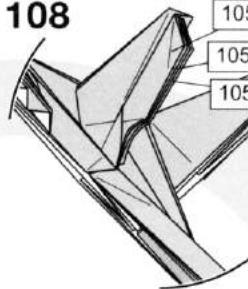
■の部分を
反対側のすき間へ押し込む
Push the layers
to the other side.

107



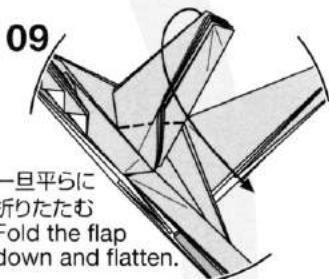
押し込んだ部分を
折りたたむ
Pleat.

108



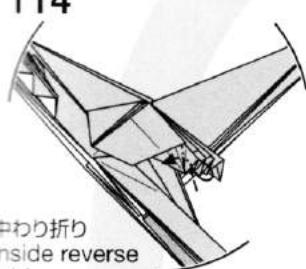
残りも105-107と
同じように折る
Repeat 105-107
on the other layers.

109



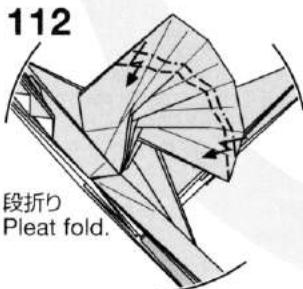
一旦平らに
折りたたむ
Fold the flap
down and flatten.

110



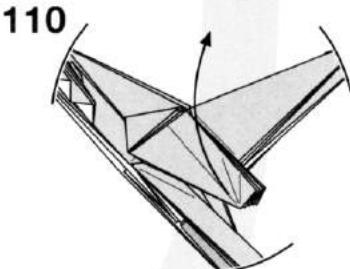
中わり折り
Inside reverse
fold.

111



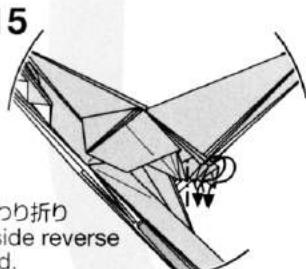
段折り
Pleat fold.

112



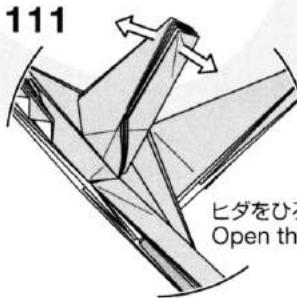
軽くひろげる
Raise the flap.

113



中わり折り
Inside reverse
fold.

114



ヒダをひろげる
Open the pleats.

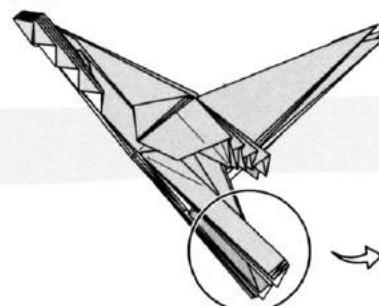
115



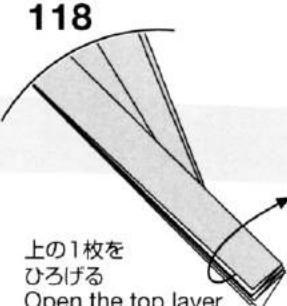
83-115

反対側も
83-115と
同じように折る
Repeat 83-115
behind.

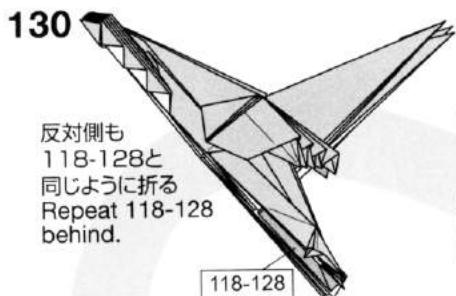
116



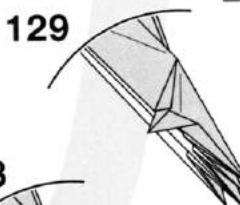
117



上の1枚を
ひろげる
Open the top layer.



反対側も
118-128と
同じように折る
Repeat 118-128
behind.



128

125-127
125-127

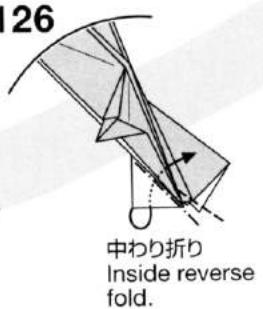
残りの3カ所も
125-127と
同じように折る
Repeat 125-127
on the other parts.

127



中わり折り
Inside reverse
fold.

126



中わり折り
Inside reverse
fold.

125



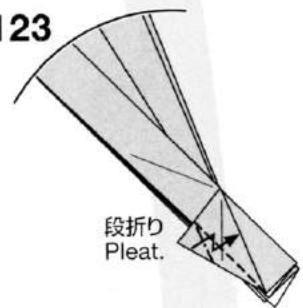
中わり折り
Inside reverse
fold.

124



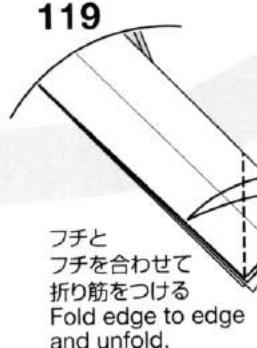
カドを
斜めに折る
Fold along the
line connecting
the corners.

123



段折り
Pleat.

120



フチと
フチを合わせて
折り筋をつける
Fold edge to edge
and unfold.

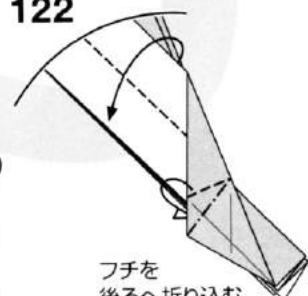
カドを
折り筋に
合わせて折る
Fold the corner
to the crease.

121



○と○を
合わせて折る
Fold so that the two
circled points will be
on top of each other.

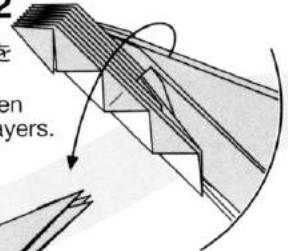
122



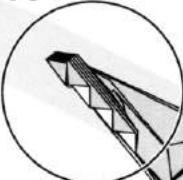
フチを
後ろへ折り込む
Fold to inside
and swivel.

132

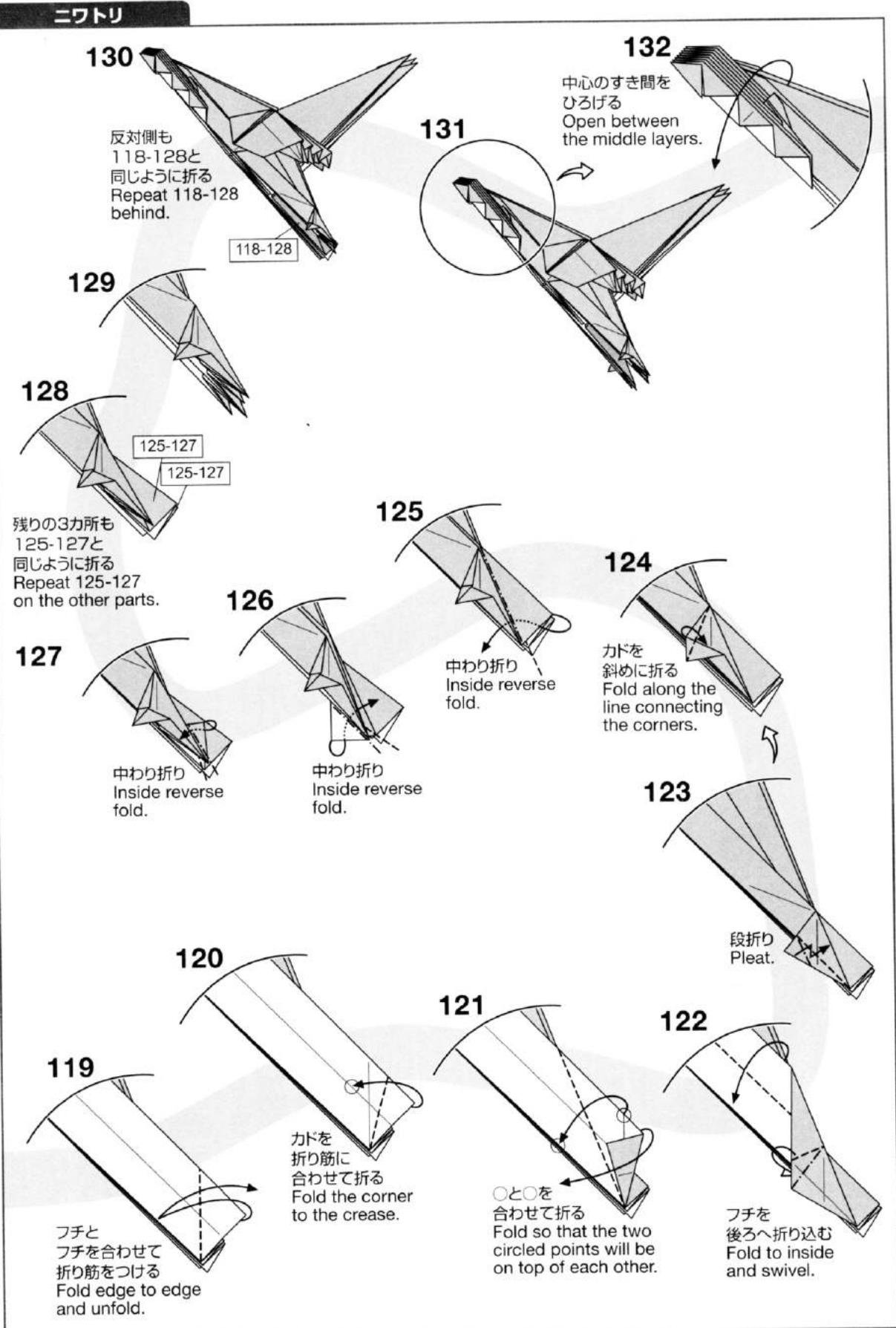
中心のすき間を
ひろげる
Open between
the middle layers.

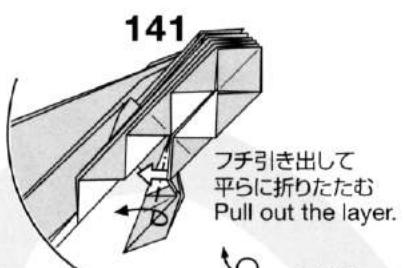
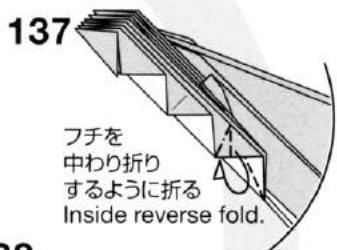
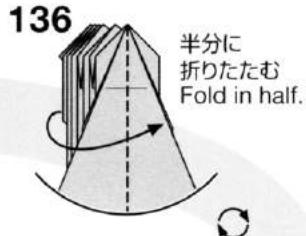
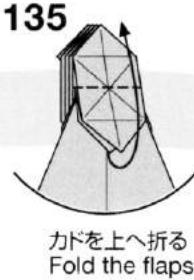
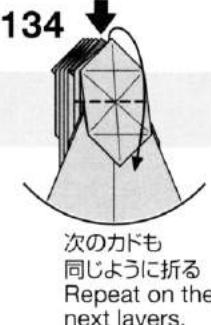
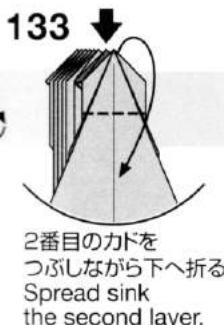


131

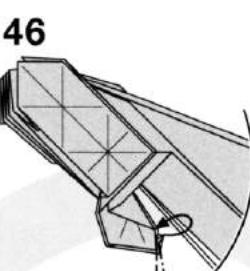
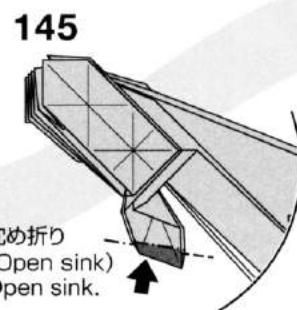
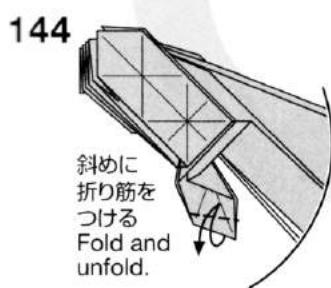
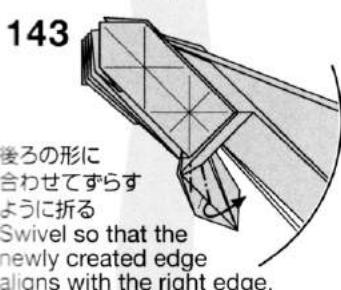
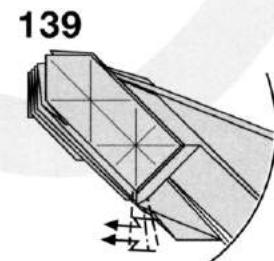
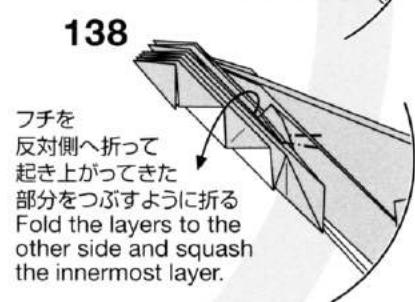
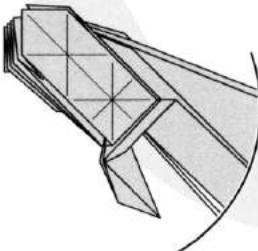
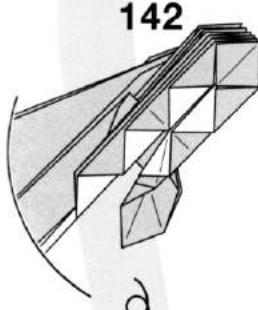
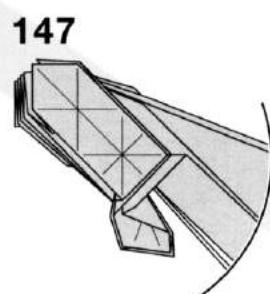


118-128

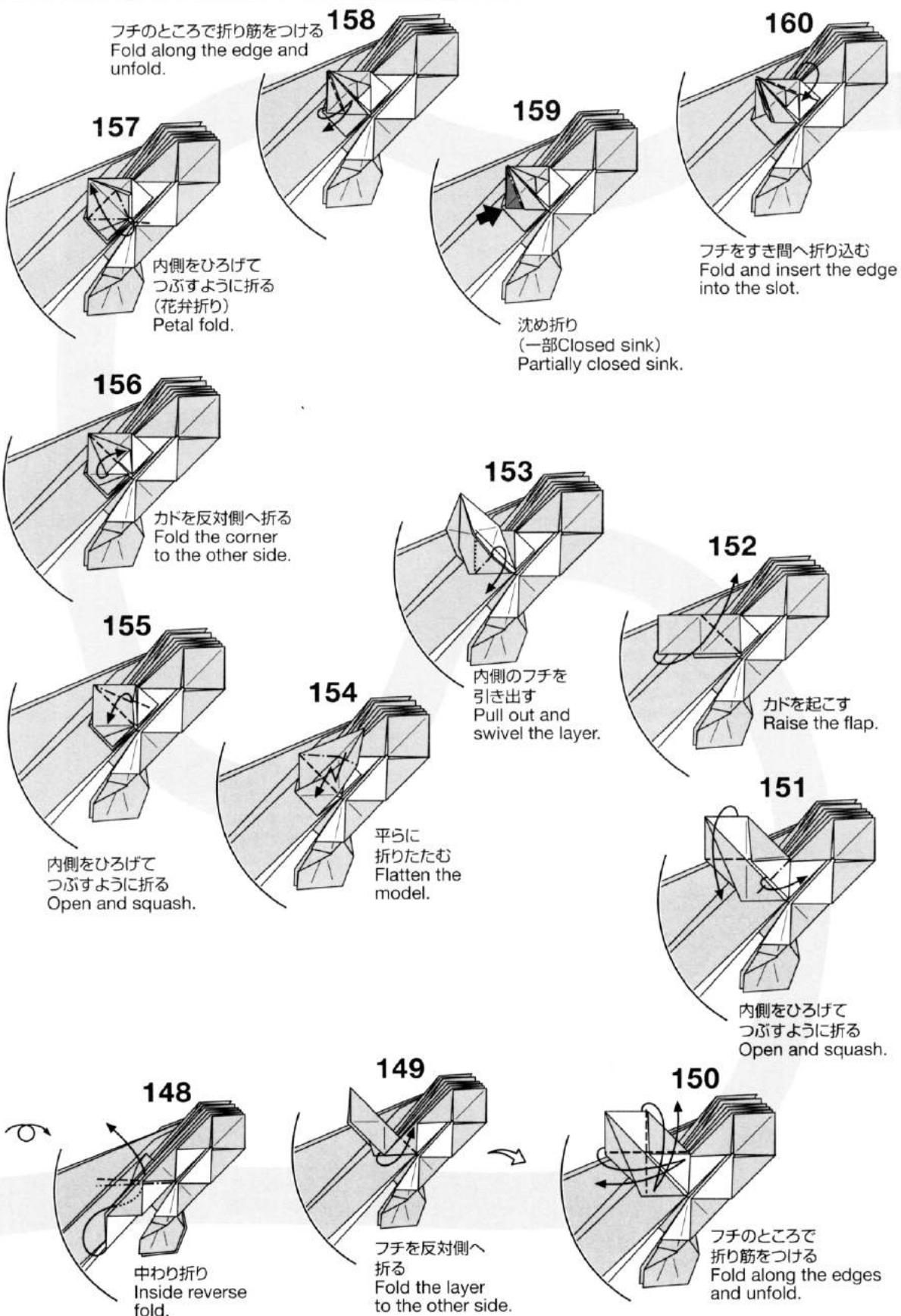


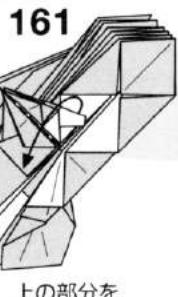


140

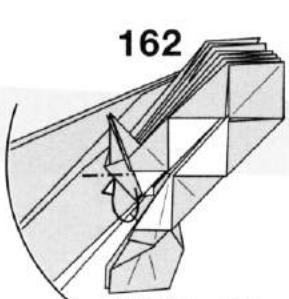
カドを
内側に折り込む
Fold the corner
to inside.

ニワトリ

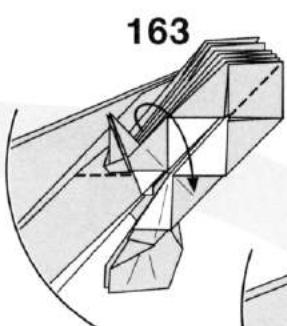




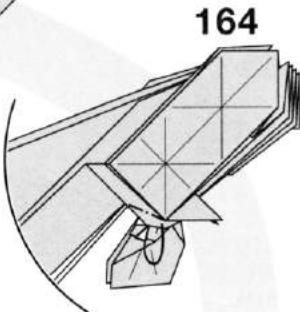
上の部分を
反対側へ折る
Fold the layers
down.



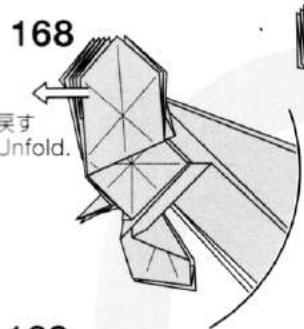
カドを後ろへ折る
Fold the corner
to behind.



内側をひろげて
つぶすように折る
Fold the layers
to the other side
and squash.

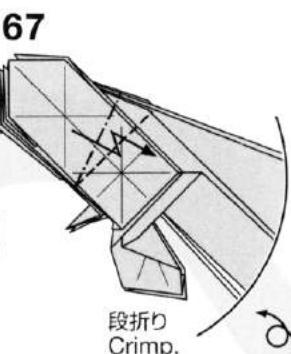


164



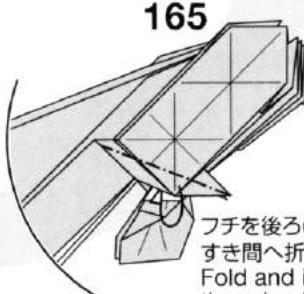
168

戻す
Unfold.



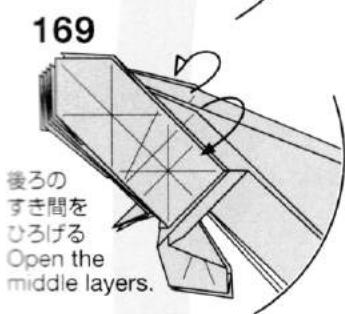
段折り
Crimp.

166



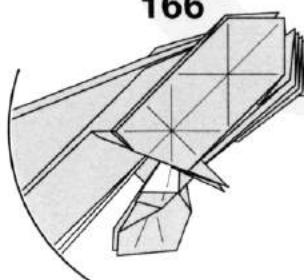
165

起き上がってきたフチを
かぶせ折りするようにして
後ろへ折る
Mountain fold the
raised layer.
This is a loose
outside reverse fold.

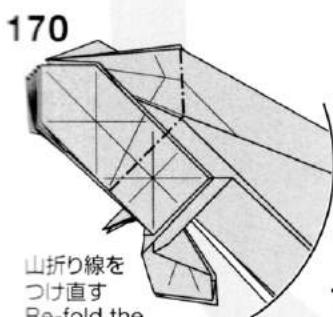


169

後ろの
すき間を
ひろげる
Open the
middle layers.

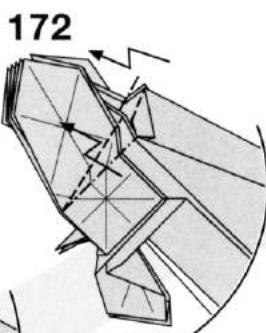


フチを後ろの
すき間へ折り込む
Fold and insert
the edge into
the slot behind.



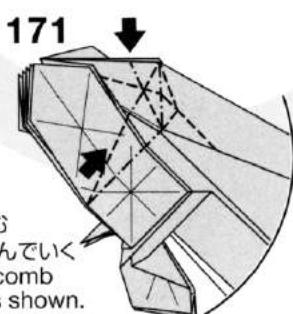
170

山折り線を
つけ直す
Re-fold the
mountain creases.



172

途中の図
平らに折りたたむ
In progress...
Flatten the model.

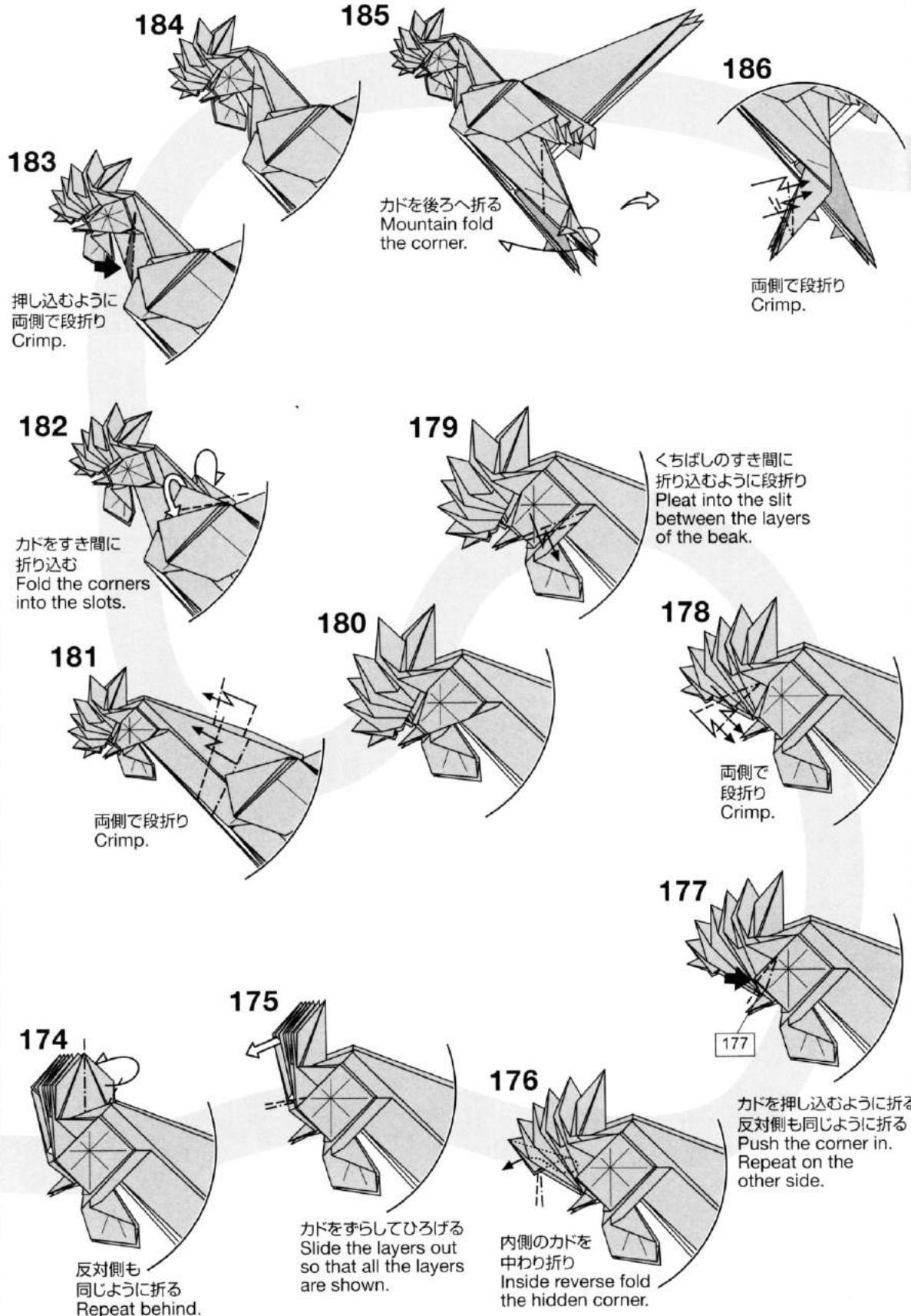


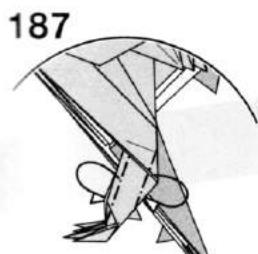
中心の部分をつまむ
ようにして折りたたんでいく
Pinch the cockscomb
and assemble as shown.

173

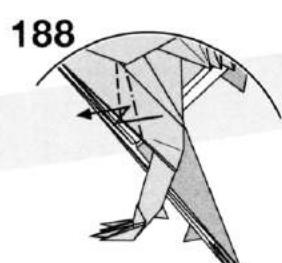
中心のすき間で
フチを反対側へ折る
Fold the layers
to the other side.

ニワトリ





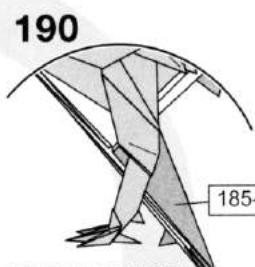
脚を細くするように
折る
Fold behind.



段折り
Pleat.

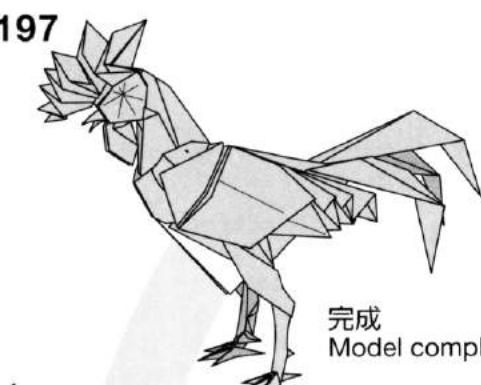


カドを後ろへ折る
Fold the corner
behind.

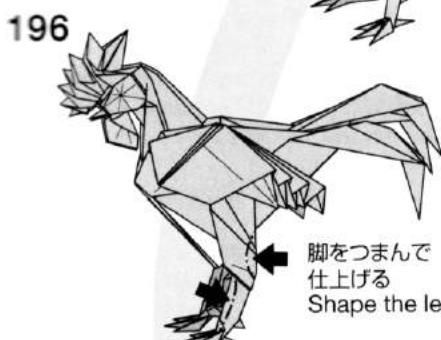


185-189

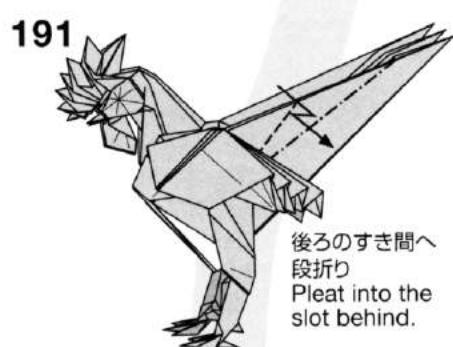
反対側も185-189と
同じように折る
Repeat 185-189
behind.



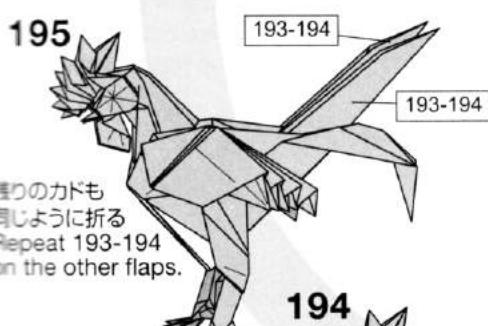
完成
Model completed.



脚をつまんで
仕上げる
Shape the legs.



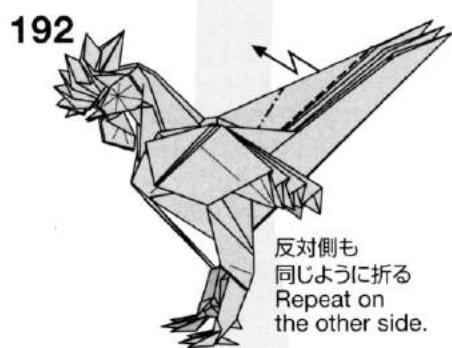
後ろのすき間へ
段折り
Pleat into the
slot behind.



残りのカドも
同じように折る
Repeat 193-194
on the other flaps.

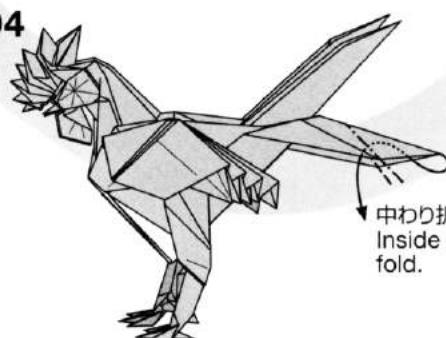
193-194

193-194



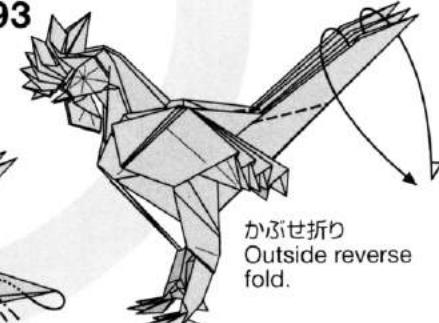
反対側も
同じように折る
Repeat on
the other side.

194



中わり折り
Inside reverse
fold.

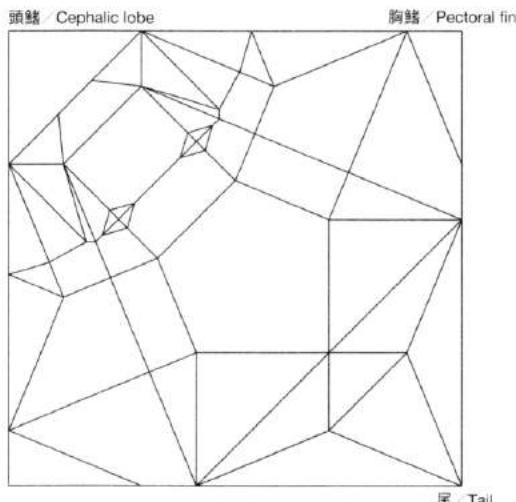
193



かぶせ折り
Outside reverse
fold.

マンタ

Manta Ray



この作品は、マンタの全体のシルエットと背びれへつながる形を、折り紙にしたときの完成形として連想したところから思いついたものです。創作を始めた段階でほぼ明確な仕上がりイメージが固まっていたため、着想から完成まで半日程度で創作しています。結果的にはほぼイメージ通りのものが完成しました。造形は、最初のアイディアを最大限活かすために、シンプルな仕上がりを目指しています。外見はともかく構造がシンプルといついいかどうかは疑問符がつきますが、ほぼぐらい折りなしでまとまり、個人的には満足のいく仕上がりとなりました。

構造の特徴としては、基本的には22.5度系ですが、頭部に変則的な角度が混ざっています。こういったケースで使用する角度を制限するかどうかは好みの分かれるところです。細かい調整を行えば22.5度のみでもそれなりの形にはできると思うのですが、たまたま最初に見つけた形が気に入ったので今回はそのまま採用となりました。

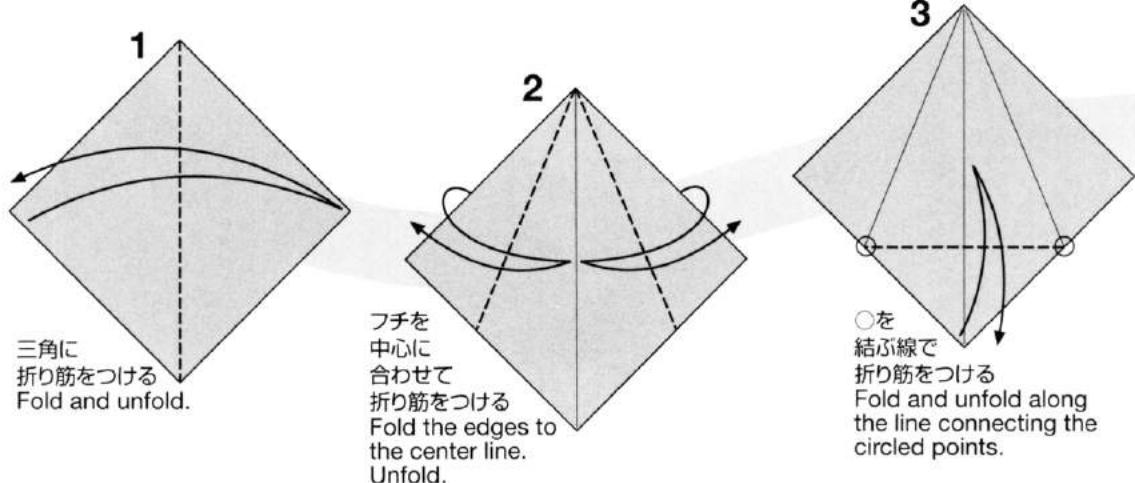
また、講習等のため工程を整理した結果、ずらしたり引き出したりするような手順の多い、面白い工程になっています。正確に折り筋をつけておけば、リズムよく折り進めることができるでしょう。

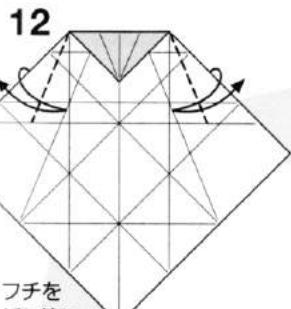
I designed this manta model by observing the shape of a manta's body heading towards the dorsal fin, from which I imagined the shape of the completed model directly. As the completed model was in my mind from the beginning, I succeeded in designing the model in half days. The actual model and my imaginary model were almost identical. I tried to make it simple, to follow my initial image of the model.

Though the structure is not that simple in the end, I am satisfied with this model because most steps are with clear references.

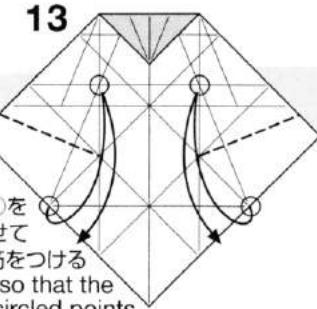
This model uses 22.5 degree patterns basically, with twists on the head. Of course, it is always possible to bind the model to 22.5 degree patterns with some adjustments, but I used my original ideas because the shape of the head with the initial idea was very good.

Folding steps are also interesting with some swiveling and unwrapping. Crease precisely, and you will be able to finish the model up rhythmically.

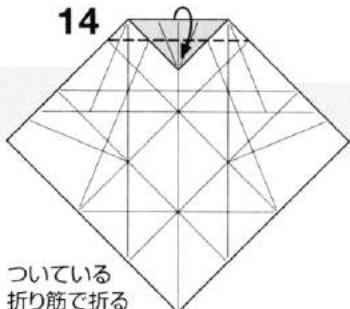




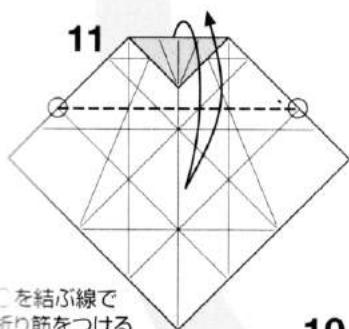
フチを
折り筋に
合わせて折り筋をつける
Fold the edges to the
vertical creases and unfold.



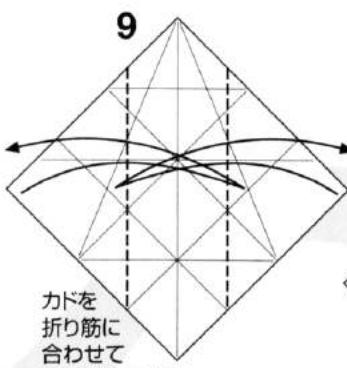
○と○を
合わせて
折り筋をつける
Fold so that the
two circled points
will be on top of each other.
Unfold.



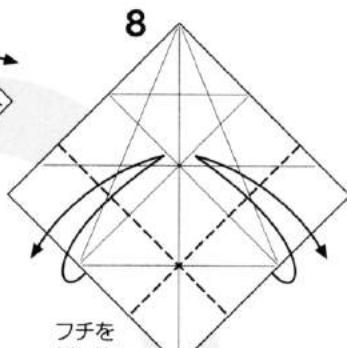
ついている
折り筋で折る
Fold down along
the existing crease.



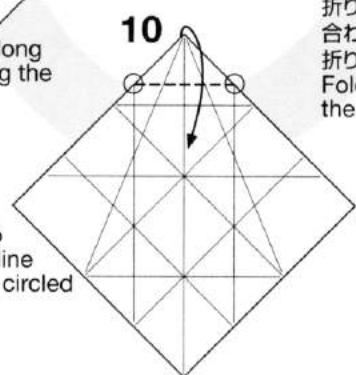
○を結ぶ線で
折り筋をつける
Fold and unfold along
the line connecting the
circled points.



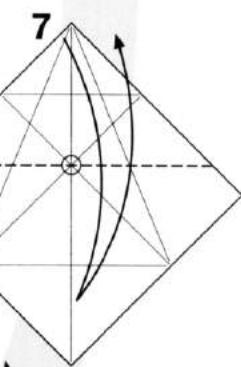
カドを
折り筋に
合わせて
折り筋をつける
Fold the corners to
the creases and unfold.



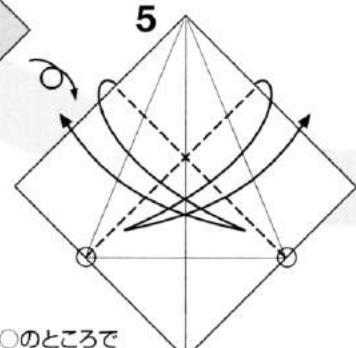
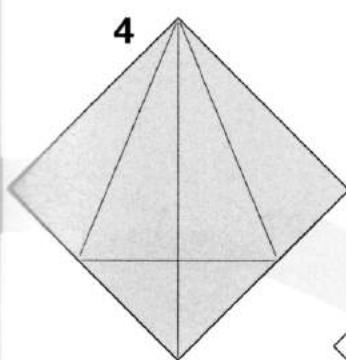
フチを
折り筋に
合わせて折り筋をつける
Fold the edges to the
creases and unfold.



○を結ぶ線で折る
Fold along the line
connecting the circled
points.



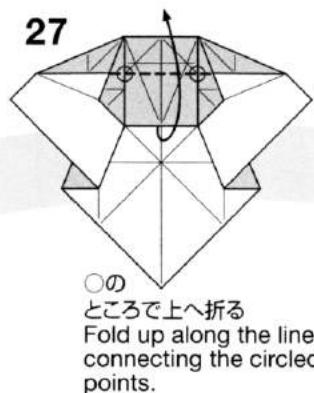
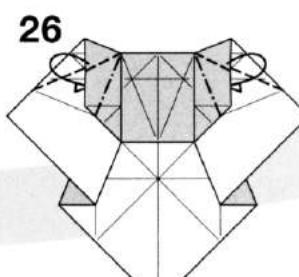
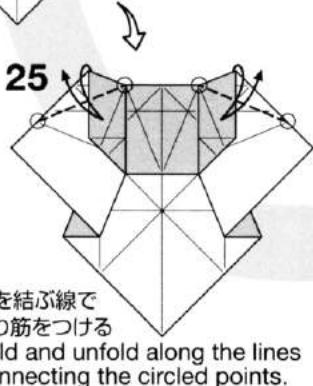
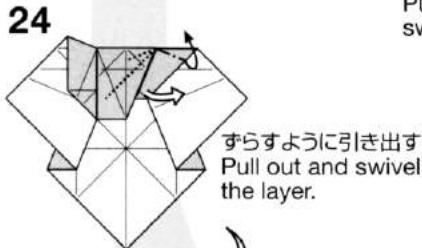
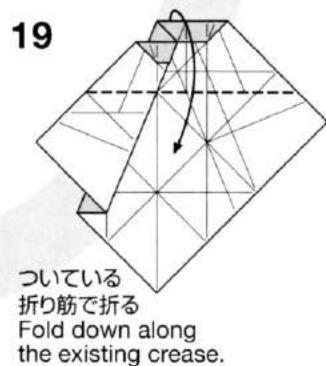
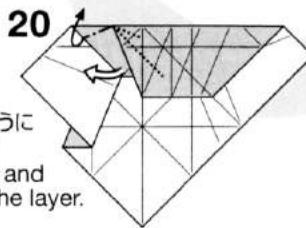
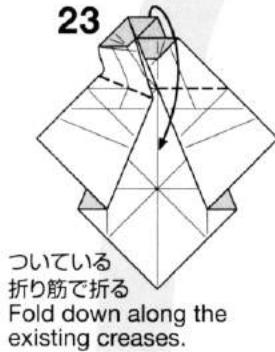
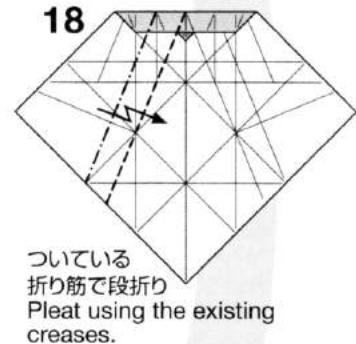
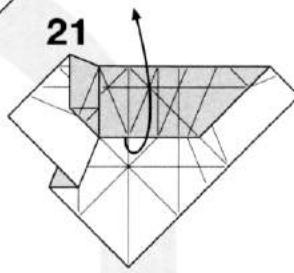
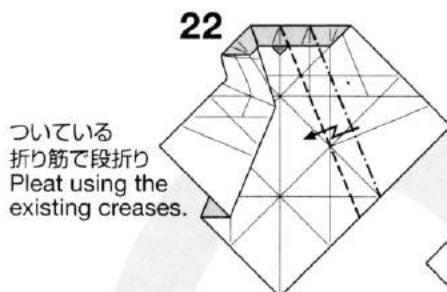
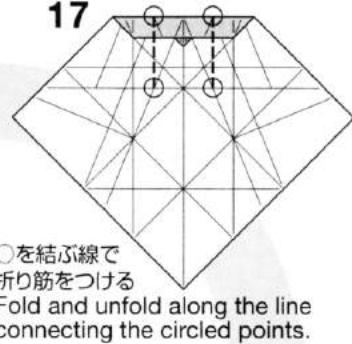
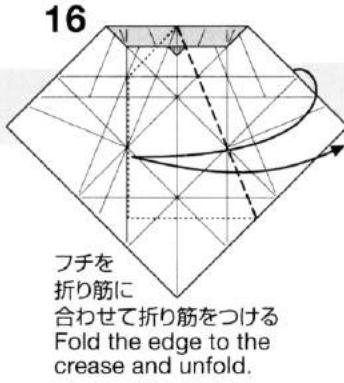
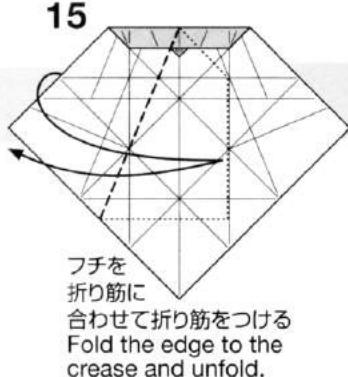
○のところで
折り筋をつける
Fold at the circled
point and unfold.

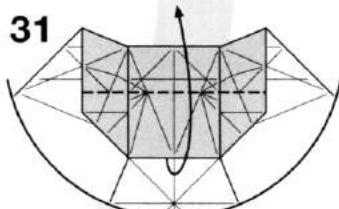
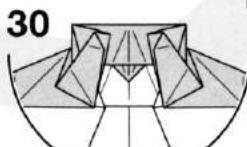
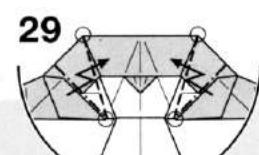
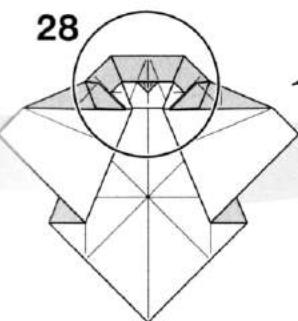
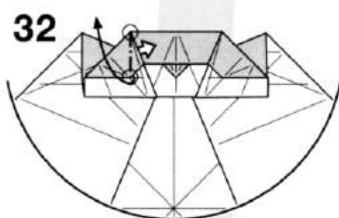
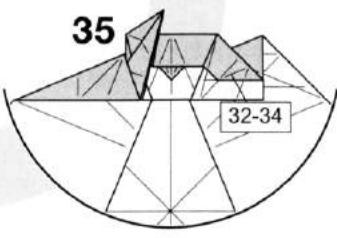
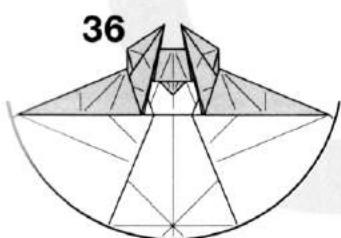
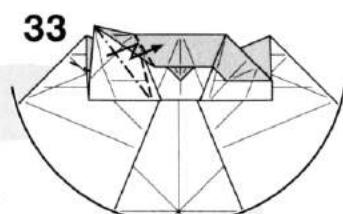
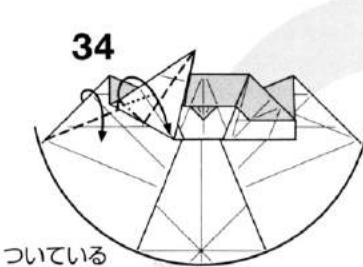
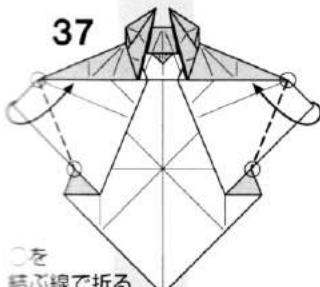
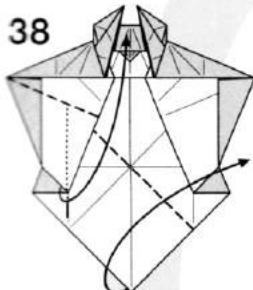
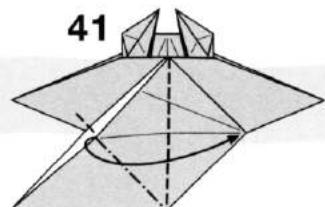
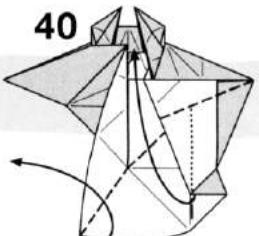
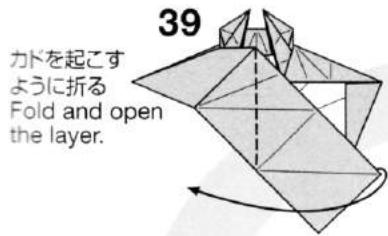


○のところで
折り筋をつける
Fold at the circled points
and unfold.

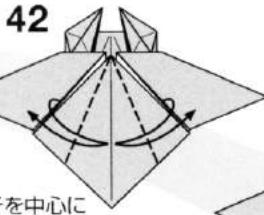


○を結ぶ線で
折り筋をつける
Fold and unfold along the line
connecting the circled points.

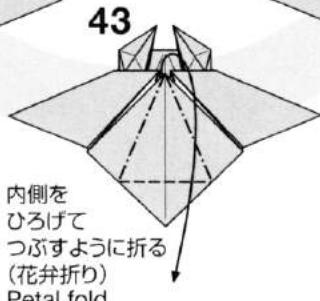




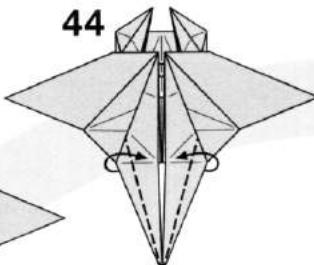
マンタ



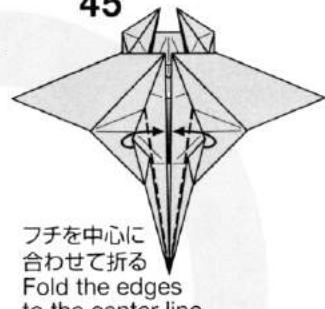
フチを中心に
合わせて折り筋を
つける
Fold the edges
to the center line.
Unfold.



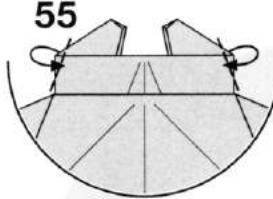
内側を
ひろげて
つぶすように折る
(花弁折り)
Petal fold.



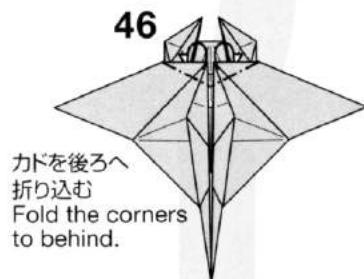
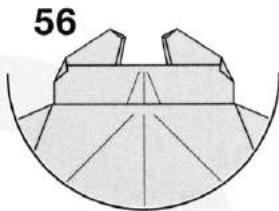
1/3の角度で折る
Fold at 1/3 of the
angles.



フチを中心に
合わせて折る
Fold the edges
to the center line.



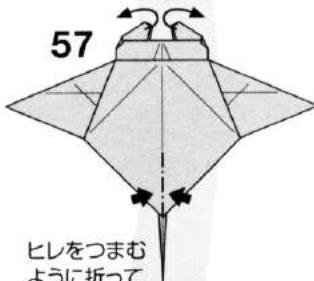
カドを少し折る
Fold the tips.



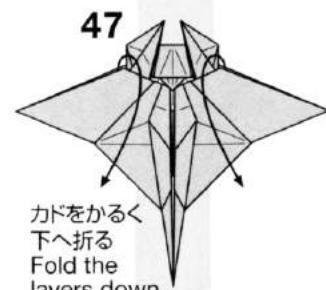
カドを後ろへ
折り込む
Fold the corners
to behind.



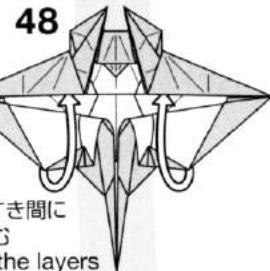
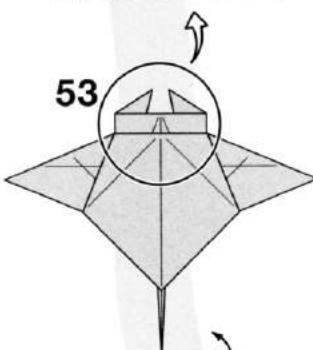
カドを内側に折る
反対側も同じように折る
Fold the corner inside.
Repeat on the other side.



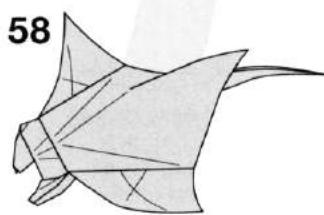
ヒレをつまむ
ように折って
全体の形を整える
Pinch and shape
the model.



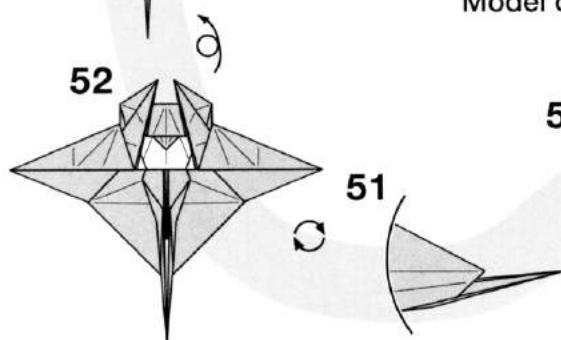
カドをかるく
下へ折る
Fold the
layers down.



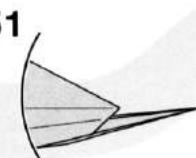
カドをすき間に
差し込む
Insert the layers
into the pocket.



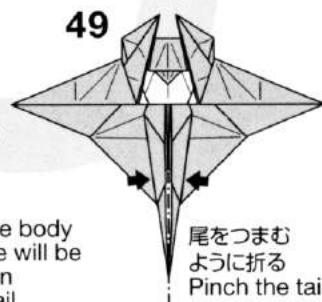
完成
Model completed.



50
すき間をひろげて
つまむように折る
Pinch the end of the body
so that some space will be
maintained between
the body and the tail.

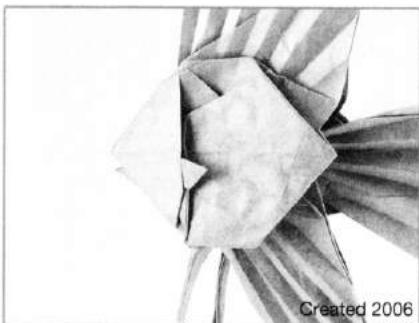


59
尾をつまむ
ように折る
Pinch the tail.



エンゼルフィッシュ

Angelfish

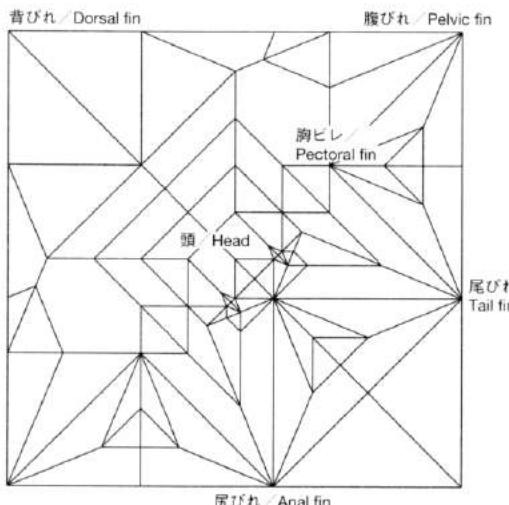


Created 2006

魚のように、題材の対称軸にたくさんのカドが必要な作品の場合、非対称の構造や配置を使うことで、必要なカドを効率よく折り出すことができます。たとえば左右のカドをそれぞれ上下に折って尾びれをつくるという手法は、多くの魚作品で行われています。それ以外にも尻びれや背びれなどにも、非対称の配置がよく使われます。

この作品でも、非対称のカド配置を採用しています。エンゼルフィッシュは背びれ・尻びれ・尾びれという、非常に大きなカドが必要となります。またヒレを分厚くならないように折り出すには、カドを紙の辺に配置する必要があります。対称軸上に3つのカドを辺に配置するのは不可能なので、必然的に非対称の配置を使う必要があるのです。このような場合、尾びれを左右から折り出すのが定石なのですが、今回は長い腹ビレも折り出したいので、カドの配置が上手く收まりません。最終的に、展開図自体は基本的に対称なものを探用、左右に折り出した大きなカドの片方を尾びれ、もう片方を腹側に下ろして尻びれにしています。

非対称の構造は上手く使えばとても便利なのですが、扱いづらい面も多いのも事実です。今回の作品でも構造は対称、カドの配置のみ非対称という方法を採用しています。また、出来上がりの形が非対称であっても、構造は対称的な方が良いというケースもあります。いろいろなパターンを比較検討し、最適な方法を選ぶと良いでしょう。

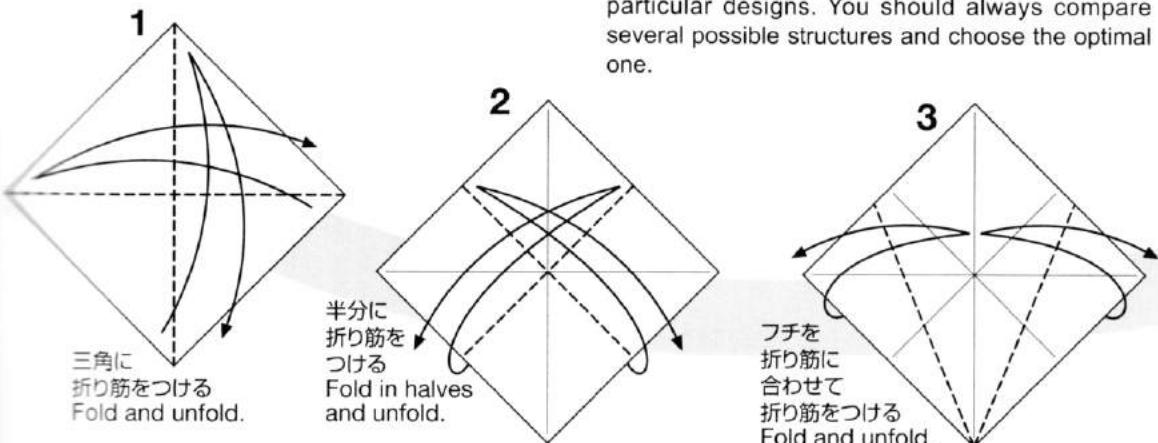


When I need many flaps on the central axis of the motif as is the case for fishes, I often adopt an asymmetrical structure for effective distribution of necessary flaps. In so many fish models, there are steps of folding out left and right flaps up and down for the tail fin. In the same way, asymmetrical structures are often used for a dorsal fin and an anal fin.

The distribution of flaps in this model is also asymmetrical. For an angelfish, I need flaps for three types of broad fins, namely dorsal, anal and tail fins. I also need to distribute the flaps for these fins on the edges of the sheet, not to make flaps too thick to fold. It is impossible to distribute three flaps on the axis, so I naturally need an asymmetrical structure.

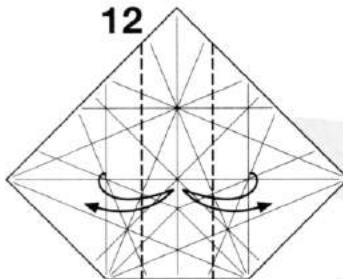
The tail fin can be folded out from the two sides of the sheet, but I also need anal fins as well. I finally adopted a symmetrical structure, and used the flap on one side for the tail fin and folded down the flap on another side for the anal fin.

It generally is hard to handle an asymmetrical structure even though it is very convenient if you have enough skills. For this model, I chose a symmetrical structure with asymmetrical distribution of flaps. Such irregular patterns may turn out to be optimal for some particular designs. You should always compare several possible structures and choose the optimal one.



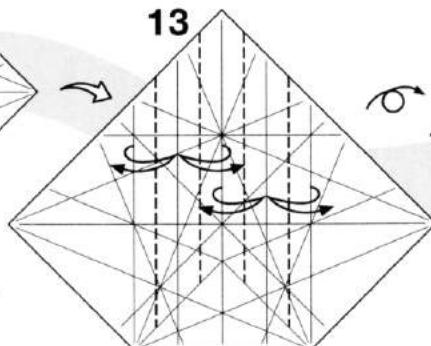
エンゼルフィッシュ

12



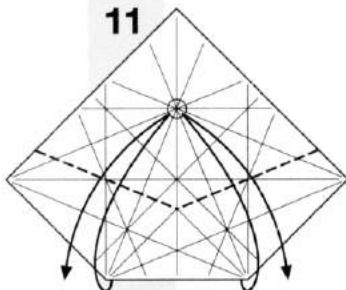
折り筋と折り筋を合わせて
折り筋をつける
Fold in the middle of the creases and unfold.

13



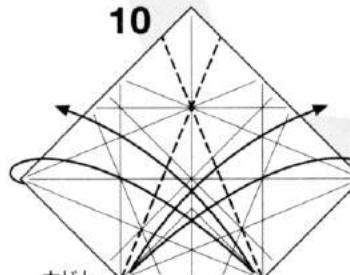
さらに半分の幅で
折り筋をつける
Fold in the middle of the creases and unfold.

11



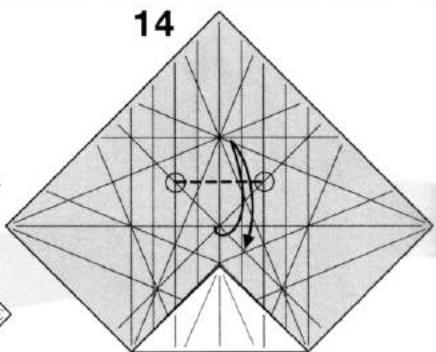
カドを折り筋に合わせて
折り筋をつける
Fold the corners to the circled point and unfold.

10



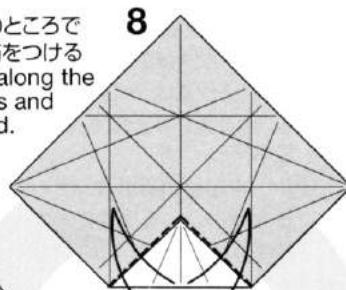
カドと
カドを合わせて折り筋をつける
Fold corner to corner and unfold.

14



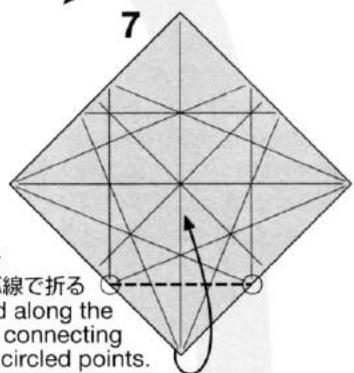
折り筋と折り筋を合わせて
折り筋をつける
Crease along the line connecting the circled points.

8



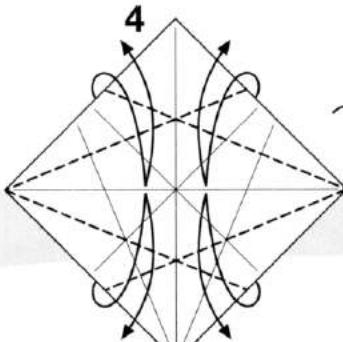
フチのところで
折り筋をつける
Fold along the edges and unfold.

7



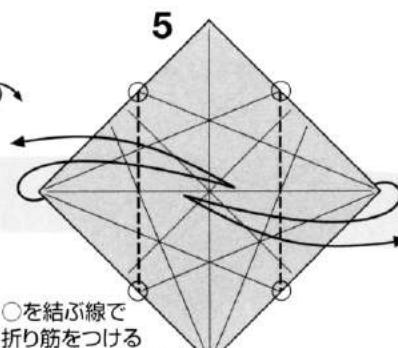
○を
結ぶ線で折る
Fold along the line connecting the circled points.

4



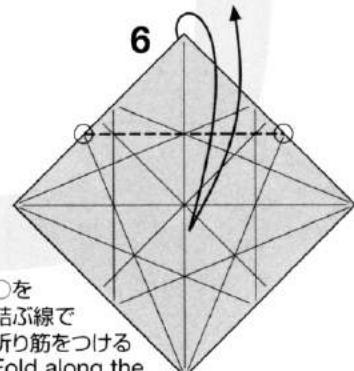
フチを折り筋に合わせて
折り筋をつける
Fold and unfold.

5

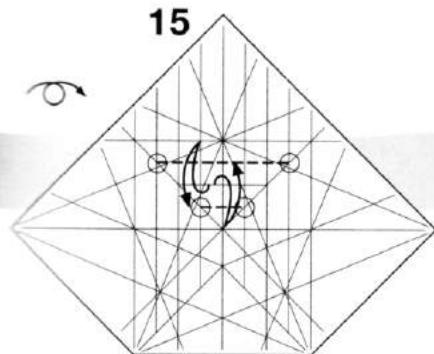


○を結ぶ線で
折り筋をつける
Fold and unfold along the lines connecting the circled points.

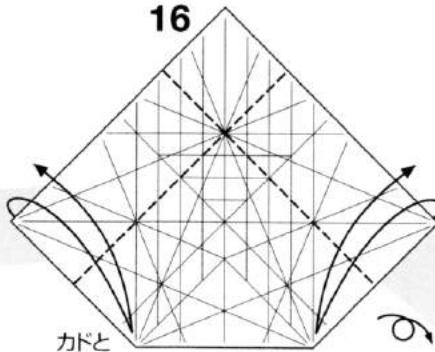
6



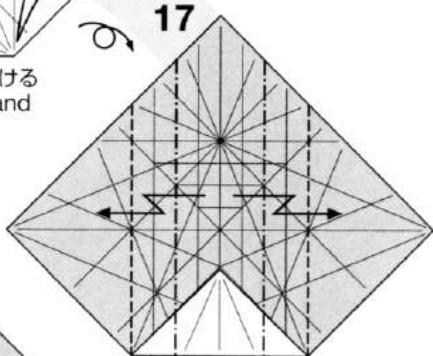
○を
結ぶ線で
折り筋をつける
Fold along the line connecting the circled points and unfold.



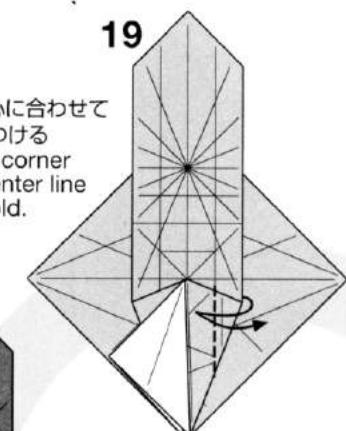
さらに半分の幅で折り筋をつける
Crease along the line connecting the circled points.



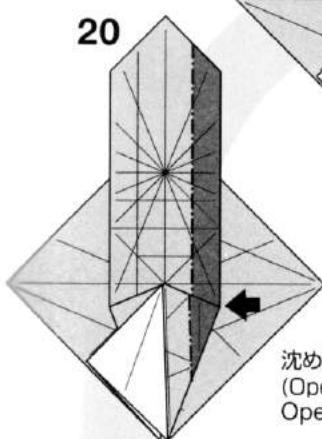
カドと
カドを合わせて折り筋をつける
Fold corner to corner and unfold.



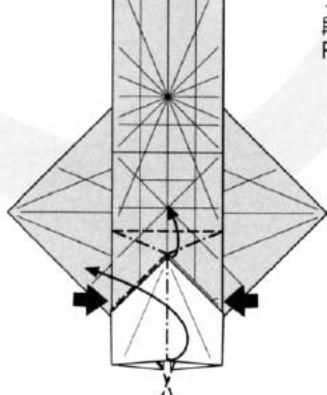
カドを中心に行わせて
折り筋をつける
Fold the corner to the center line and unfold.



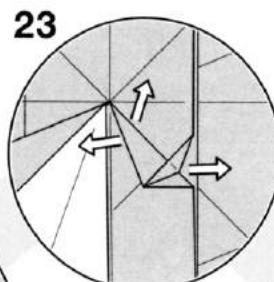
ついている折り筋で
段折り
Pleat.



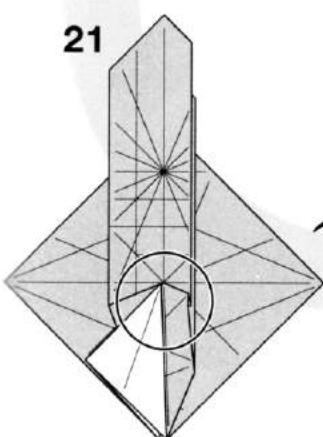
沈め折り
(Open sink)
Open sink.



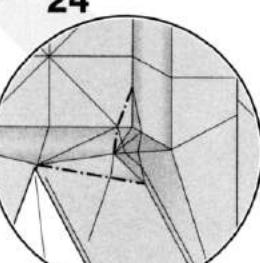
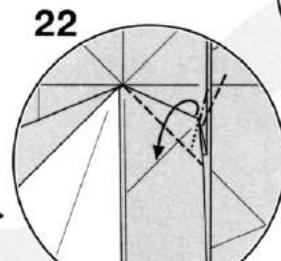
ついている折り筋を使って
中心線をつまむようにして
折りたたむ
Push the sides and fold at the center line.
The white layers will stand out, so lay them down.



折った部分を
ひろげる
Open the layers.



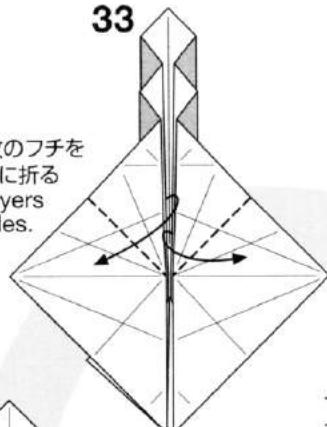
カドを斜めに折って
起き上がってきた部分を
つぶすように折る
Fold the corner and squash.



図のように折り筋をつけ直す
Change some crease lines into mountain folds.

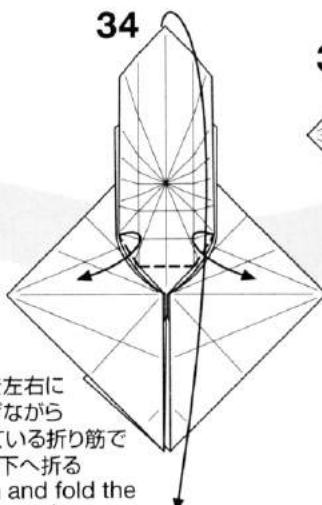
33

それぞれ2枚のフチをひろげるように折る
Fold two layers on both sides.



34

フチを左右にひろげながらついている折り筋でカドを下へ折る
Open and fold the top layer down.



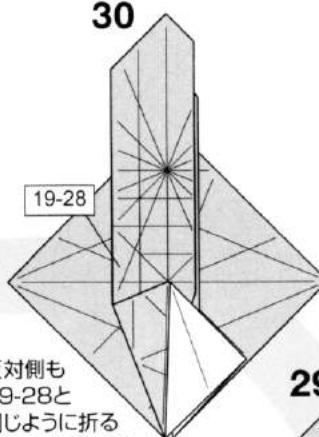
35

ついている折り筋でカドを上へ折る
Fold up the flap using the crease line.

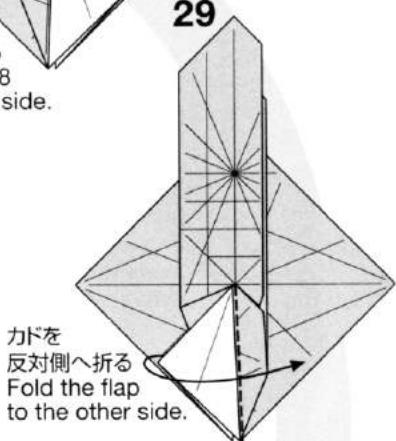
30

19-28

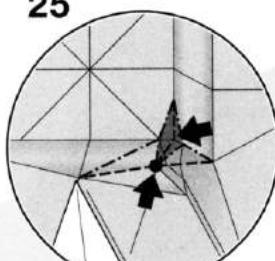
反対側も19-28と同じように折る
Repeat 19-28 on the other side.



29

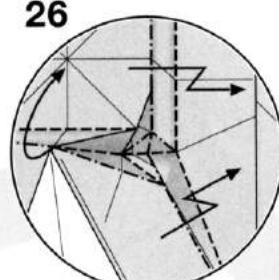


25



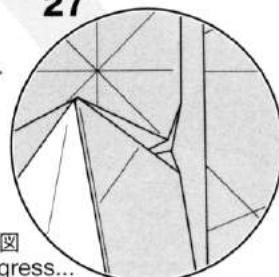
つけた折り筋を使って■の部分と●の点を沈めるように折りたたんでいく
Sink darker areas along with the marked point using the crease lines as shown.

26



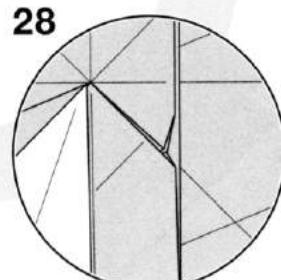
平らに折りたたむ
Assemble and flatten the model.

27

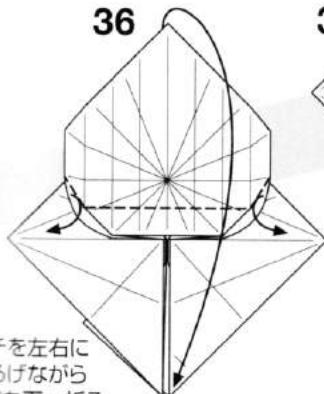


途中の図
In progress...

28

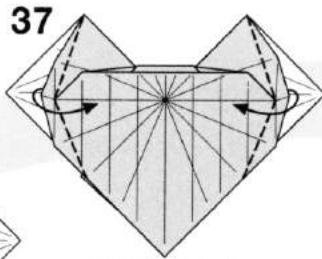


36



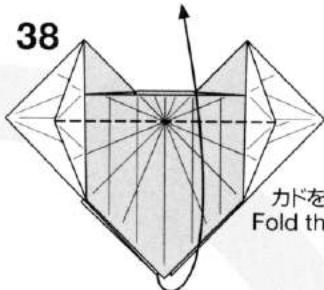
フチを左右にひろげながら
カドを下へ折る
Open the side layers
and fold the flap down.

37



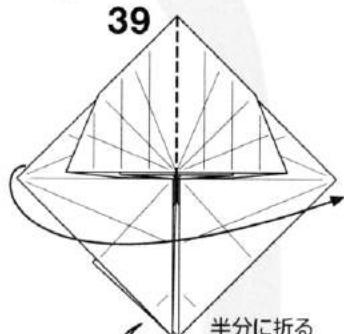
平らに折りたたむ
Squash and flatten the model.

38



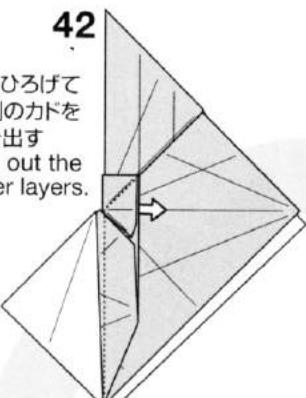
カドを上へ折る
Fold the corner up.

39



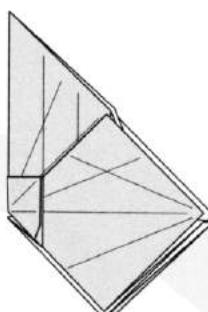
半分に折る
Fold in half.

42



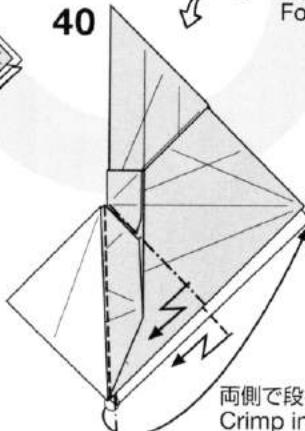
軽くひろげて
内側のカドを
引き出す
Pull out the
inner layers.

41



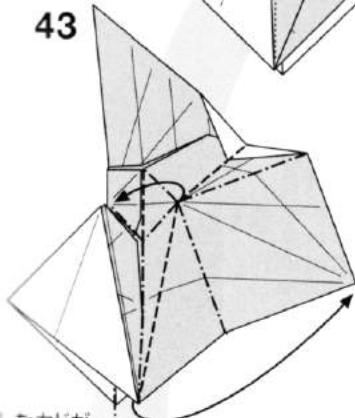
40の形にもどす
Unfold to 40.

40



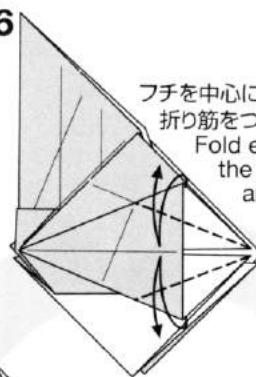
両側で段折り
Crimp inside
using the creases.

43



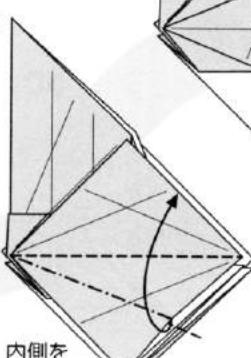
出したカドが
表になるようにして
41のような形に折りたたむ
Assemble so that the layer
with the corner with an
arrow will be the top one.

46



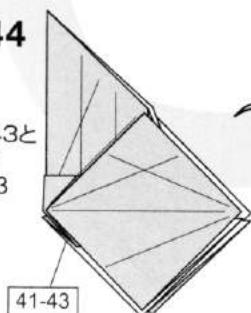
フチを中心に合わせて
折り筋をつける
Fold edges to
the crease
and unfold.

45



内側をひろげて
つぶすように折る
Open and squash.

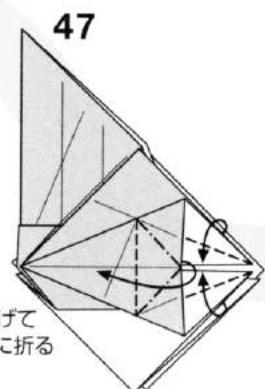
44



反対側も41-43と
同じように折る
Repeat 41-43
behind.

41-43

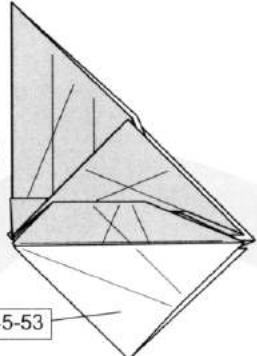
47



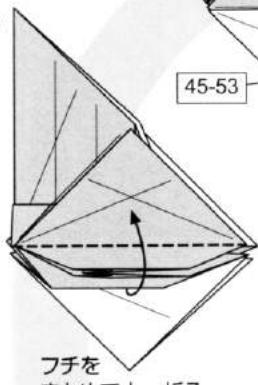
内側をひろげて
つぶすように折る
(花弁折り)
Petal fold.

56

中心のカドも
45-53と同じ
ように折る
Repeat 45-53
on the middle
layers.

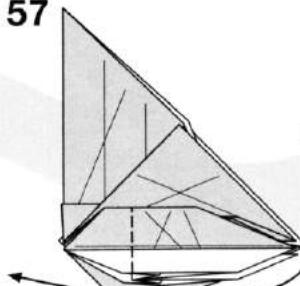


55



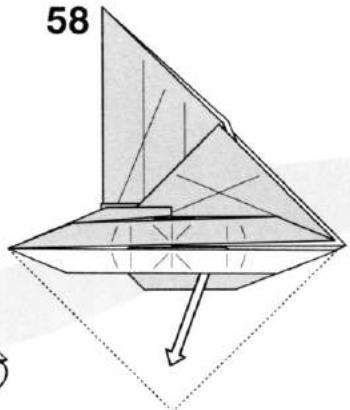
フチを
まとめて上へ折る
Fold the layers up.

57



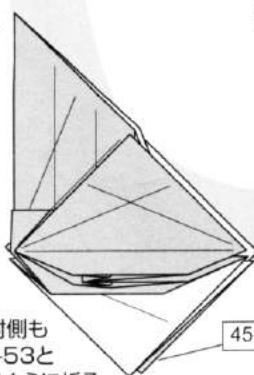
カドを反対側へ折る
Fold the corner
to the other side.

58



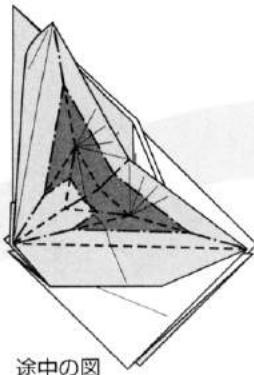
折りたたまれている
カドをひろげる
Pull out and unfold.

54



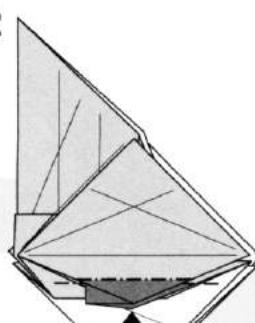
反対側も
45-53と
同じように折る
Repeat 45-53
behind.

53



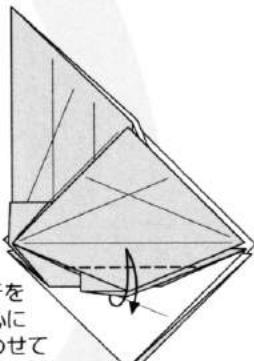
途中の図
図のような形に
沈める
In progress...

52



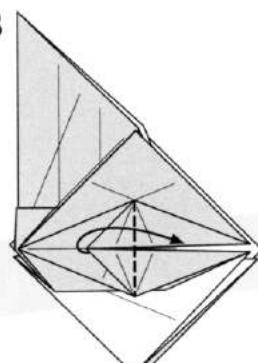
沈め折り
(Open sink)
Open sink.

51



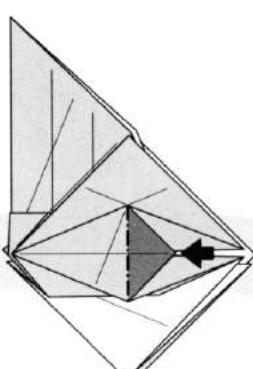
フチを
中心に
合わせて
折り筋をつける
Fold the edge to the
crease and unfold.

48



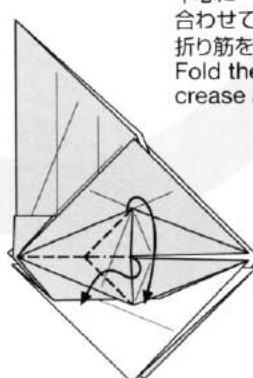
カドを反対側へ折る
Fold the corner
to the other side.

49

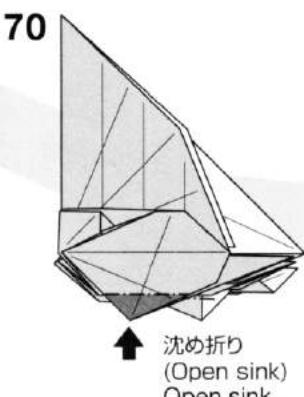
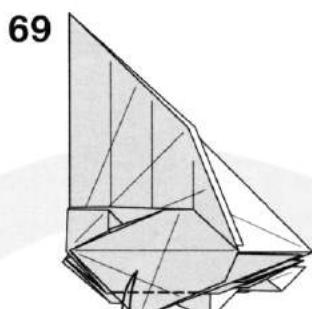
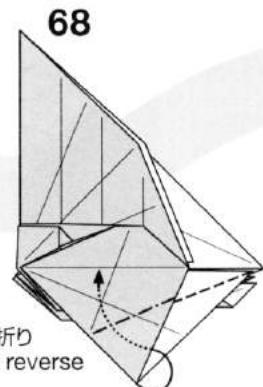
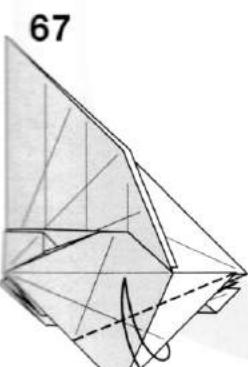
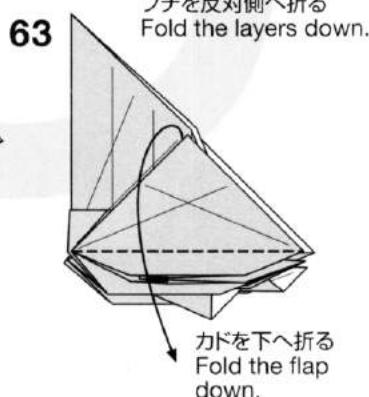
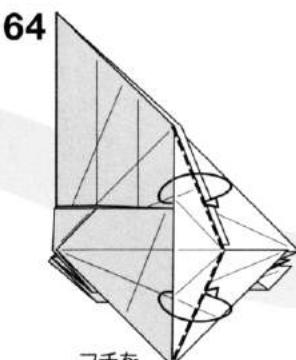
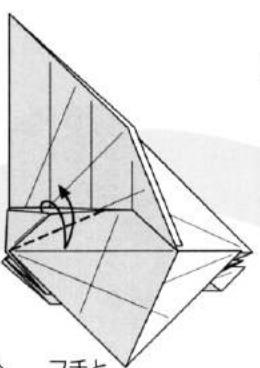
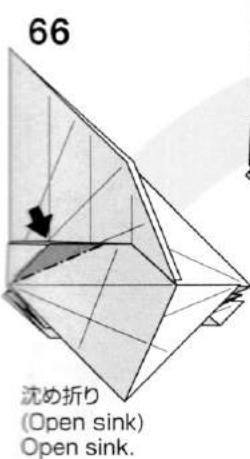
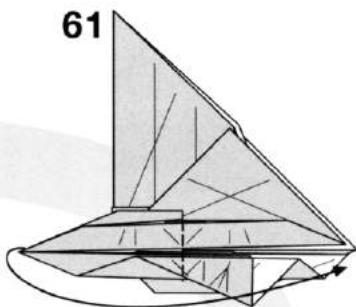
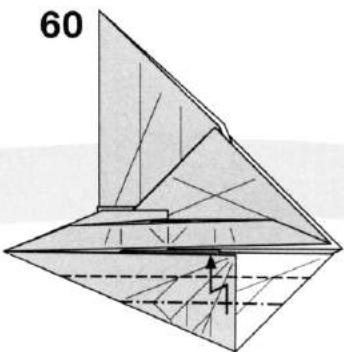
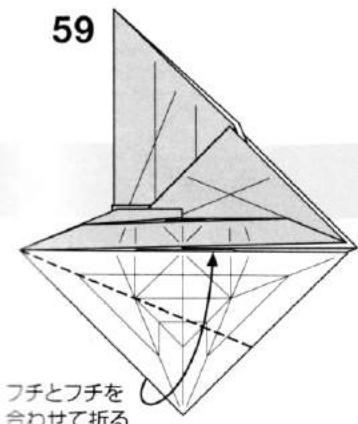


カドを内側に折り込む
Push the layer in.

50



フチを中わり折り
するように折る
Fold down while
inside reverse
folding the middle
layer.

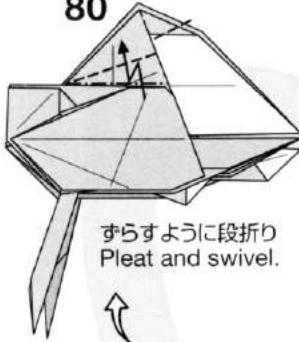


フチを
中心に合わせて
折り筋をつける
Fold the edge
to the crease
and unfold.

カドを後ろのフチの
幅に合わせて
折り筋をつける
Fold along the edge
behind and unfold.

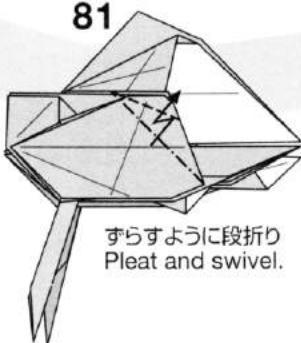
エンゼルフィッシュ

80



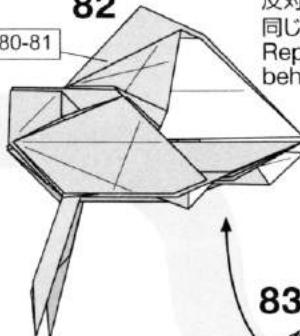
すらすように段折り
Pleat and swivel.

81



すらすように段折り
Pleat and swivel.

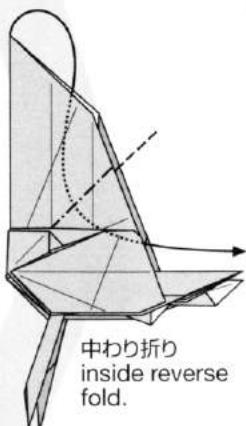
82



80-81

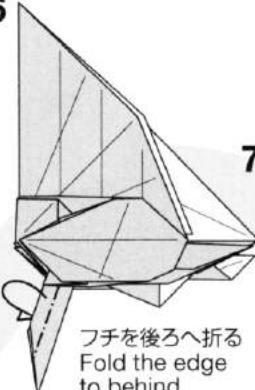
反対側も80-81と同じように折る
Repeat 80-81 behind.

79



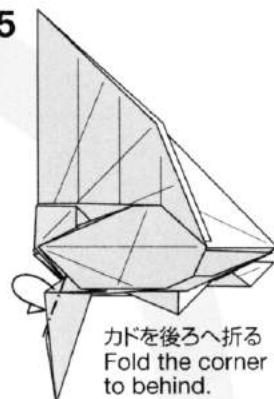
中わり折り
inside reverse fold.

76



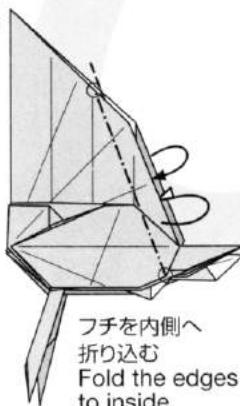
フチを後ろへ折る
Fold the edge to behind.

75



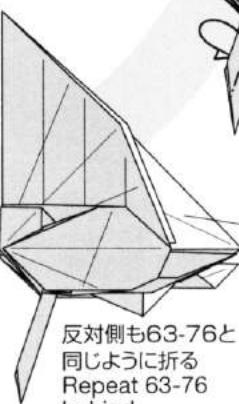
カドを後ろへ折る
Fold the corner to behind.

78



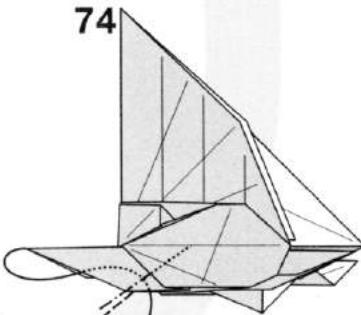
フチを内側へ
折り込む
Fold the edges to inside.

77



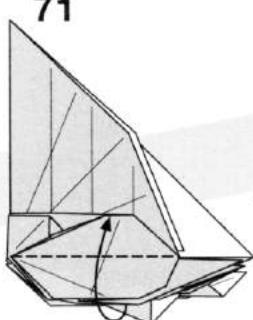
63-76
反対側も63-76と同じように折る
Repeat 63-76 behind.

74



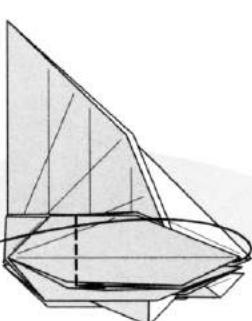
中わり折り
Inside reverse fold.

71



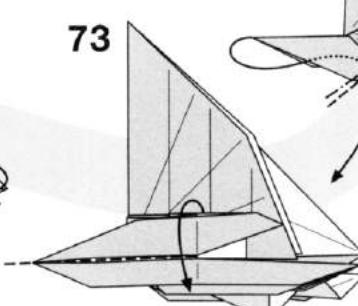
フチを上へ折る
Fold the layers up.

72

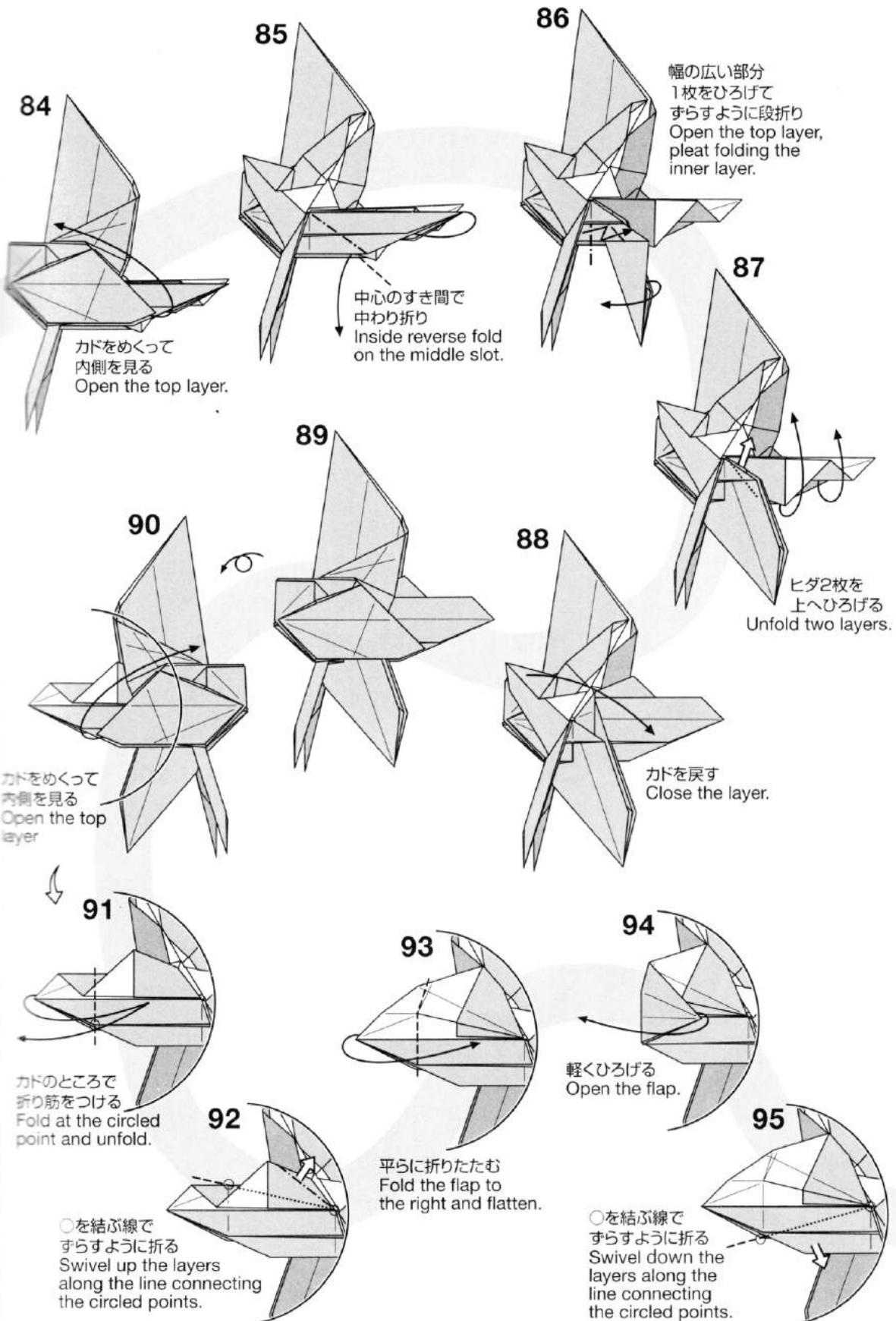


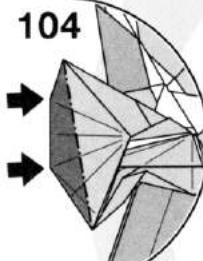
カドを反対側へ折る
Fold the corner to the other side.

73

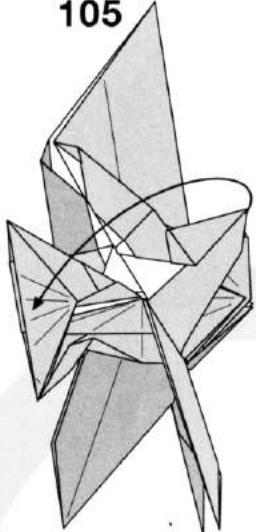


フチを下へ折る
Fold the layers down.

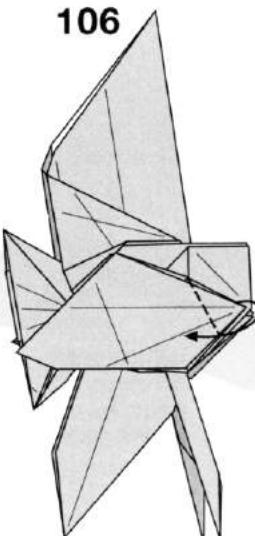




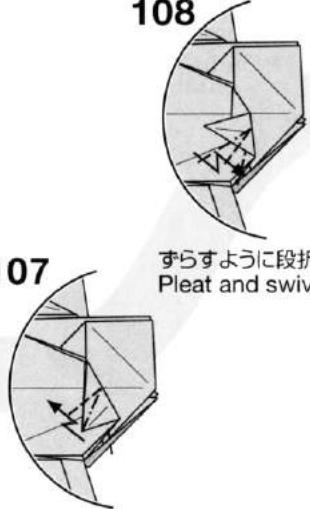
沈め折り
(Closed sink)
Closed sink.



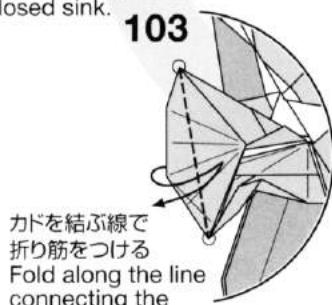
カドを戻す
Close the layer.



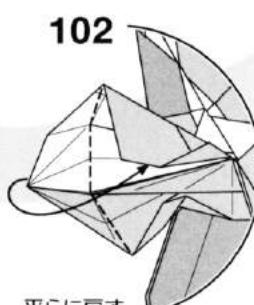
カドを斜めに折る
Fold the corner down.



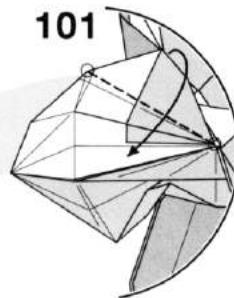
107
ずらすように段折り
Pleat and swivel.



108
カドを結ぶ線で
折り筋をつける
Fold along the line
connecting the
circled points and unfold.



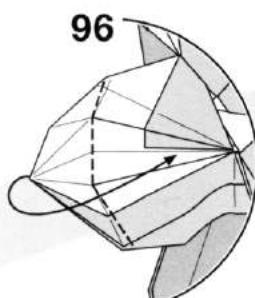
109
平らに戻す
Fold the flap to the
right and flatten.



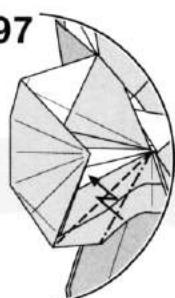
101
カドを斜めに折る
Fold along the
line connecting
the circled points.



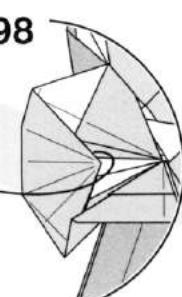
100
引き寄せる
ように折る
Swivel fold.



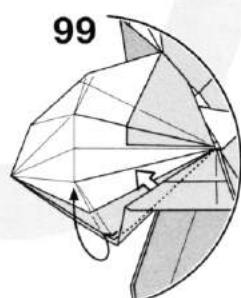
96
平らに折りたたむ
Fold the flap to the
right and flatten.



97
95でずらした部分が
平らになるように
段折り
Pleat so that the layers
swiveled in step 95
will be flattened.



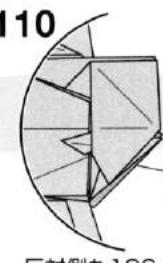
98
軽くひろげる
Open the flap.



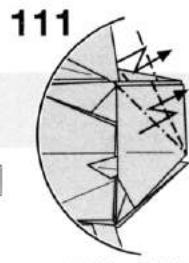
99
上の1枚を引き出す
Pull out and
unfold a layer.



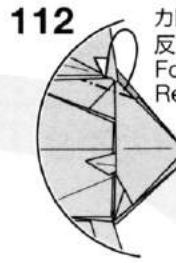
後ろの
フチを手前に出す
Reveal the hidden
layer.



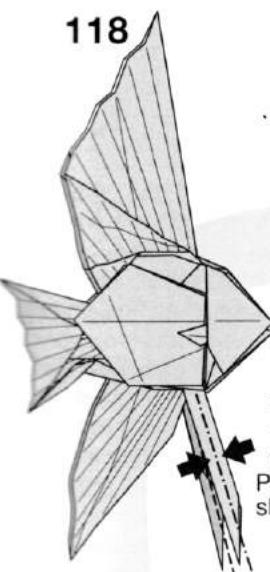
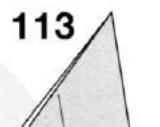
反対側も106-109と
同じように折る
Repeat 106-109
behind.



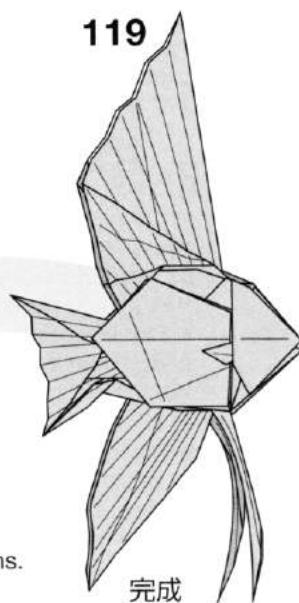
両側で段折り
Crimp inside.



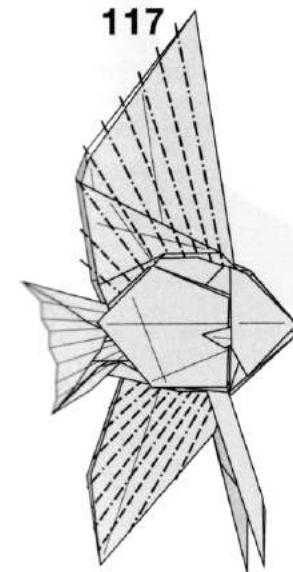
カドを内側へ折る
反対側も同じように折る
Fold the corner to inside.
Repeat behind.



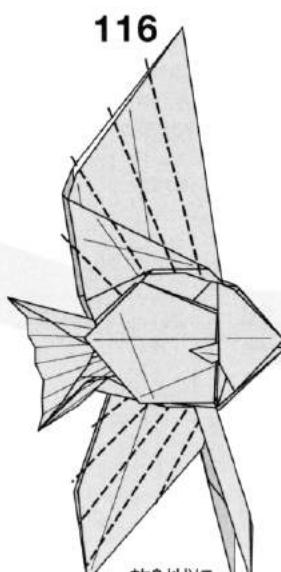
カドを
つまんで
細く折る
Pinch and
shape the fins.



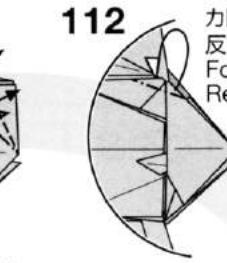
完成
Model completed.



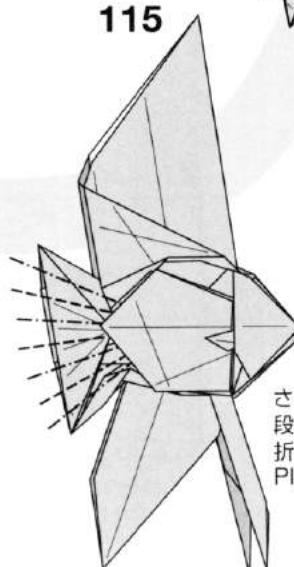
段折りするように
折り筋をつける
Pleat angle
bisectors.



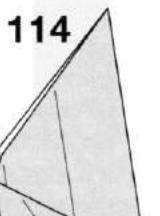
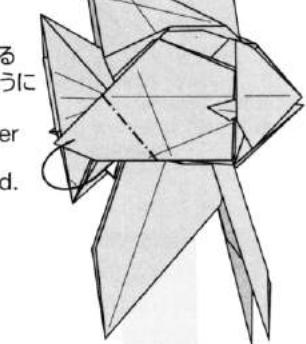
放射状に
折り筋をつける
Make a series
of semi-radial
crease lines.



1/4の角度で
放射状に
折り筋をつける
Crease dividing
the angle into
fourths.

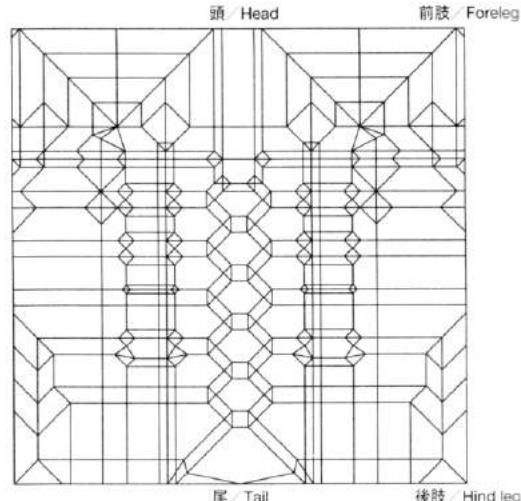
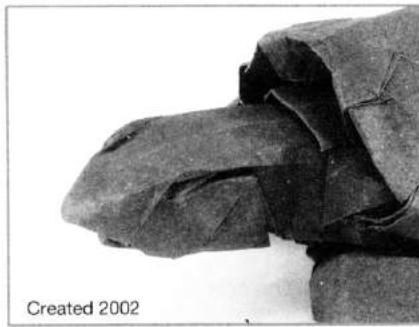


さらに半分の角度で
段折りするように
折り筋をつける
Pleat at angle bisectors.



アカウミガメ

Loggerhead Sea Turtle



甲 羅の模様を折り出したカメの作品は今でこそ珍しくありませんが、この作品を創作した当時にはまだ作例は多くありませんでした。

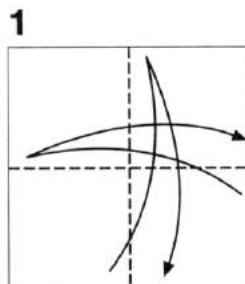
この作品では、甲羅の中心の部分に加えて、フチの模様の折り出しに挑戦しています。形をまとめるのはもちろんですが、技術的な面でもヒダの幅の変換や、ずらしなどの技術が詰め込まれています。ただし、その代償として、折り筋をつける工程が非常に細かいものとなっています。ヒダや折り筋の位置の都合上しかたがないのですが、特に上側のカドの部分は、つける印や折り筋が多く間違えやすいので注意して進めてください。

造形面では、蛇腹で折り出した形をそのまま採用したヒレの形が、折り込まれた甲羅の部分との対比もあり目につくでしょうか。造形の解像度はなるべく揃えるのが基本です。本来ならばもう少し作り込んでもよいのかもしれません、そもそも試作を始めた時にまず見つけたのがこの形で、この部分を大きく変えてしまうと別の作品になってしまいます。この作品に限らないのですが、あまり加工していない形を作品の一部に埋め込むのが好きなようです。

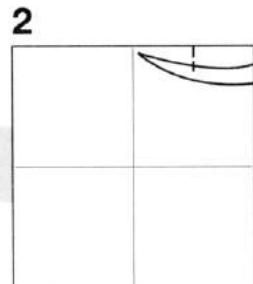
Turtle models with patterns on the shell are commonly found these days, but there were not many when I designed this sea turtle model.

One peculiarity of this model is expressions of the patterns on the edges of the shell. I had final shaping in mind naturally, but many technical tricks are involved in this model, such as changes in the widths of pleated edges and the series of swivel folds for an expression of the shell. These factors in turn require very subtle folding steps. In particular, it is hard to grasp which crease lines you should handle on the front end of the model because there are so many crease lines.

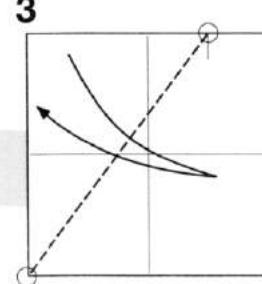
As for the final shaping, one prominent feature of the model is the contrast between the fins done with a broad pleat fold and the patterns on the shell. It is unusual for a model to have such parts so different in resolution, but I came up with this particular patterns of flaps when I first made a trial version of this model. Changing this part will turn out to be a separate model for me. I guess I tend to like to embed "raw" flaps in an intricate model.



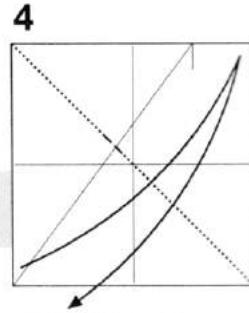
フチとフチを合わせて
折り筋をつける
Fold in halves and
unfold.



カドを折り筋に合わせて
折り筋をつける
Fold the corner to the
crease and unfold.

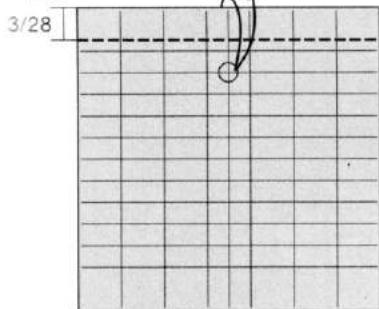


○を結ぶ線で折り筋をつける
Crease along the line
connecting the circled
points.



カドとカドを合わせて
折り筋との交点に
印をつける
Fold in half, but only
mark the cross. Unfold.

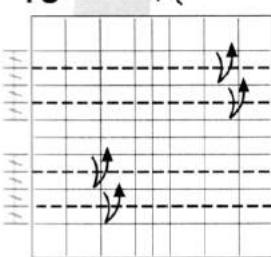
14



3/28

フチを折り筋に合わせて
折り筋をつける
Fold the edge to the crease
and unfold.

13



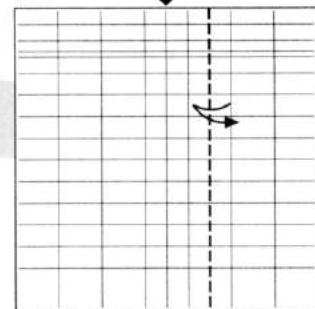
1/14の折り筋をつける
Fold and unfold at the
half of the widths.

15



さらに半分の幅(3/56)で
折り筋をつける
Fold and unfold
at the half of the widths.

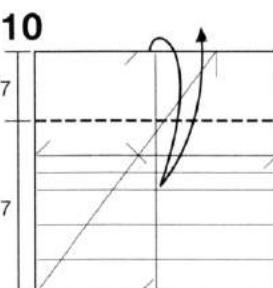
16



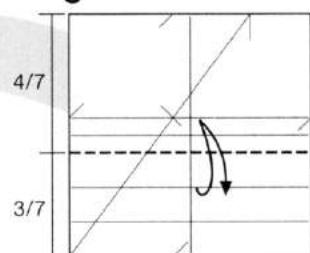
折り筋と折り筋を合わせて
折り筋をつける(▲は中心)
Fold the crease lines
onto each other and unfold.
▲ refers to the center line.

10

フチを折り筋に
合わせて折り筋を
つける
Fold the edge
to the crease
and unfold.

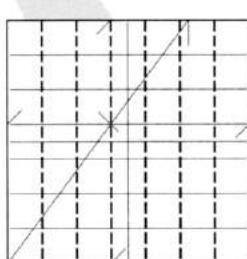


9



半分の幅で折り筋をつける
Crease at the half of
the width.

12

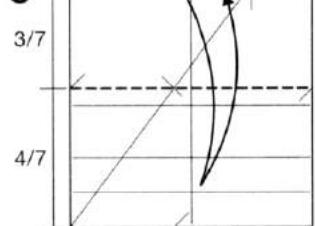


6-9と同じように
1/7の折り筋をつける
Repeat 6-9 on the other
direction to divide into
seventh.

11
1/7
6/7

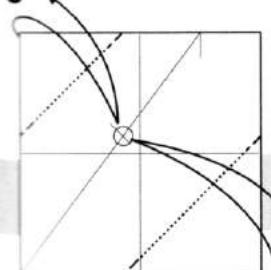
フチを折り筋に合わせて
折り筋をつける
Fold the edge to the
crease and unfold.

8



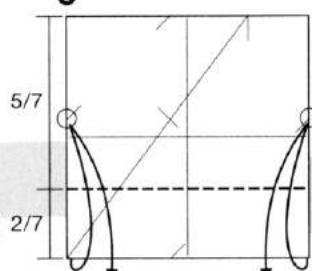
フチを折り筋に合わせて
折り筋をつける
Fold the edge to the
crease and unfold.

5



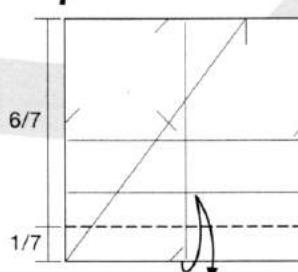
カドを○に合わせて印をつける
Fold the corners to the
circled point and unfold,
but only mark the edges.

6

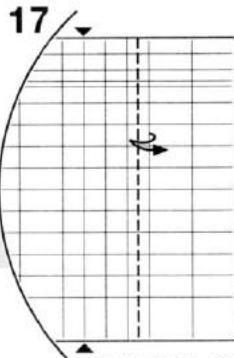


カドを印に合わせて折り筋を
つける
Fold the corners to the
crease and unfold.

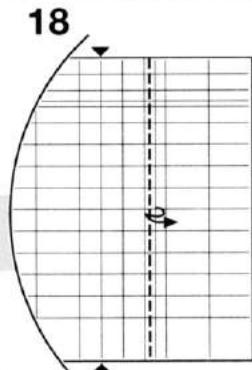
7



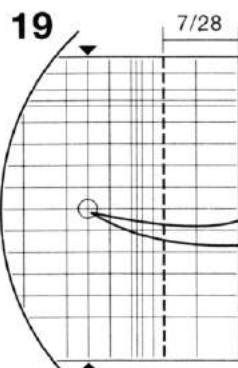
フチを折り筋に
合わせて折り筋を
つける
Fold the edge to
the crease and
unfold.



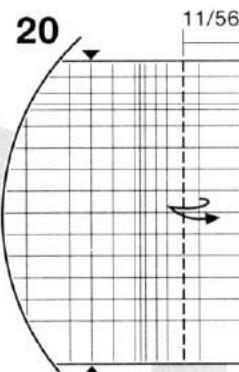
半分の幅(1/28)で
折り筋をつける
Crease at the
half of the width
(1/28).



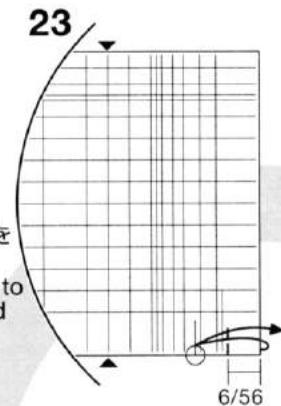
さらに半分の幅
(1/56)で
折り筋をつける
Crease at the
half of the width
(1/56).



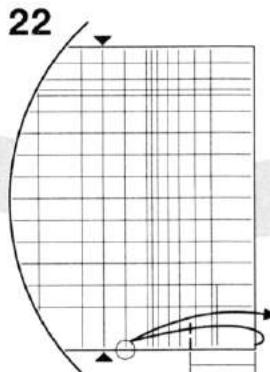
フチを中心に
合わせて折り筋を
つける
Fold the edge
to the center line.
Unfold



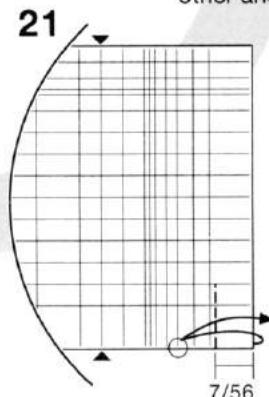
折り筋と折り筋を
合わせて折り筋を
つける
Fold the crease
lines onto each
other and unfold.



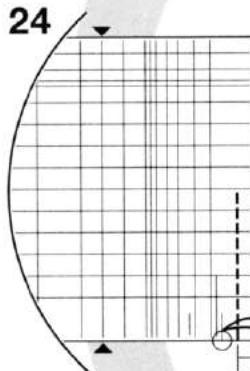
フチを折り筋に
合わせて折り筋を
つける
Fold the edge to
the crease and
unfold.



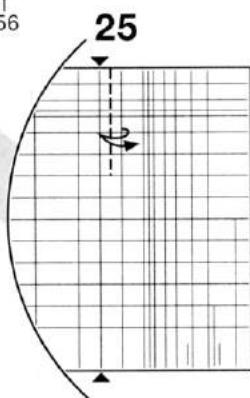
フチを折り筋に合わせて
印をつける
Fold the corner to the
crease to make a mark.
Unfold.



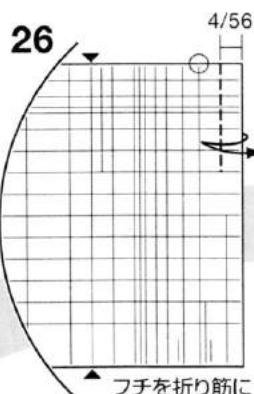
フチを折り筋に合わせて
折り筋をつける
Fold the edge to the
crease and unfold.



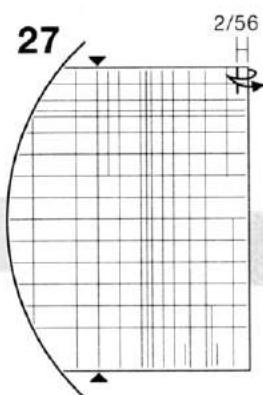
フチを印に合わせて
折り筋をつける
Fold the corner to
the mark and unfold.



半分の幅(1/28)で
折り筋をつける
Crease at the
half of the width
(1/28).

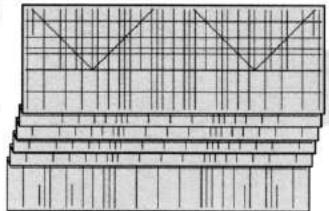


フチを折り筋に
合わせて折り筋を
つける
Fold the edge to
the crease and
unfold.

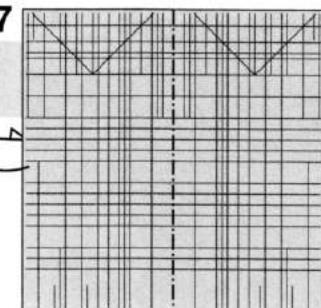


フチを折り筋に合わせて
印をつける
Fold the corner to the
crease to make a mark.
Unfold.

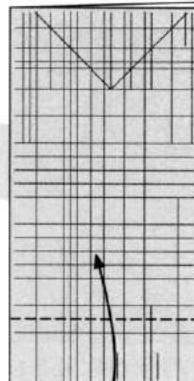
36

戻す
Unfold.

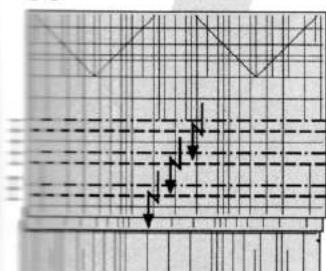
37



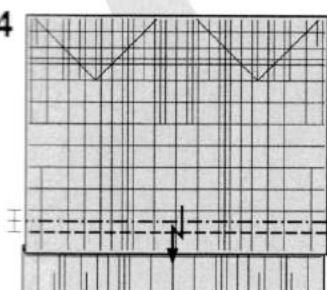
38



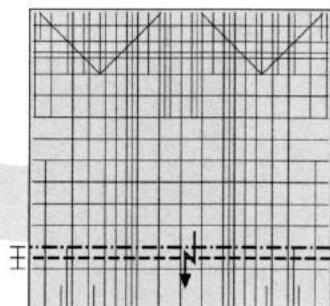
35

半分に折る
Fold in half.

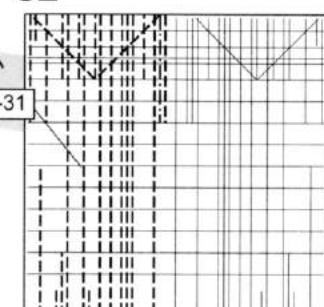
34

折り筋と折り筋を合わせて段折り
Pleat at the half of the width.

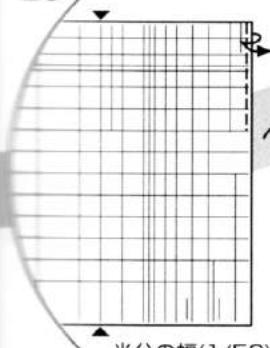
33

折り筋と折り筋を合わせて段折り
Pleat at the half of the width.

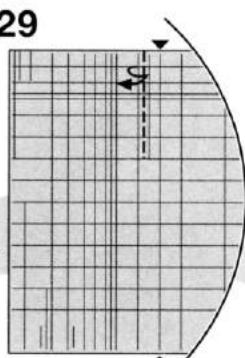
32

反対側も16-31と同じように
折り筋をつける
Repeat 16-31 on the other side.

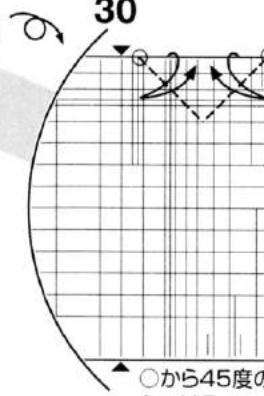
28

半分の幅(1/56)で
折り筋をつける
Crease at the
half of the width
(1/56).

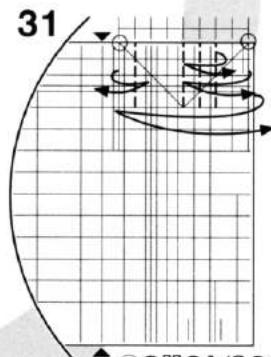
29

半分の幅(1/56)
で
折り筋をつける
Crease at the
half of the width
(1/56).

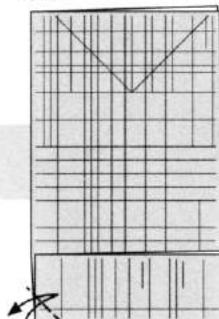
30

○から45度の折り筋
をつける
Fold at 45 degrees
and unfold.

31

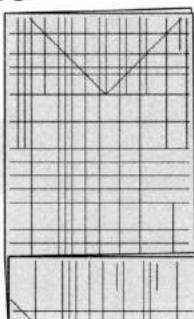
○の間の1/8の幅
(3/56)で折り筋を
つける
Fold and unfold
dividing the width
between circled
points into eighths
(= 3/56).

39



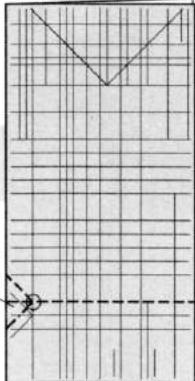
チを折り筋に合わせて
折り筋をつける
Fold the edge to the
crease and unfold.

40



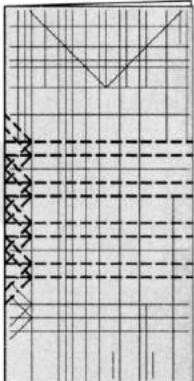
戻す
Unfold.

41



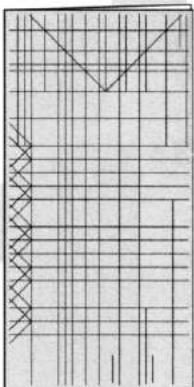
38-40と同じように
折り筋をつける
Repeat 38-40
on the next grid.

42



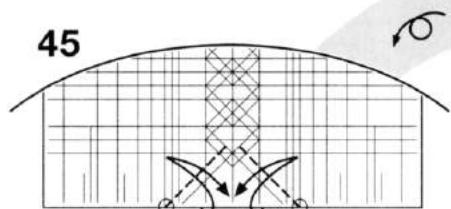
残りも同じように
折り筋をつける
Repeat eight times.

43



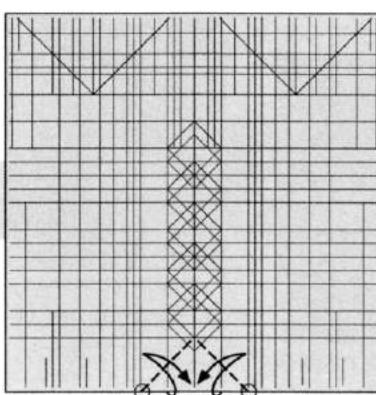
全部ひろげる
Unfold.

45



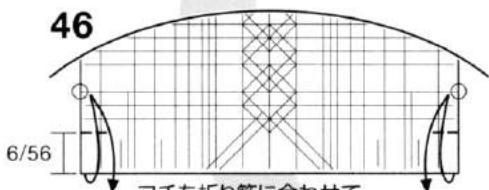
○から45度の折り筋をつける
Crease starting from the
circled point.

44



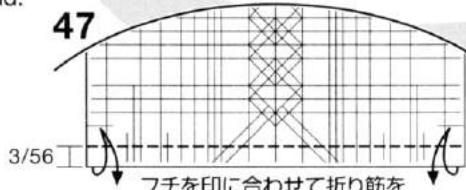
ついている折り筋を伸ばすようにして
折り筋をつける
Extend the crease lines.

46



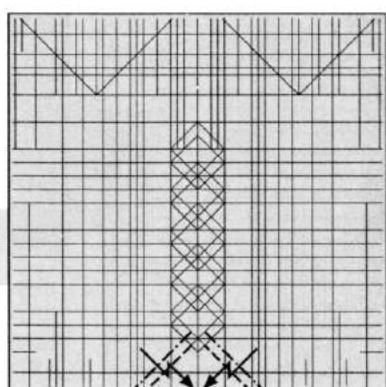
チを折り筋に合わせて
印をつける
Fold the edge to the
crease to make marks.
Unfold.

47

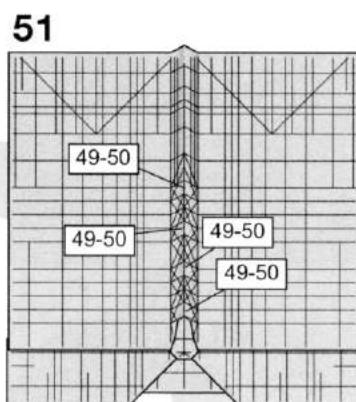
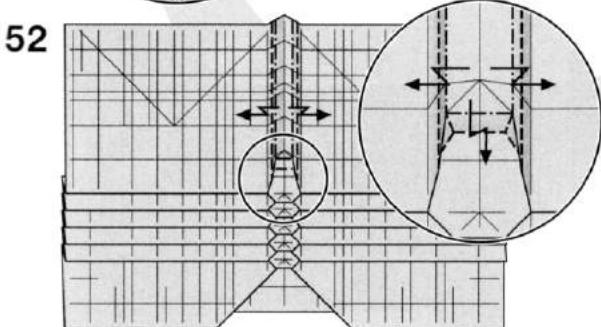
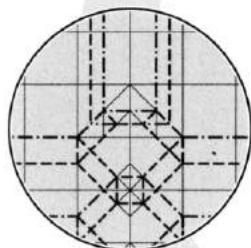
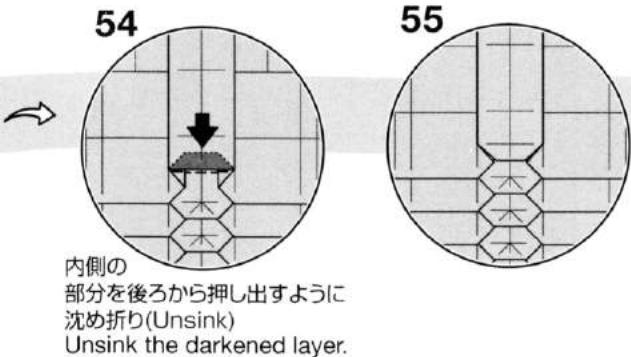
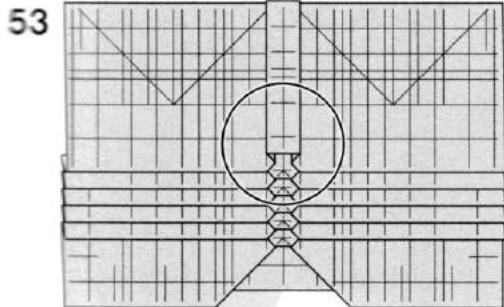


チを印に合わせて折り筋を
つける
Fold the edge to the marks
and unfold.

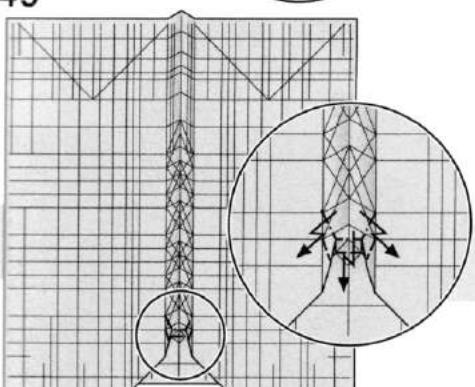
48



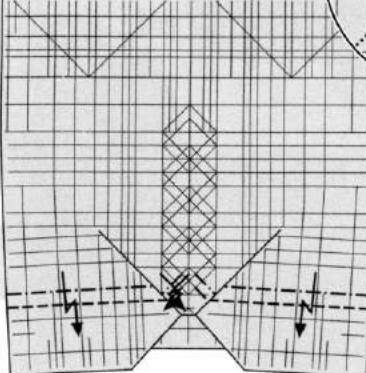
ついている折り筋で段折り
Pleat along the creases.



49
49の展開図
The crease pattern of 49



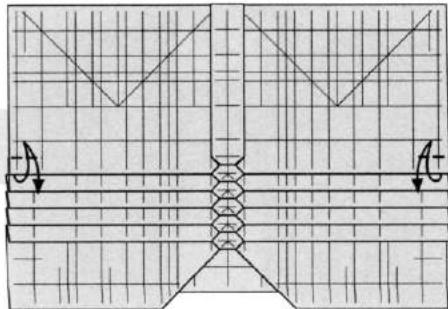
50



50の展開図
The crease pattern of 50

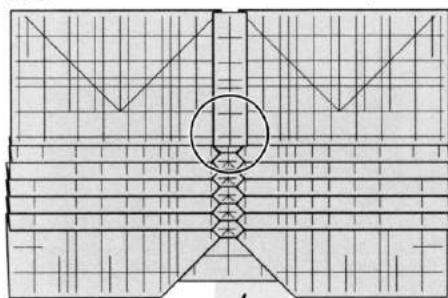
ついている折り筋を使ってつぶすように折ってヒダの向きを変える
Fold the edges to the other sides using the creases.

56

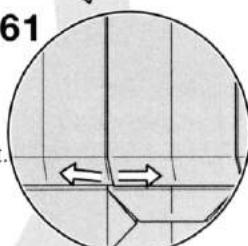


チを折り筋に合わせて印をつける
Fold the edge to the crease to make marks.
Unfold.

60

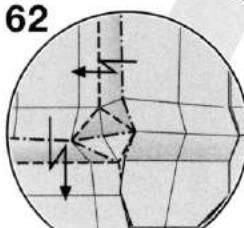


61



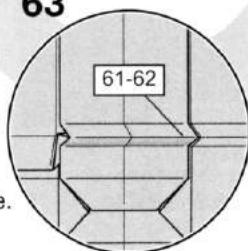
ヒダをひろげる
Open the pleat.

62



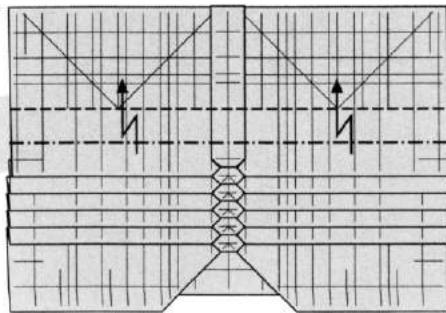
ヒダを引き出して反対側に折りたたむ
Pull the hidden edge to outside and flatten.

63



反対側も61-62と同じように折る
Repeat 61-62 on the other side.

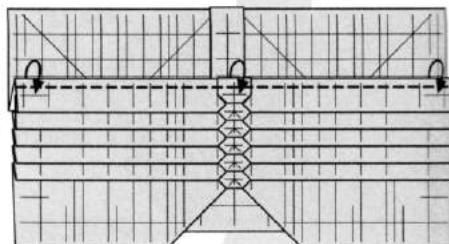
57



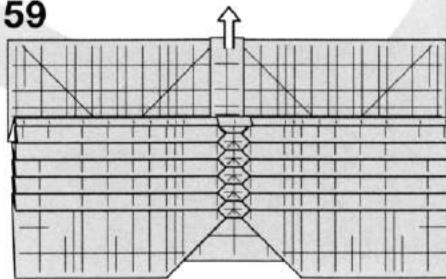
ついている折り筋で段折り
Pleat along the creases.

58

チを折り筋に合わせて折る
(1/56)
Fold the edge to the crease.
(1/56)

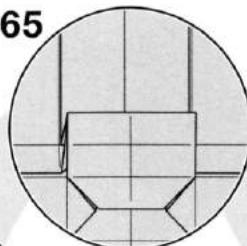


59

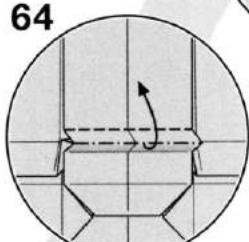


ヒダをひろげる
Unfold the layer.

65

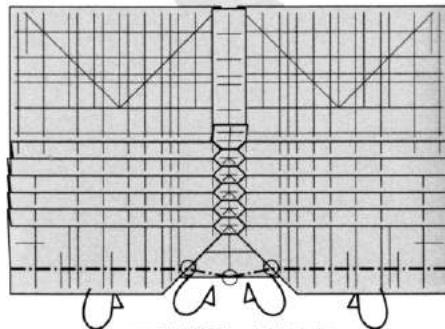


64

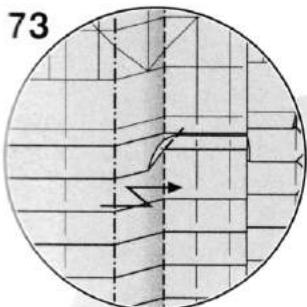


平らに折りたたむ
Flatten the model.

66

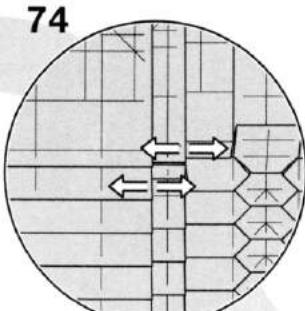


チを後ろへ折り込む
Fold the edges behind.



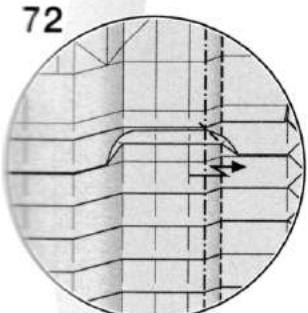
73

平らに折りたたむ
Flatten the model.



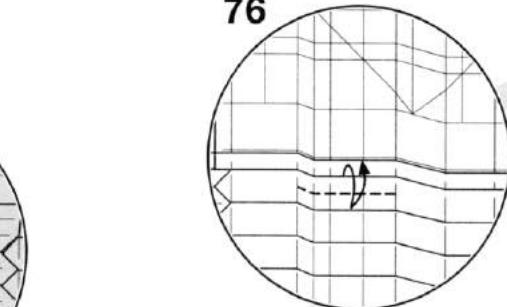
74

ヒダを軽く開いて
折ったフチを戻す
Open the pleats
and unfold to 71.



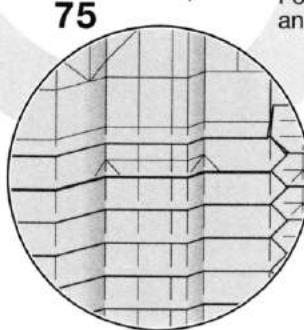
72

平らに折りたたむ
Flatten the model.

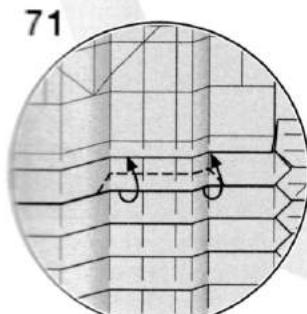


76

フチとフチを合わせて
折り筋をつける
Fold edge to edge
and unfold.

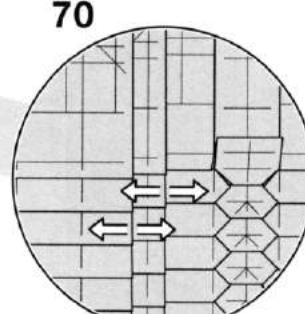


75



71

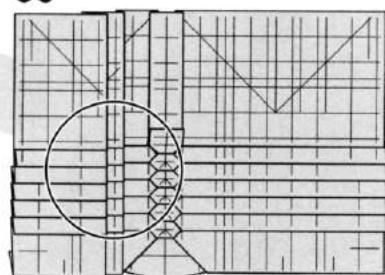
フチとフチを合わせて
引き寄せるように折る
Fold edge to edge.



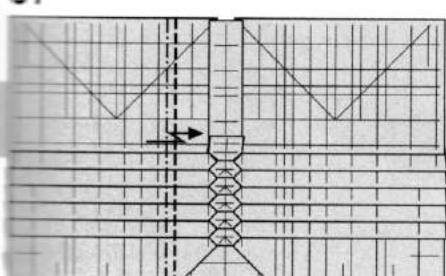
70

ヒダを軽く開く
Open the pleats.

69

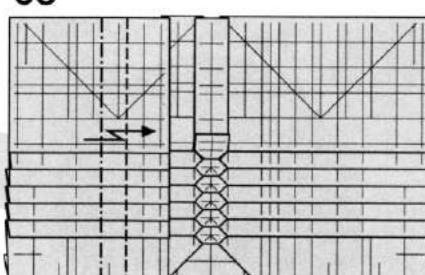


67

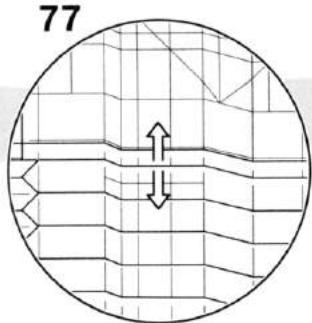


ついている折り筋で段折り
Pleat along the creases.

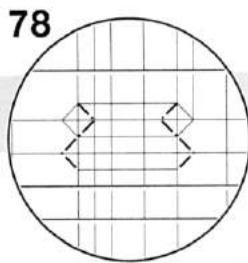
68



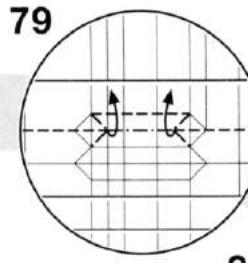
ついている折り筋で段折り
Pleat along the creases.



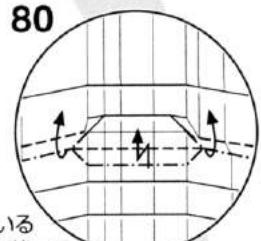
ヒダをひろげる
Open the pleat.



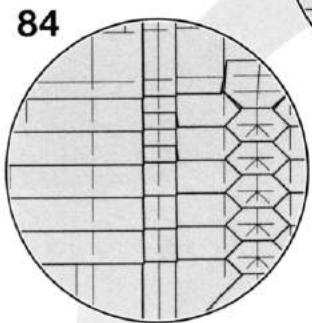
図のように折り筋をつける
Crease as shown.



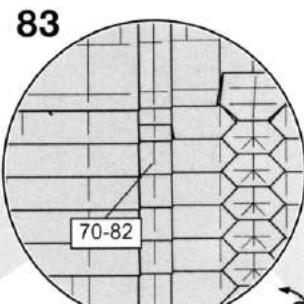
つけた折り筋を使って
ヒダを作るよう
に押し出す
Create a new pleat
pushing out the layer
with the creases.



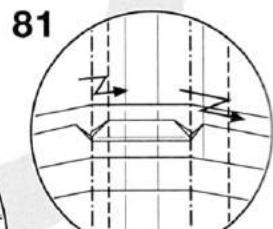
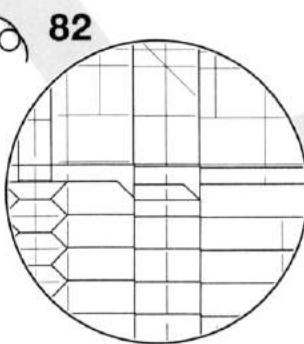
ついている
折り筋を使って
中心と左右にヒダを作るように折る
Pleat. Note that three pleats
are made separately.



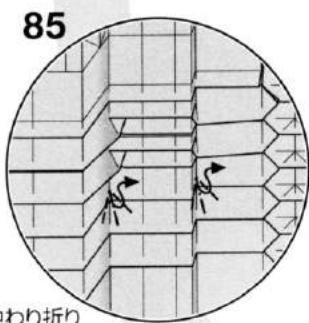
ヒダを軽く開く
Open the pleats.



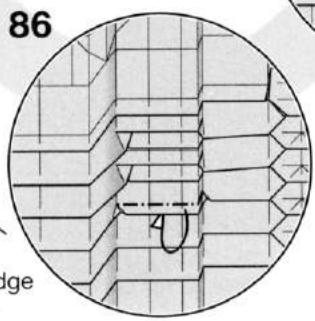
次のヒダも70-82と
同じように折る
Repeat 70-82
on the next pleat.



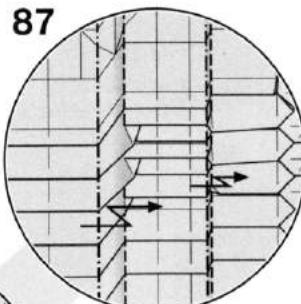
平らに折りたたむ
Flatten the model.



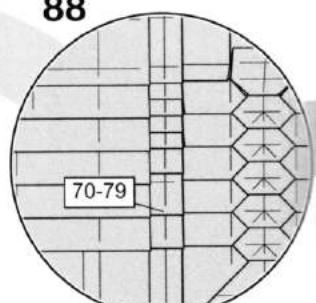
中わり折り
Inside reverse fold.



チフチを後ろへ
折り込む
Fold the edge
to behind.

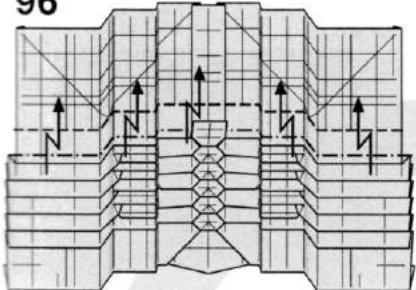


平らに折りたたむ
Flatten the model.



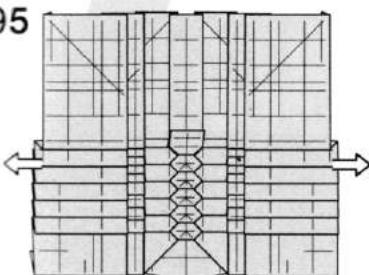
次のヒダも70-79までと
同じように折る
Repeat 70-79
on the next pleat.

96



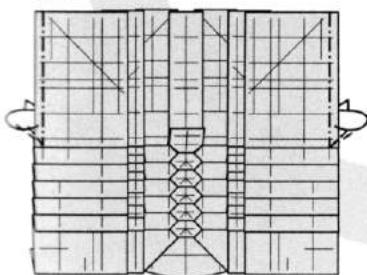
ついている折り筋で段折り
Pleat along the creases.

95



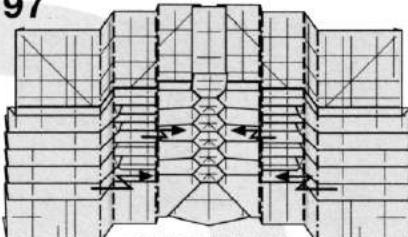
ヒダを軽く開く
Open the pleats.

94



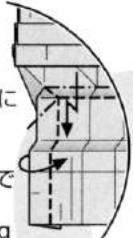
ついている折り筋で
フチを後ろへ折り込む
Fold the edges behind
along the creases.

97



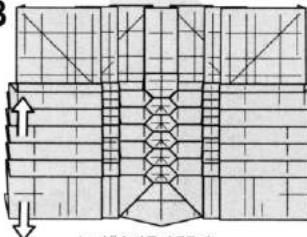
平らに折りたたむ
Flatten the model.

100



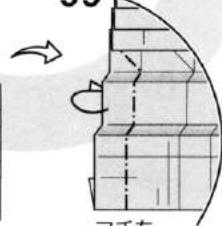
フチを折り筋に
合わせて
引き寄せる
ように段折りで
折りたたむ
Pleat folding
edge to crease on
the side.

98



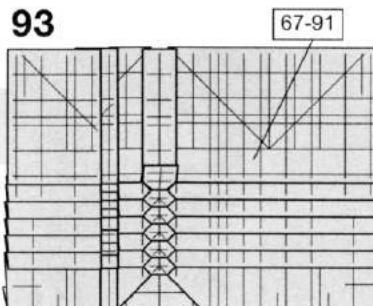
ヒダを軽く開く
Open the layers.

99



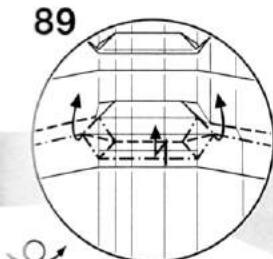
フチを
後ろへ折り込む
Fold the edge
to behind.

93

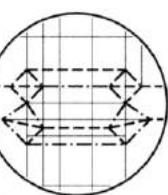


反対側も67-91と同じように折る
Repeat 67-91 on the other side.

89

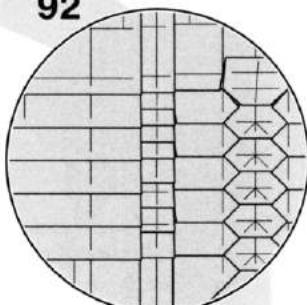


半マスずらして80と
同じように折りたたむ
Fold in the same
way as in 80 at the
half of the width
of grids here.

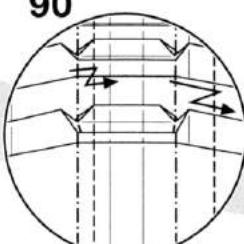


89の展開図
The crease
pattern of 89

92

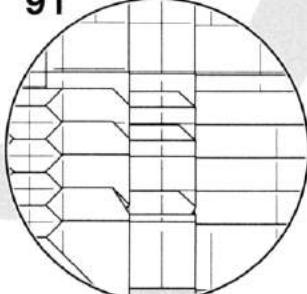


90



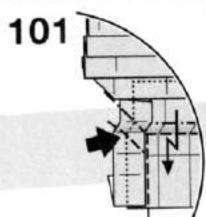
平らに折りたたむ
Flatten the model.

91

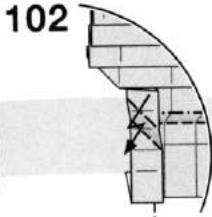


6

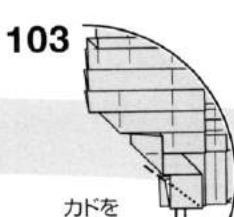
アカウミガメ



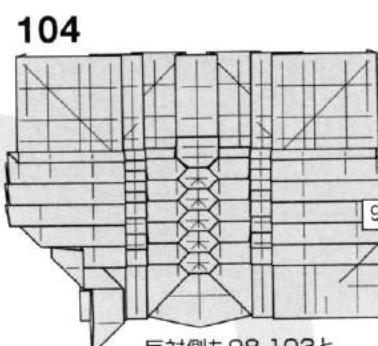
同じようにして
ヒダを合わせて
ずらすように
段折りで折りたたむ
Pleat sliding the
side layer to inside.



途中の図
平らに折りたたむ
In progress...
Flatten the model.

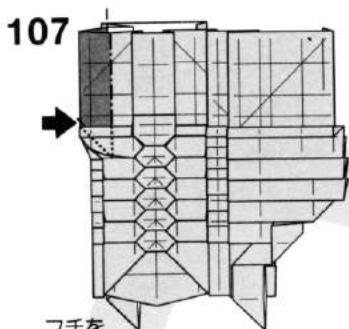


カドを
引き出して
つまむように折る
Pull out the
hidden corner.

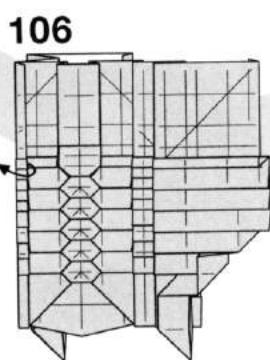


98-103

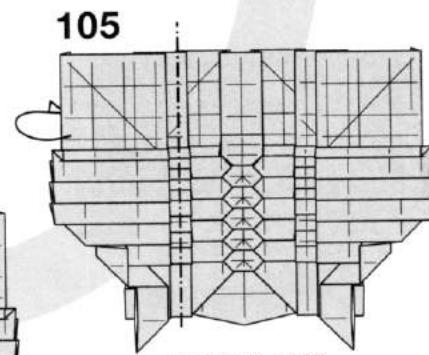
反対側も98-103と
同じように折る
Repeat 98-103
on the other side.



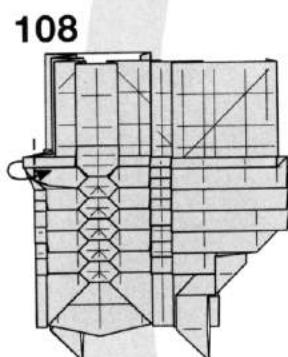
フチを
押し込むように折る
Sink the darkened area.



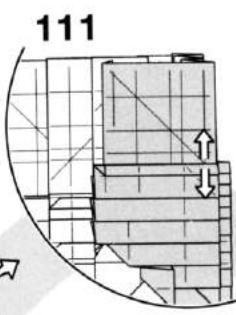
フチを軽くひろげる
Open the layer.



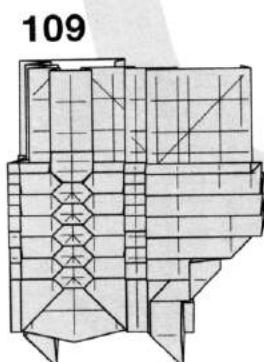
フチを後ろへ折る
Fold the edge
to behind.



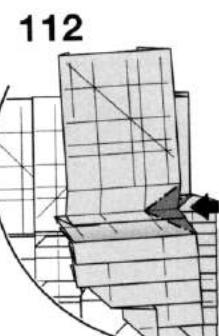
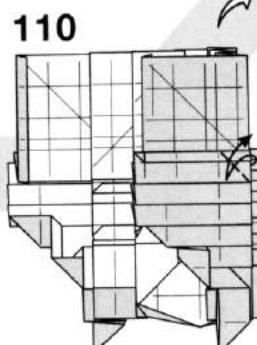
フチを戻すように折る
Re-fold the corner.



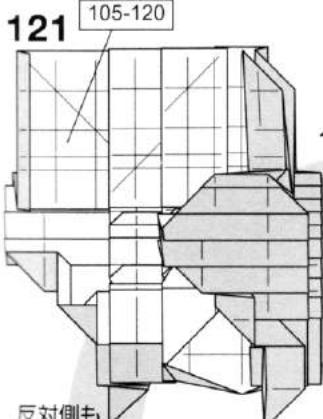
ヒダをひろげる
Open the layer.



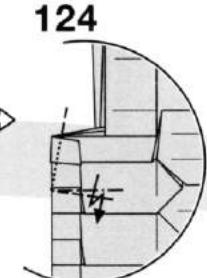
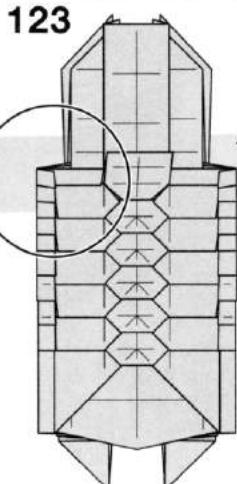
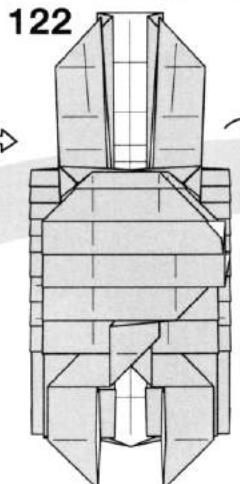
斜めに折り筋を
つける
Crease firmly
and unfold.



110でつけた折り筋の
部分をひろげる
Open the part where
the crease lines were
made in 110.

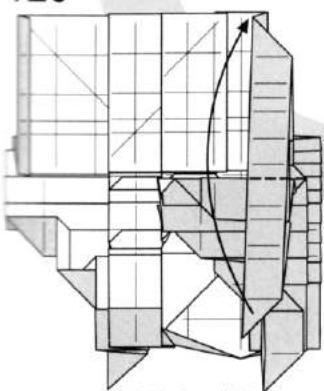


反対側も
105-120と同じように折る
Repeat 105-120 on the other side.



すらすように段折り
Crimp and swivel.

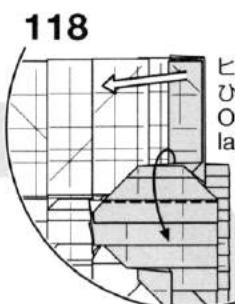
120



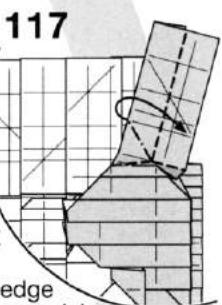
カドを上へ折る
Fold the flap up.



ついている折り筋で
蛇腹状に折りたたむ
Pleat fold and flatten the model.

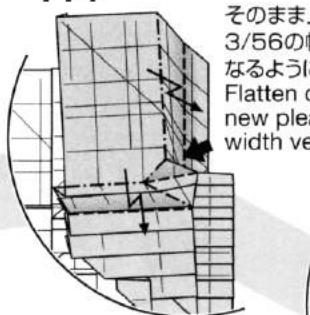


ヒダを軽く
ひろげる
Open the layers.



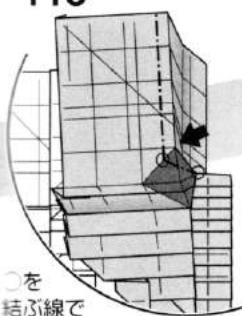
フチとフチを
合わせて平らに
折りたたむ
Fold edge to edge and flatten the model.

114



そのまま上の部分が
3/56の幅の蛇腹状に
なるように折りたたむ
Flatten creating a new pleat of the 3/56 width vertically.

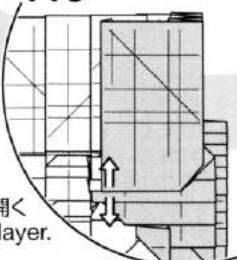
113



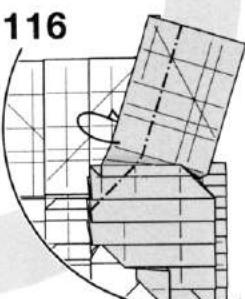
○を
結ぶ線で
つまむように折り筋をつける
Fold along the line connecting the circled points.

ヒダを軽く開く
Open the layer.

115

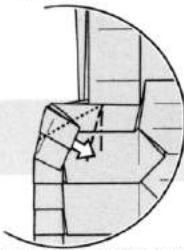


116



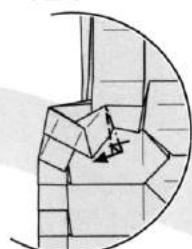
ついている折り筋を使って
フチを後ろへ折る
Fold the edge to behind along the crease.

125



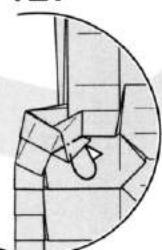
内側の紙を引き出す
Pull out the inner layer.

126



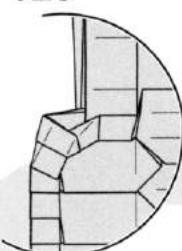
たるんでいる部分を段折り
Crimp and flatten.

127



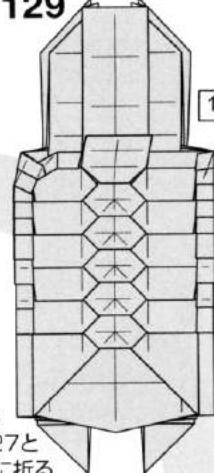
フチを後ろへ折り込む
Fold the layer behind.

128



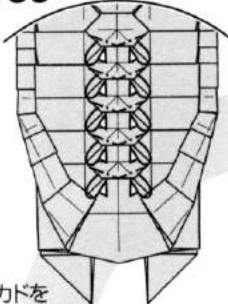
反対側も
124-127と
同じように折る
Repeat 124-127
on the other side.

129



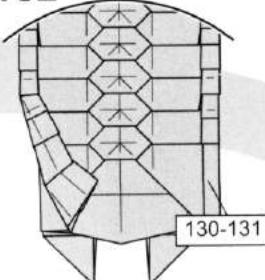
124-127

133



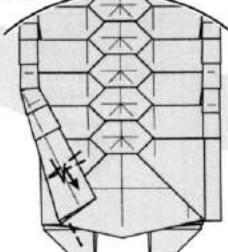
カドを
後ろへ折り込む
Fold the corners
to behind.

132



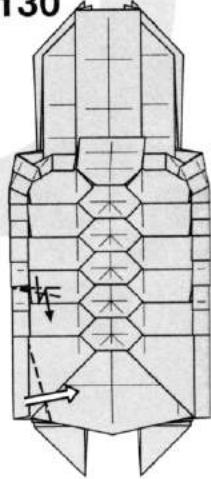
130-131

131



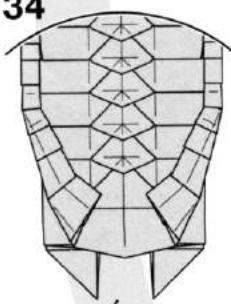
すらすように段折り
Crimp and swivel.

130

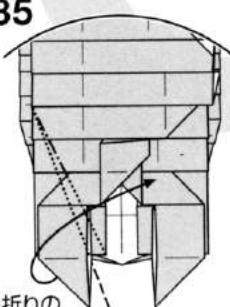


すらすように段折り
Crimp and swivel.

134

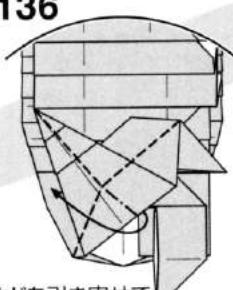


135



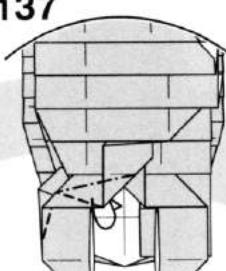
中わり折りの
ように折ってひろげる
Open and squash.

136



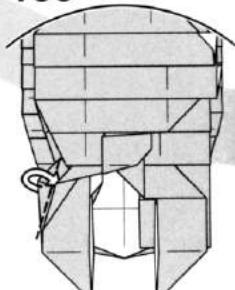
カドを引き寄せて
つまむように折る
Fold the layer to the
other side while inside
reverse folding at the
edge.

137



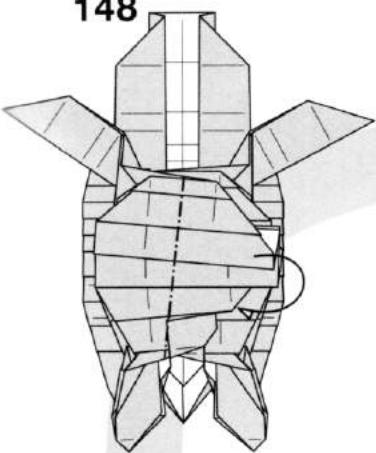
カドを後ろへ折り込む
Fold the corner
inside and swivel.

138



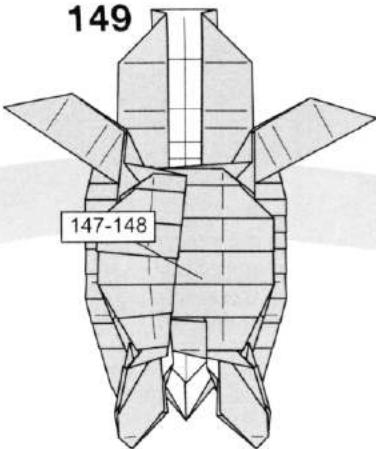
カドをすき間へ折り込む
Fold the corner
to inside.

148



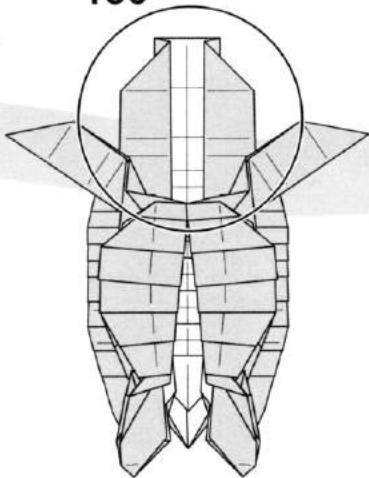
斜めに内側へ折り込む
Fold the layers to inside.

149

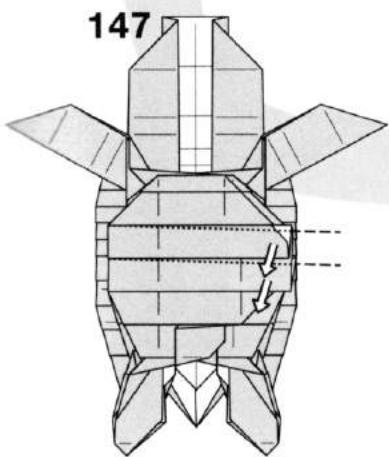


反対側も147-148と
同じように折る
Repeat 147-148
on the other side.

150

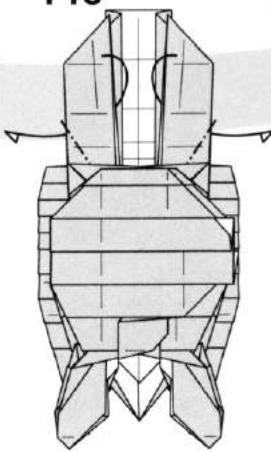


147



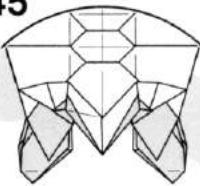
ヒダをすらすように折る
Swivel the layers.

146

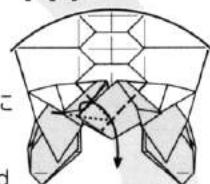


カドを斜めに折る
Mountain fold
the flaps.

145

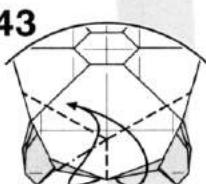


144



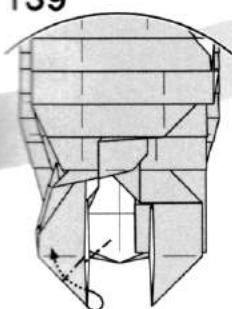
カドを下に折って
起き上がってきた
部分をつぶすように
折る
Fold down and
flatten the raised
layers.

143



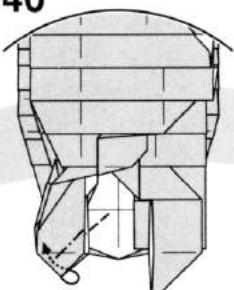
カドをつまむように折る
Rabbit-ear fold.

139



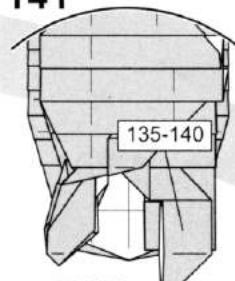
カドを内側へ折り込む
ように中わり折り
Inside reverse fold.

140



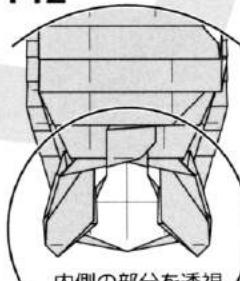
もう一度中わり折り
Inside reverse fold.

141

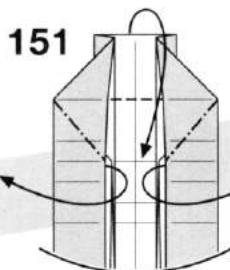


反対側も
135-140と
同じように折る
Repeat 135-140
on the other side.

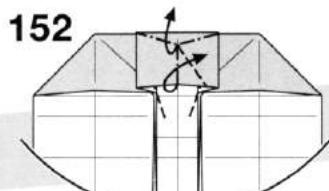
142



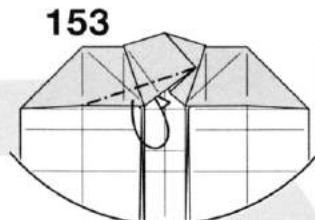
内側の部分を透視
The inner view



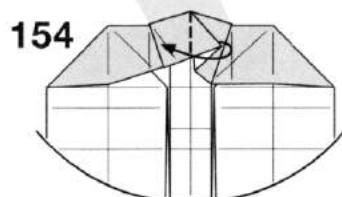
上の1枚をひろげて
つぶすように折る
Open the top layers
and squash.



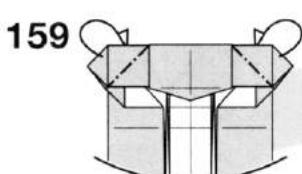
中心の部分をずらして
つまむように折る
Pinch at the center
and rabbit ear fold.



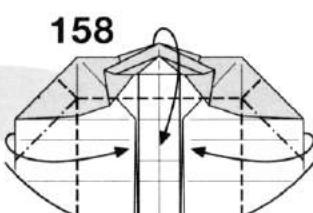
カドを内側へ
折り込む
Fold the layer
to inside.



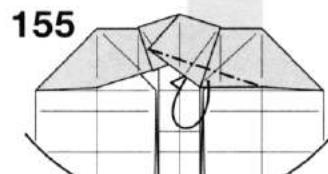
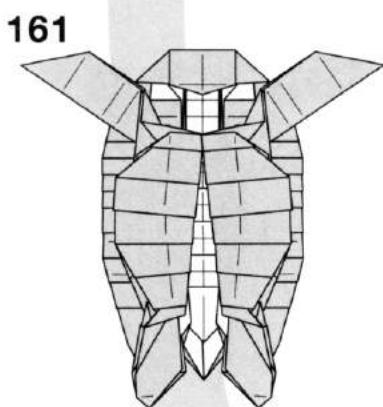
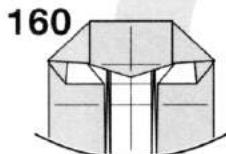
カドを反対側に折る
Fold the corner
to the other side.



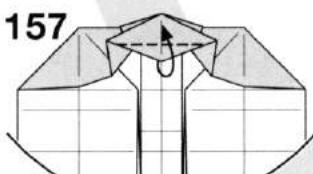
カドを後ろへ折る
Fold the flaps
to behind.



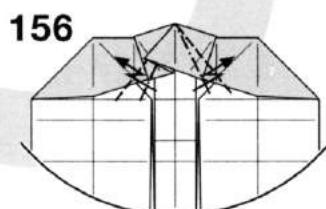
それぞれフチを折って
両側の部分をつまむように折る
Fold the edges and squash
the top part.



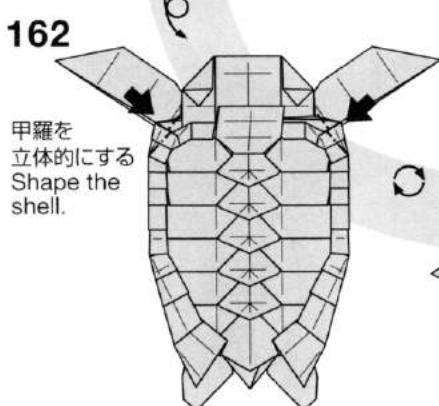
カドを内側へ折り込む
Fold the layer to inside.



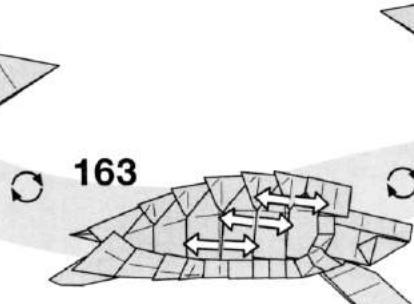
カドを上へ折る
Fold the corner up.



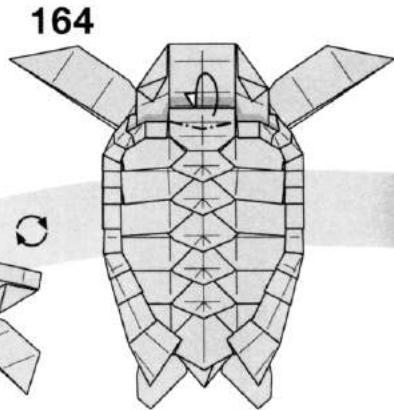
中心線を合わせて
両側で段折り
Open and pleat
on both sides.



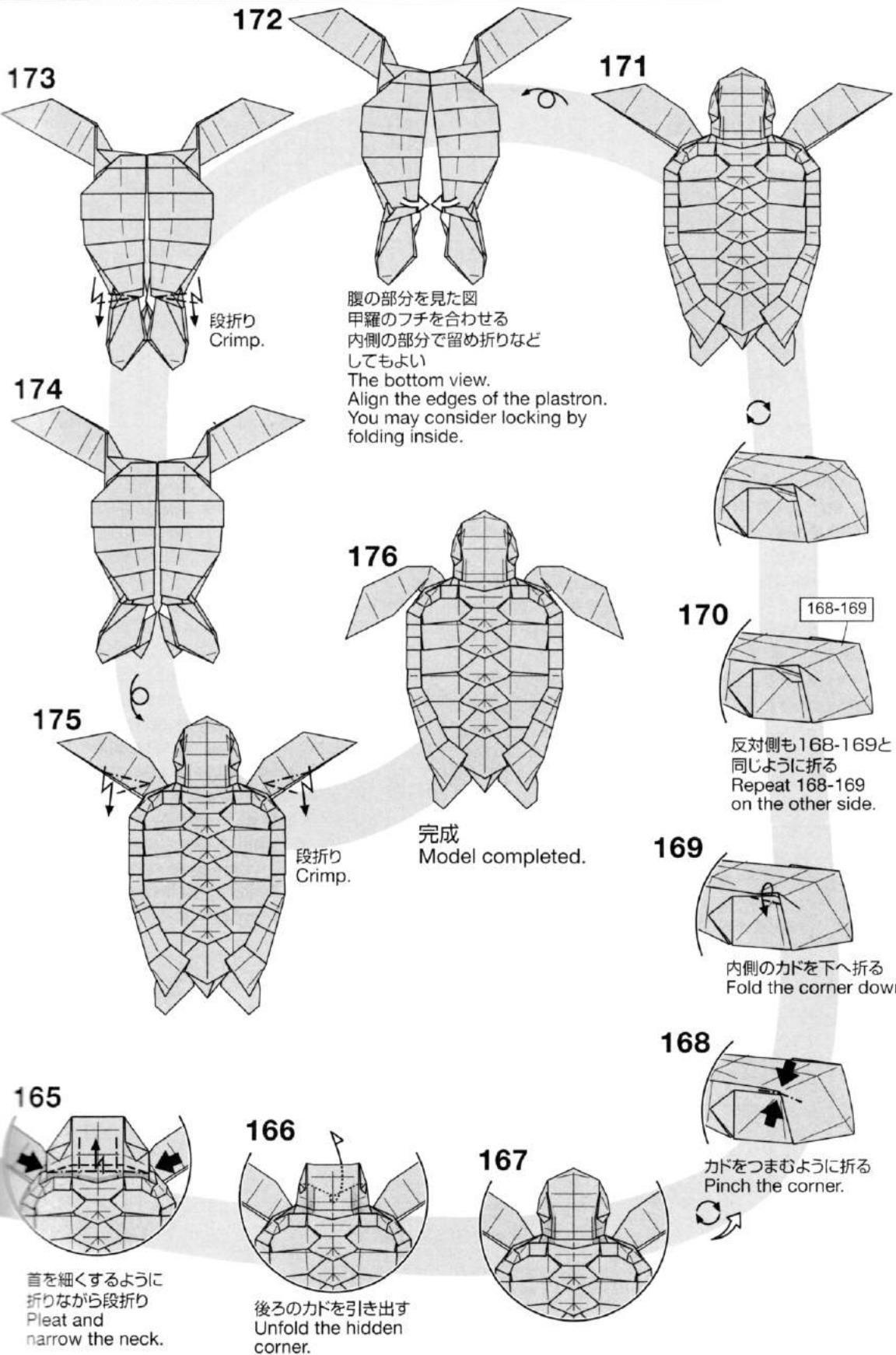
甲羅を
立体的にする
Shape the
shell.



ヒダをずらして
形を調整する
Shape shifting the layers.

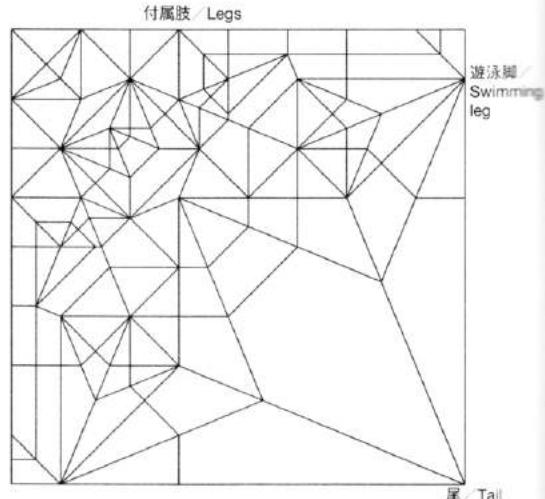
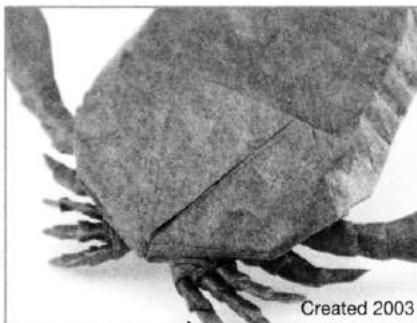


フチを内側に折り込む
Fold the edge inside.



ユーリピテルス

Eurypterus

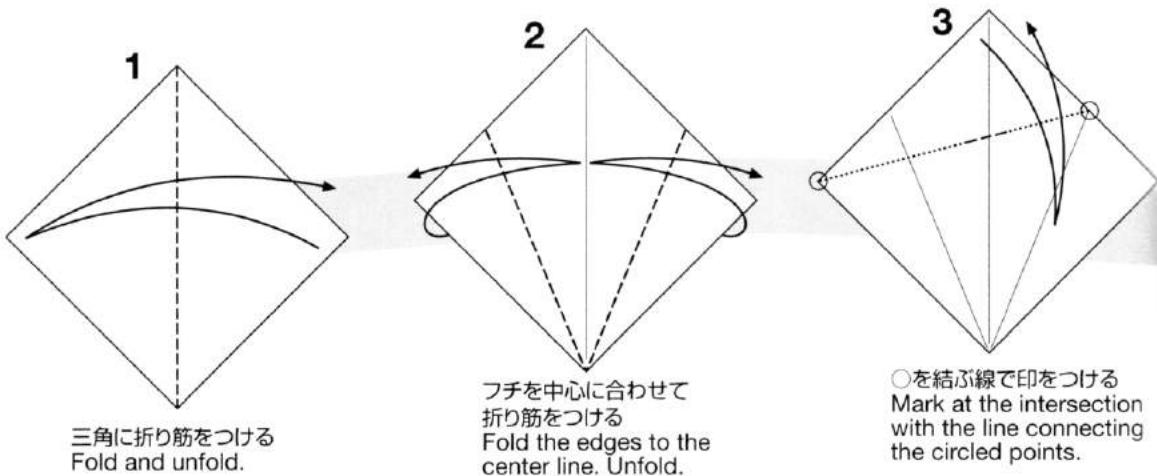


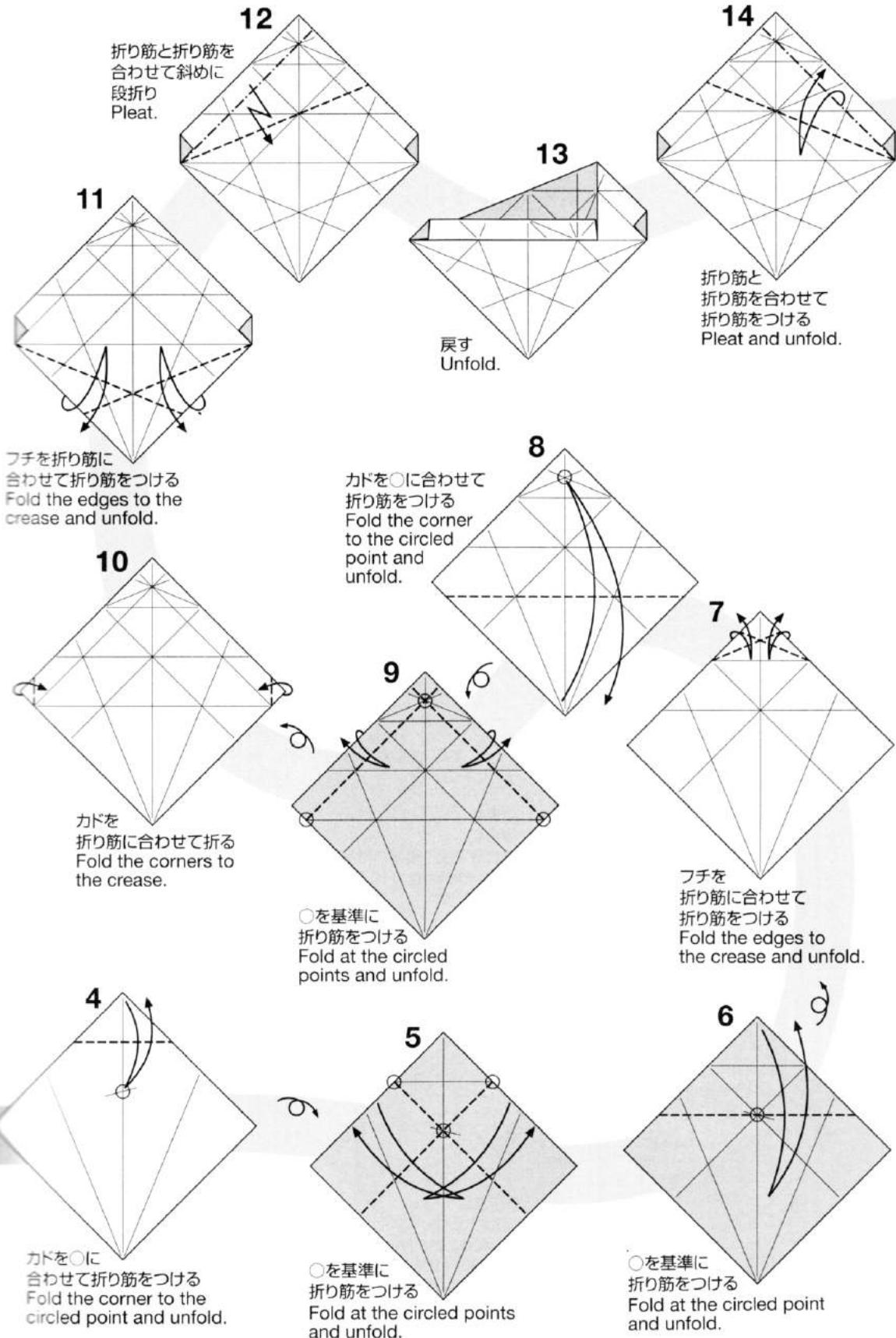
この作品は、そもそもは2003年のTVチャンピオンのために創作したものです。古生物をテーマに考えた作品の一つのですが、構成等の都合で結局使わず、ほぼ完成した試作のままお蔵入りしていました。その後、2008年のOrigamiUSAのコンベンションの際に行われたオリガミ・チャレンジ(題材を決めて競作するイベント)のテーマが「Prehistoric(先史時代の)」であったため、当時の試作を引っ張り出して整理、折り直したものが本作になります。

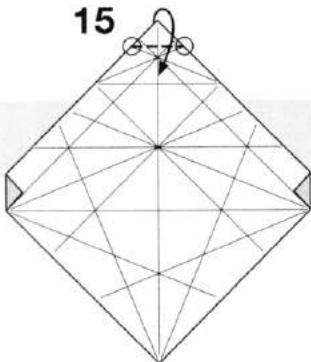
テーマがある募集に合わせて創作をする場合、何を題材とするかは悩みどころです。自信があるならわかりやすい題材をえらび完成度を上げるのが正攻法ですが、変化球として少しひねった題材を選ぶのも面白いものです。ただし、他の作品の題材被りを警戒してあまり奇をてらいすぎると、テーマとかけ離れてしまうこともあるので、ほどほどにしておくのが良いかもしれません。また題材だけではなく、造形や技法、見せ方などでも差別化は可能です。一般的な題材であっても、新しい手法と組み合わせることで、新鮮な作品になります。「何」を「どう」折るかを考え選ぶのが良さそうです。

I designed this model first for a TV program "TV Champion" in 2003. The program asked me to display prehistoric creatures. However, it did not show up in the program after the final editing. I refolded this model, with revisions, when the theme of "Origami Challenge" in the 2008 Origami USA Convention was "Prehistoric".

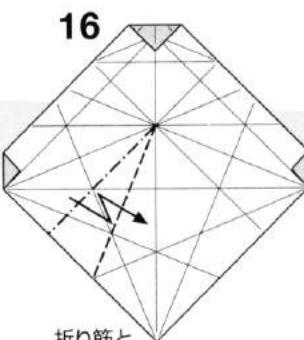
Designing models for thematic exhibitions is difficult. I can always design something straightforward if I am confident enough, but sometimes I would be inclined to design something "peripheral". However, to do so, care should be taken not to be off the theme, which happens when people try to avoid overlap of motifs with other folders. Models could be distinctive not only in motifs but also in shaping, skills, and ways of displaying. A popular motif could produce a brand-new model when it is done with some innovative folding/designing techniques. It is always important to consider what to fold how.



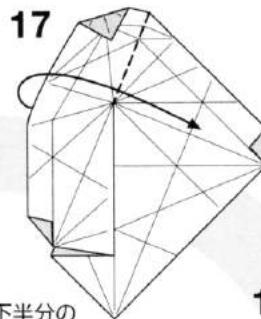




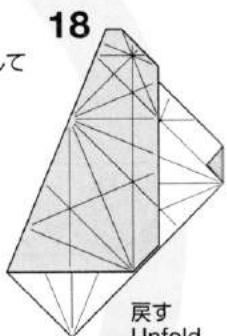
○を結ぶ線で折る
Fold along the line connecting the circled points.



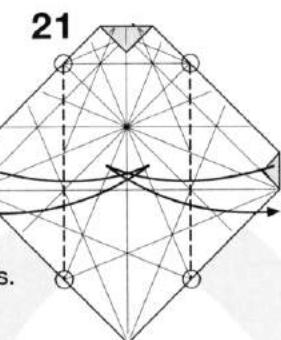
折り筋と
折り筋を合わせて斜めに
段折り
Pleat.



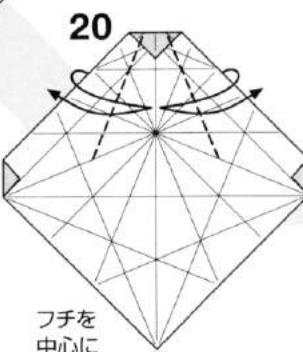
下半分の
折り筋をのばすようにして
平らに折りたたむ
Fold the layer to the other side and flatten the model.



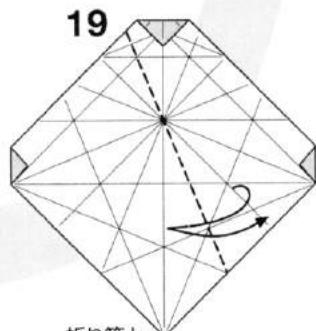
戻す
Unfold.



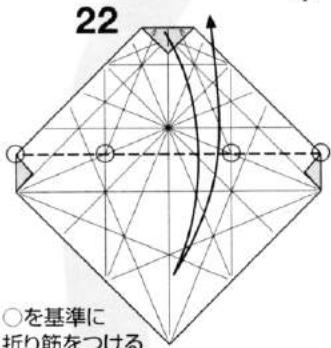
○を基準に
折り筋をつける
Fold along the lines connecting the circled points.
Unfold.



フチを
中心に
合わせて折り筋をつける
Fold the edges to the center line.
Unfold.

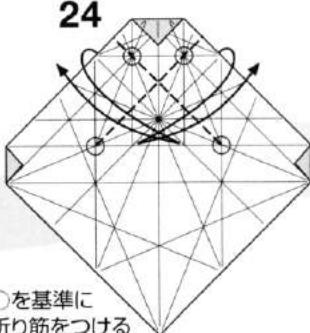


折り筋と
折り筋を合わせて
折り筋をつける
Fold angle bisectors.
Unfold.

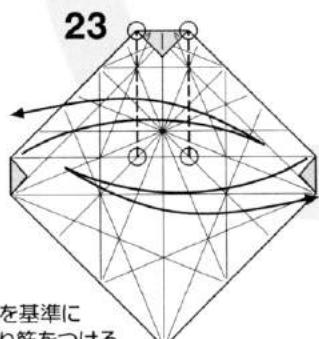


○を基準に
折り筋をつける
Fold at the circled points and unfold.

24

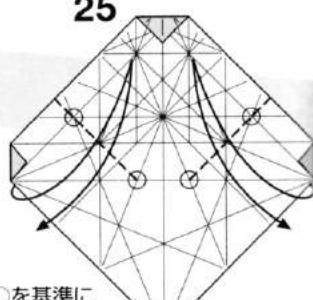


○を基準に
折り筋をつける
Fold along the lines connecting the circled points and unfold.

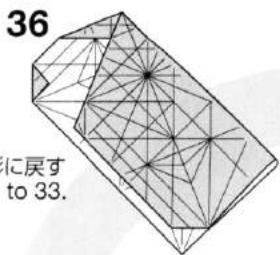


○を基準に
折り筋をつける
Fold along the lines connecting the circled points.
Unfold.

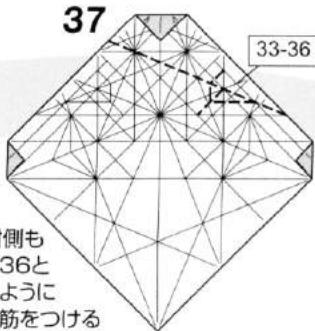
25



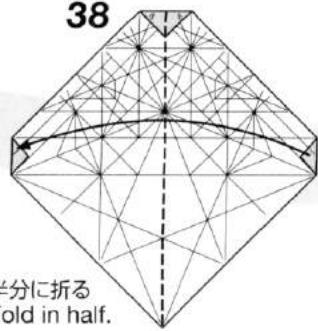
○を基準に
折り筋をつける
Fold along the lines connecting the circled points and unfold.



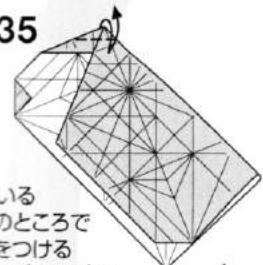
33の形に戻す
Unfold to 33.



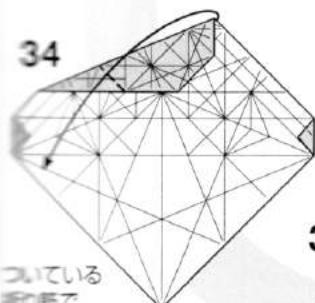
反対側も
33-36と
同じように
折り筋をつける
Repeat 33-36
on the other side.



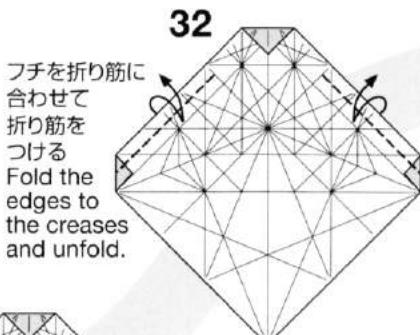
半分に折る
Fold in half.



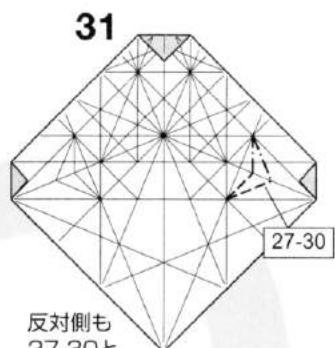
ついている
折り筋のところで
折り筋をつける
Crease along the
existing crease.



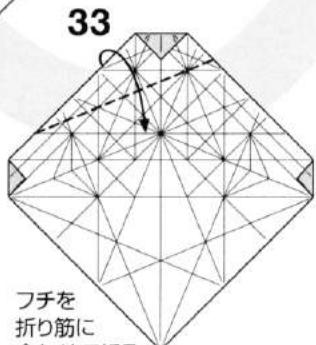
ついている
折り筋で
重なっている部分を折る
Fold down along
the existing crease.



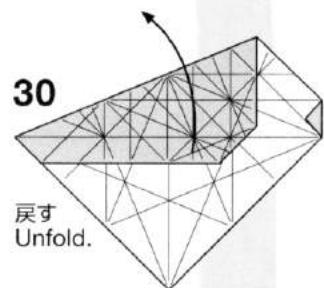
フチを折り筋に
合わせて
折り筋を
つける
Fold the
edges to
the creases
and unfold.



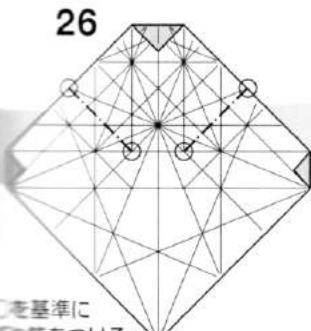
反対側も
27-30と
同じように折り筋をつける
Repeat 27-30 on the
other side.



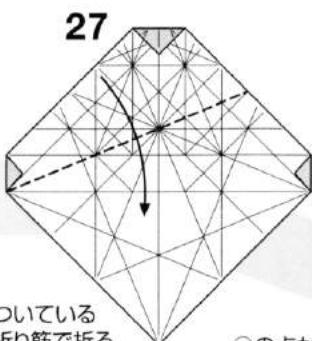
フチを
折り筋に
合わせて折る
Fold the edge to the
crease.



戻す
Unfold.



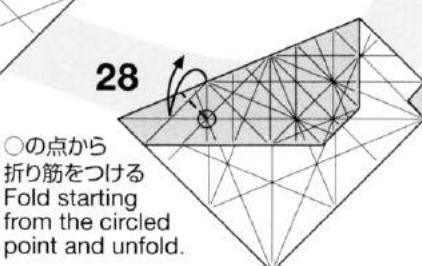
○を基準に
折り筋をつける
Fold along the lines
connecting the circled points
and unfold.



ついている
折り筋で折る
Fold down along
the crease.

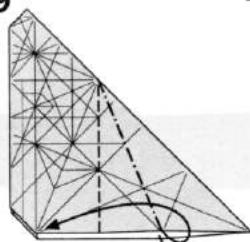


半分の角度で
折り筋をつける
Fold and unfold
at an angle bisector.



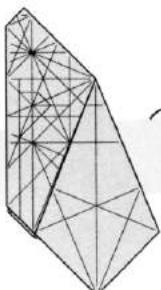
○の点から
折り筋をつける
Fold starting
from the circled
point and unfold.

39

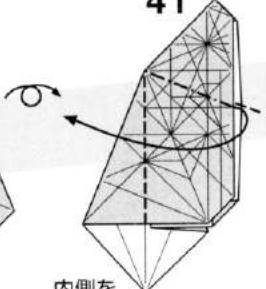


内側をひろげて
つぶすように折る
Open and squash.

40

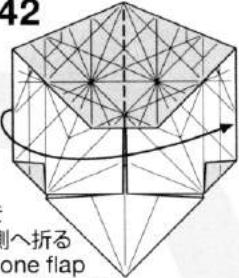


41



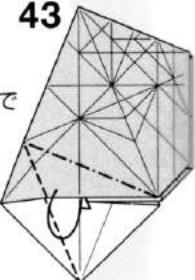
内側を
ひろげてつぶすように
折る
Open and squash.

42



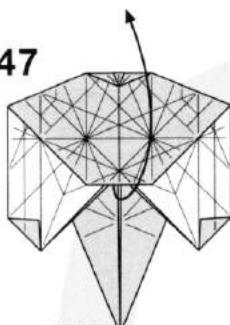
1枚を
反対側へ折る
Fold one flap
to the other side.

43



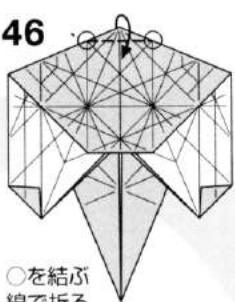
ついている折り筋で
フチを内側に
折り込む
Fold the edge
to inside using
the creases.

47



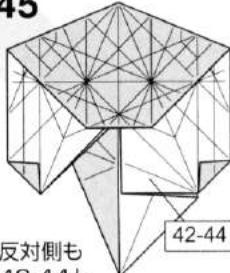
手前の
部分をひろげる
Open the layer.

46



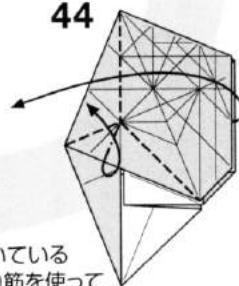
○を結ぶ
線で折る
Fold along the
line connecting
the circled points.

45



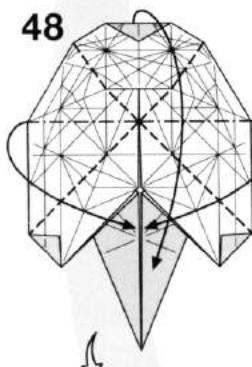
反対側も
42-44と
同じように折る
Repeat 42-44
on the other side.

44



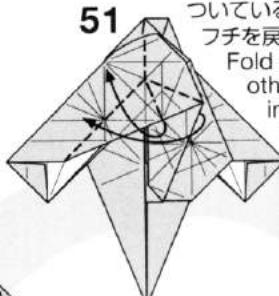
ついている
折り筋を使って
フチを戻しながら折りたたむ
Fold the layer to the
other side while inside reverse
folding at the
edge.

48



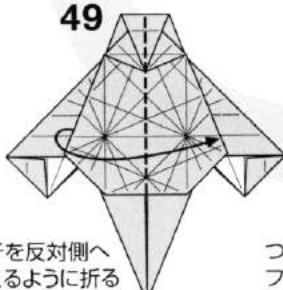
ついている
折り筋を使って
折りたたむ
Assemble using
the creases.

51



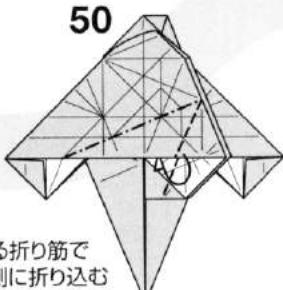
ついている折り筋を使って
フチを戻しながら折りたたむ
Fold the layer to the
other side while
inside reverse
folding at the
edge.

49



フチを反対側へ
めくるように折る
Fold the flap
to the other side.

50

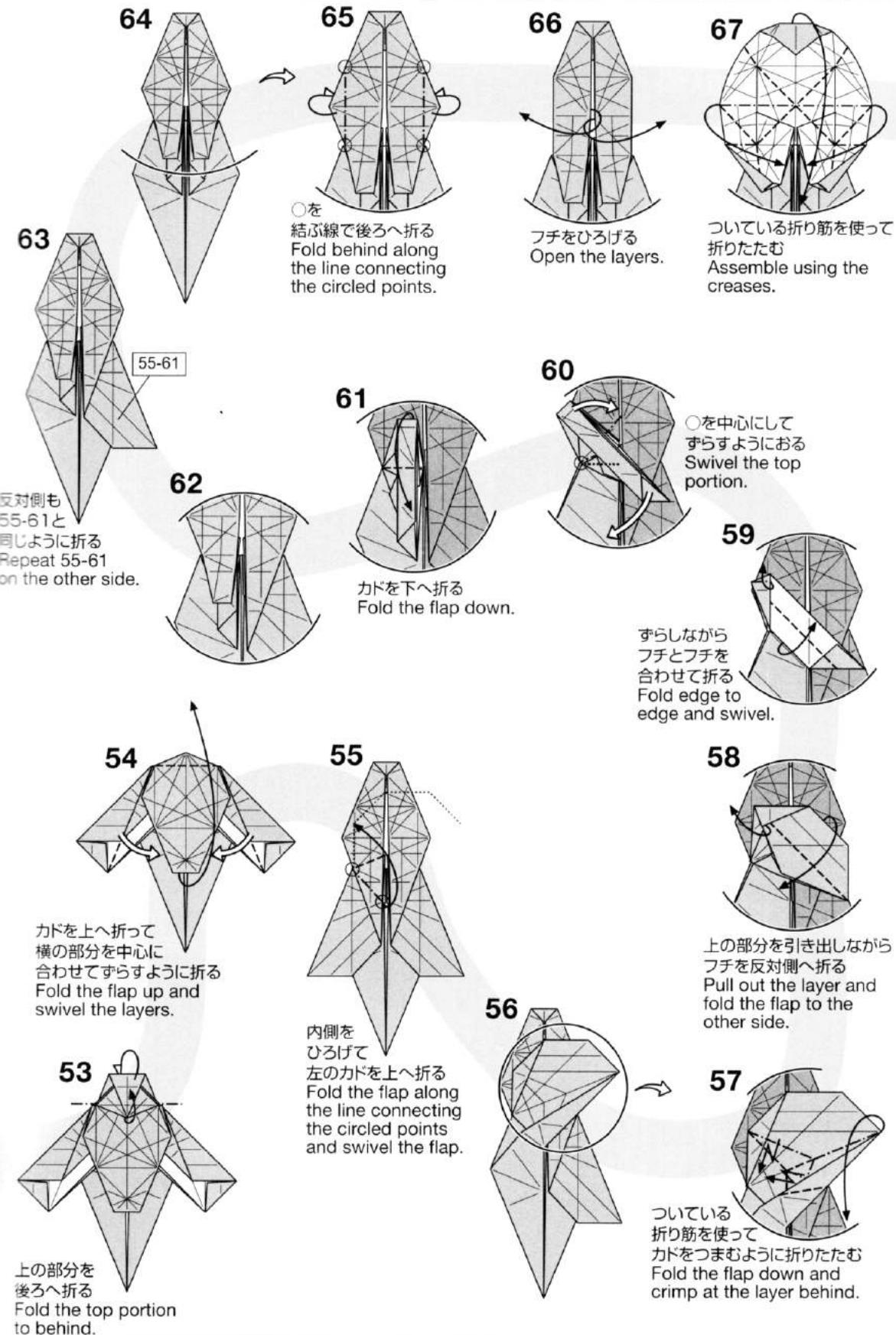


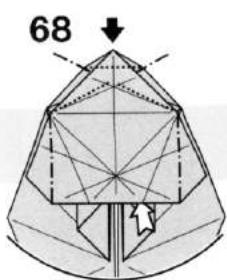
ついている折り筋で
フチを内側に折り込む
Fold the edge to
inside using the creases.

52

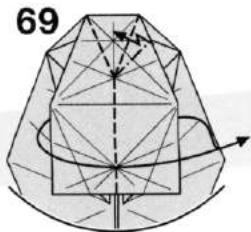


反対側も
49-51と
同じように折る
Repeat 49-51
on the other side.

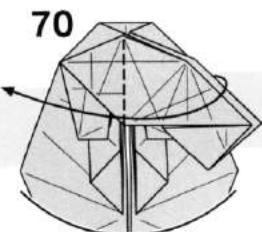




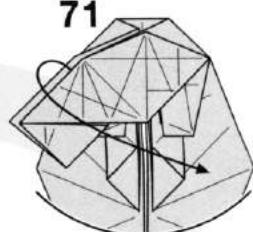
ついている折り筋を使って
内側をひろげてカドを
つぶすように折る
Pull down the top layer
and spread sink the top
corner.



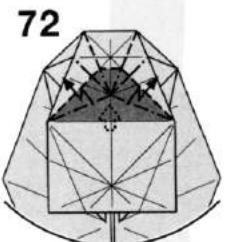
手前の部分を
つまむように折って
平らに折りたたむ
Rabbit-ear fold.



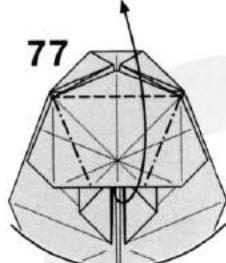
カドを反対側へ折る
Fold the flap
to the other side.



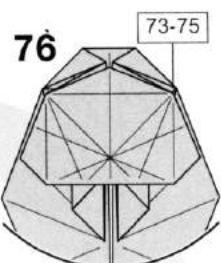
69の形にひろげる
Unfold to 69.



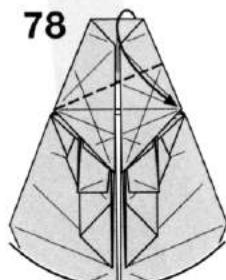
アミの部分を押し出すように
折りたたむ
Push up the flap at the
center, creating a new
corner at the point with
a dotted arrow.



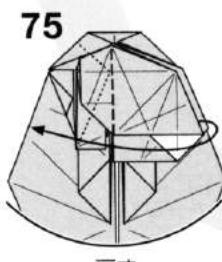
花弁折り
Petal fold.



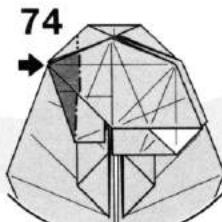
反対側も73-75と
同じように折る
Repeat 73-75 on
the other side.



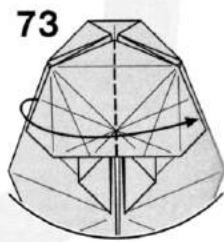
カドとカドを合わせて折る
Fold corner to corner.



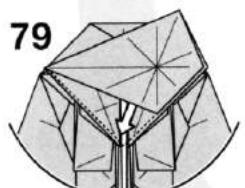
戻す
Unfold.



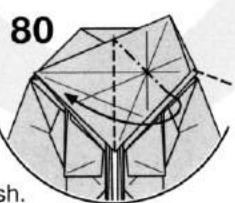
沈め折り
(Open sink)
Open sink.



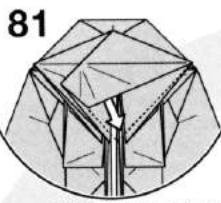
手前の1枚を
反対側へ折る
Fold the flap
to the other
side.



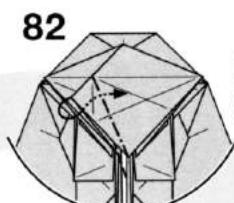
内側の紙を引き出す
Pull out the inner
layer.



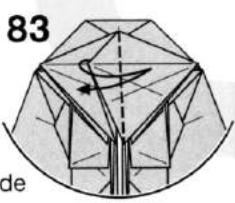
内側をひろげて
つぶすように折る
Open and squash.



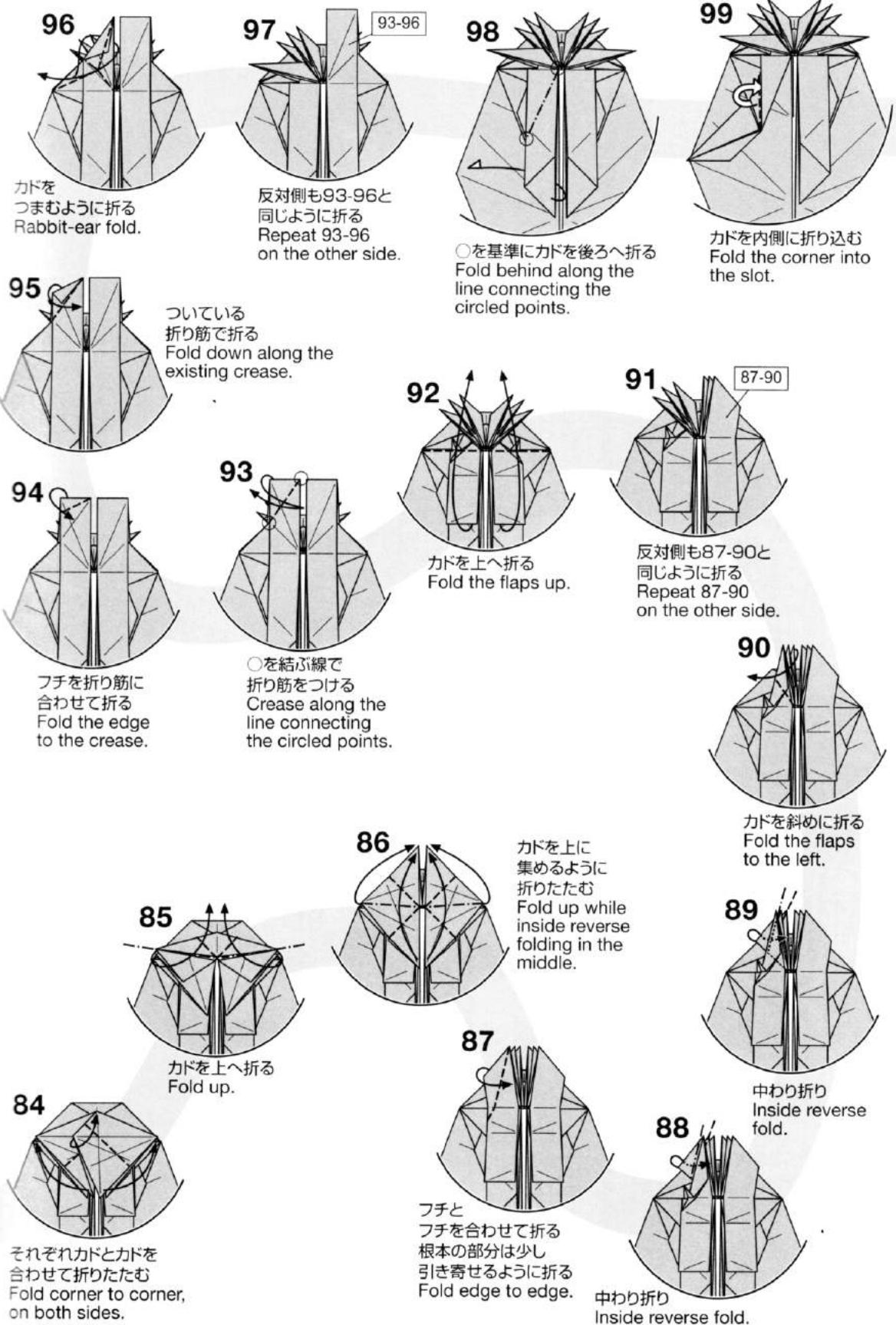
内側の紙を引き出す
Pull out the inner
layer.

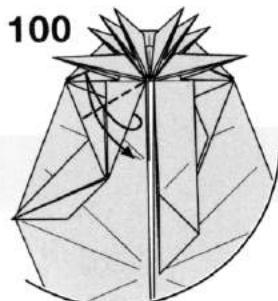


中わり折り
Inside reverse
fold.

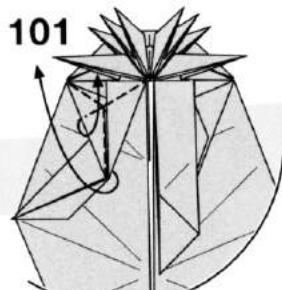


反対側へ折って
折り筋をつける
Fold the flap
to the other side
and unfold.

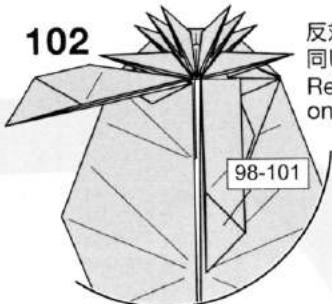




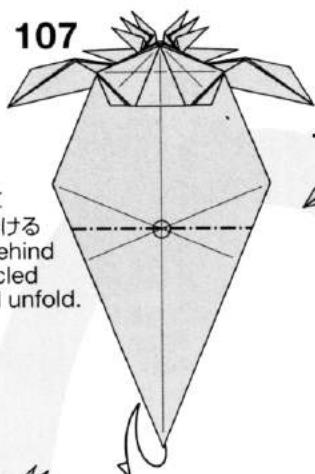
斜めに折り筋をつける
Fold the edge to the crease.
Unfold.



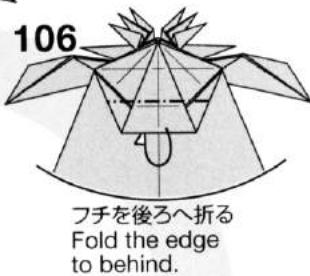
カドをつまむように折る
Rabbit-ear fold.



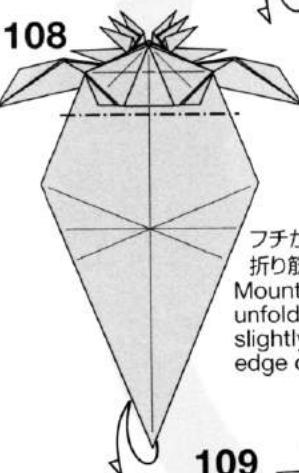
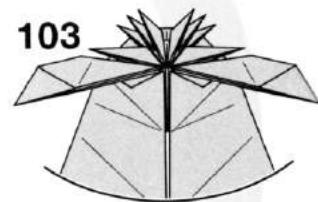
反対側も98-101と
同じように折る
Repeat 98-101
on the other side.



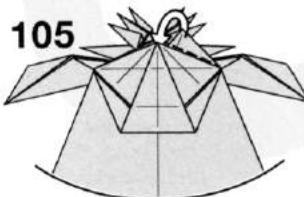
○を基準に
折り筋をつける
Fold to behind
at the circled
point and unfold.



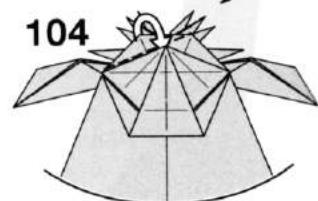
フチを後ろへ折る
Fold the edge
to behind.



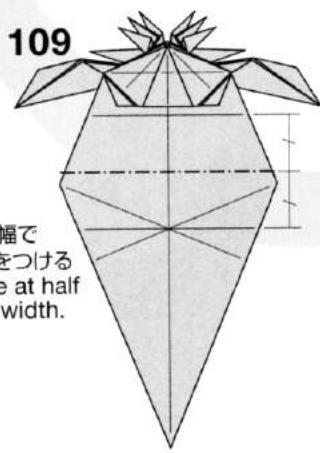
フチから少しあけて
折り筋をつける
Mountain fold and
unfold at the point
slightly below the
edge of the top layer.



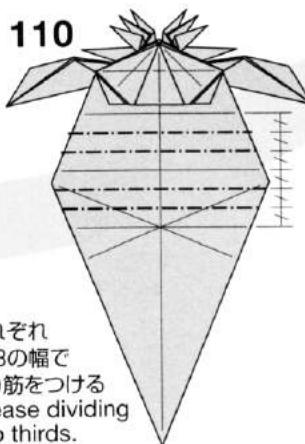
カドをすき間に折り込む
Fold the corner into
the slot.



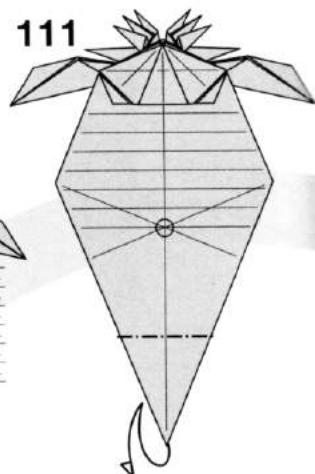
カドをすき間に折り込む
Fold the corner into
the slot.



1/2の幅で
折り筋をつける
Crease at half
of the width.



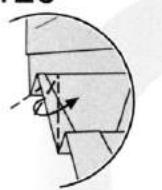
それぞれ
1/3の幅で
折り筋をつける
Crease dividing
into thirds.



カドを○に合わせて
後ろへ折り筋をつける
Fold the corner to
behind to the circled
point. Unfold.

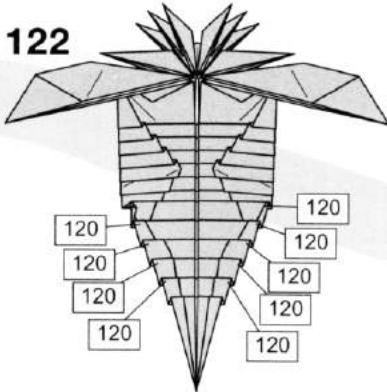
121

120

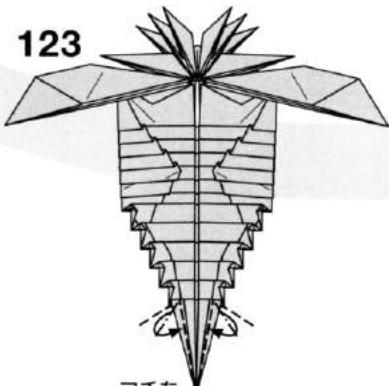


フチを引き寄せる
ように折る
Swivel fold.

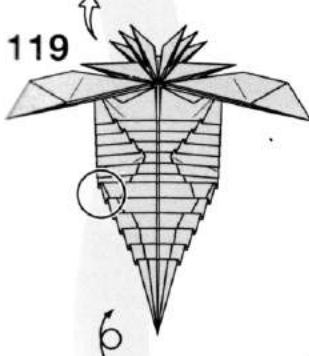
122



123

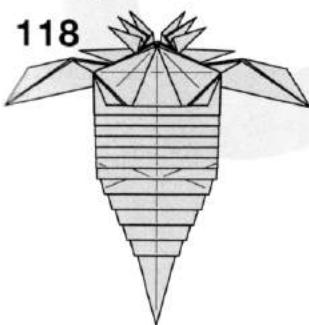


119



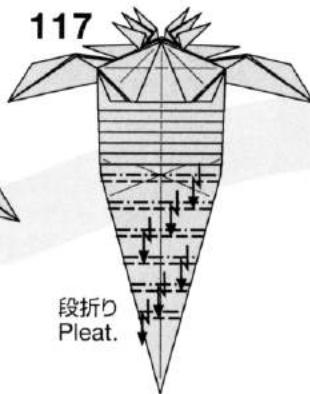
一番下のヒダ以外の部分を
120と同じように折る
Repeat 120 at the
marked clusters of layers.
Do not fold the lowest ones.

118

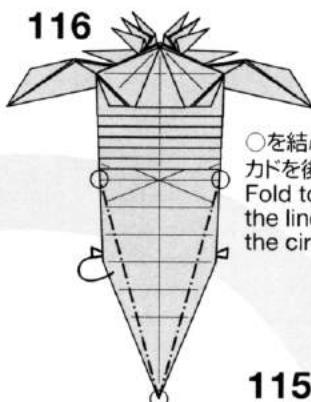


段折り
Pleat.

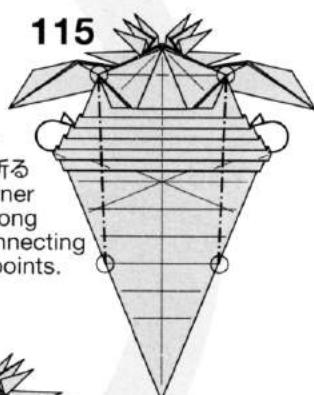
117



116

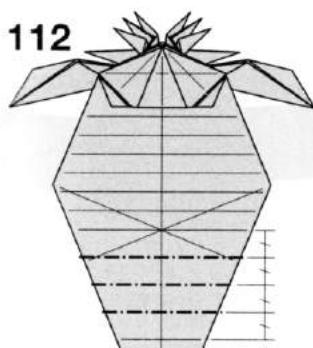


115



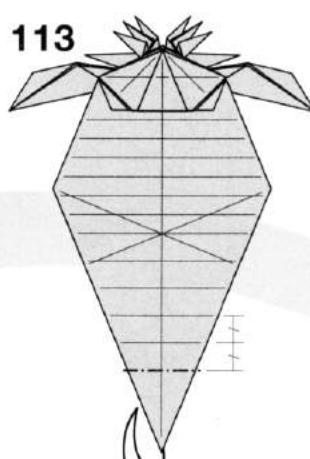
○を結ぶ線で
カドを後ろへ折る
Fold to behind along
the lines connecting
the circled points.

112



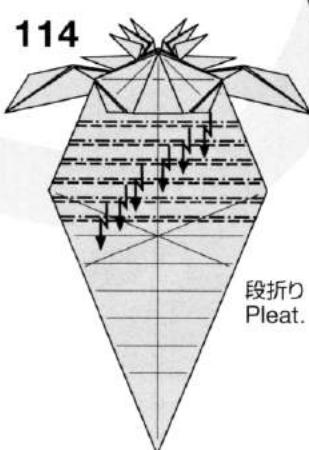
1/4の幅で
折り筋をつける
Crease dividing
into fourths.

113

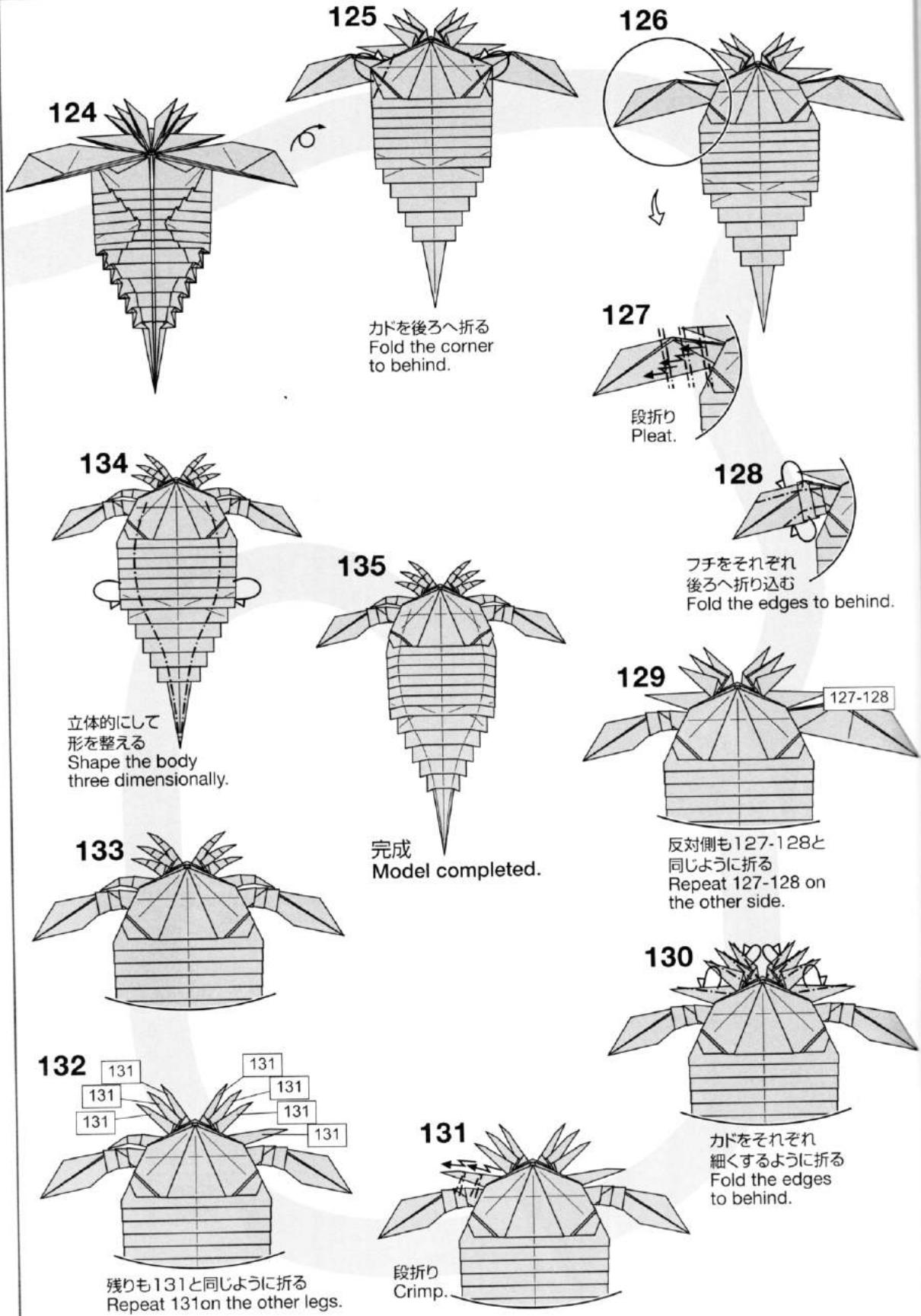


同じ幅で
折り筋をつける
Fold and unfold.
Keep the same width.

114

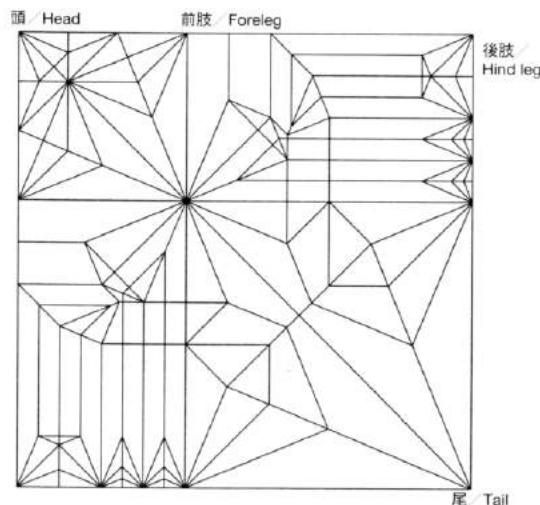
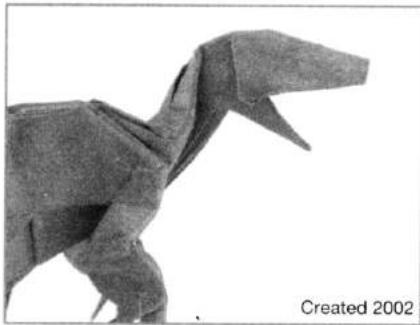


段折り
Pleat.



ディノニクス

Deinonychus



この作品は、元々は創作を始めた頃に創ったもので、最初の創作作品候補の一つでもある大変古い作品です。その後、少しづつ比率や構造を変えながらバージョンアップを繰り返し、今回折り図で紹介している形になりました。そのため、構造・造形共に、古い復元などが混ざっています。特に内部の構造は、まるで増築を重ねたような複雑な構造になります。

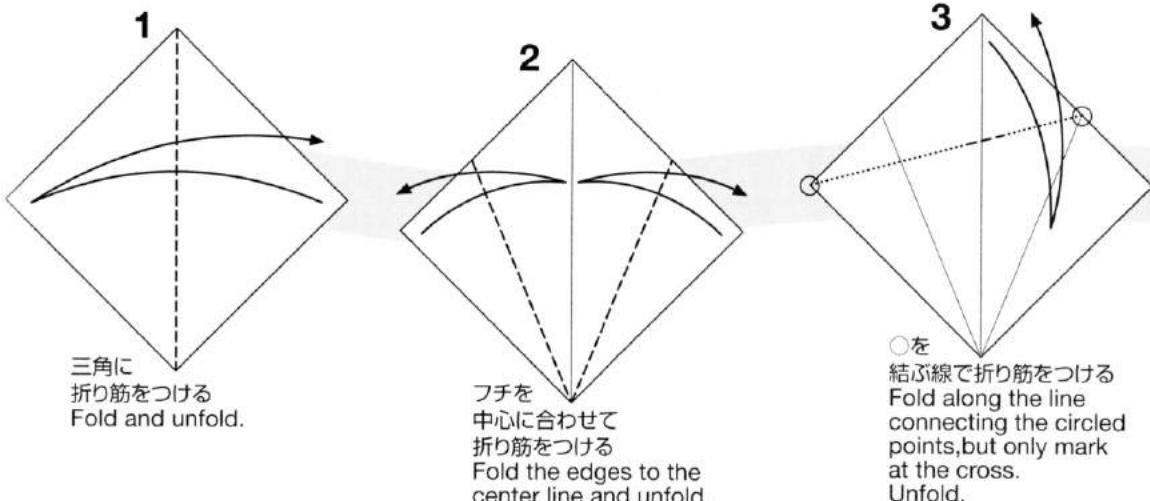
外側の構造を先に決めて、それを組み合わせるようにして創作を行う場合、内部が干渉して複雑な構造になります。ただ折りたたむだけであればどうにでもなるのですが、紙の重なりや折りやすさ、折り図の説明のしやすさなどを考えると、その都度ケースバイケースで折りたたみ方法を考え、対応するしかなさそうです。要するに例外なので、残念ながら一般化された解決方法があるわけではありませんが、経験則として周りの比率や構造に整合性があれば、ある程度きれいな折りたたみ方法が見つかる率が高いようです。

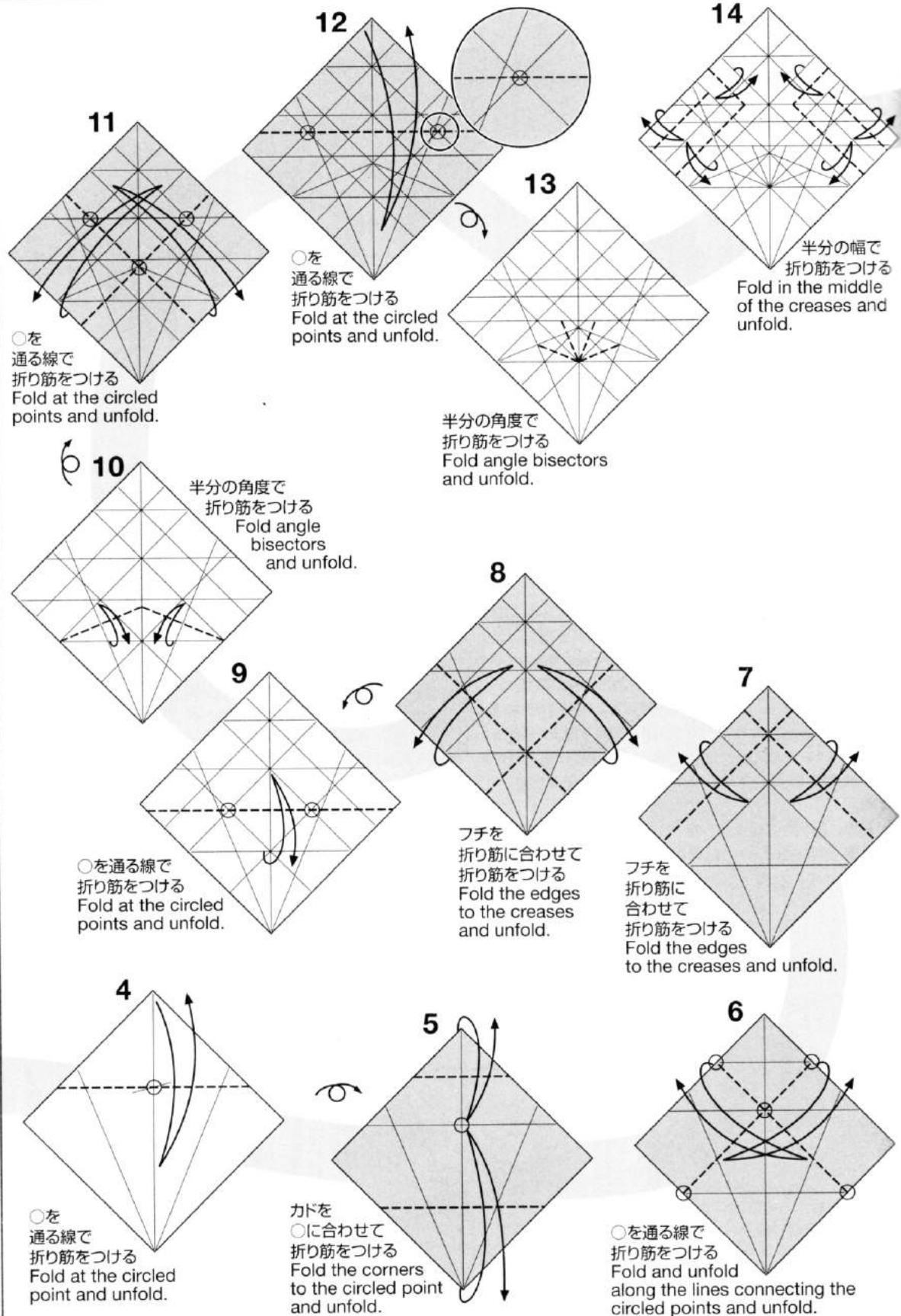
ただし、このような構造は手順で説明するのが難しく、折り図化の障害となる場合が多いのも事実です。本作では50-52の手順が該当します。ついている折り筋をうまく使って折りたたんでください。

I designed a deinonychus first when I started designing origami models. It was actually one of the candidates for my very first model. I kept updating it with different ratios of flaps and with different structures. The current version is the newest one. Because of such history, the model incorporates my old trials, in the inner layers in particular.

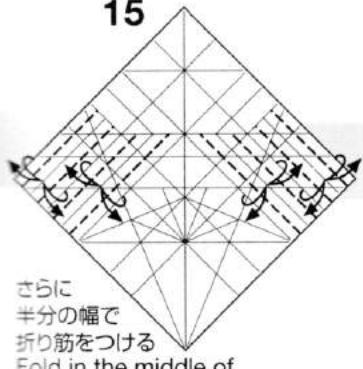
Deciding on the surface structure first often makes the inner structure complex with interference of flaps and layers. Of course we can always fold in some way, but we also need to consider ease of folding, thickness of layers and logic of diagrams. Solution in such cases is always ad hoc, so there is no universal way. To find the optimal folding steps, we need trials and errors with ratios and structures in consideration, partly relying on past experiences.

The optimal solution, however, is often hard to explain with diagrams, as in steps 50-52 of this model. Use existing crease lines and assemble the flaps in the best way you can.



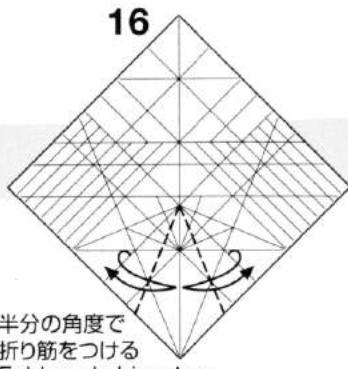


15



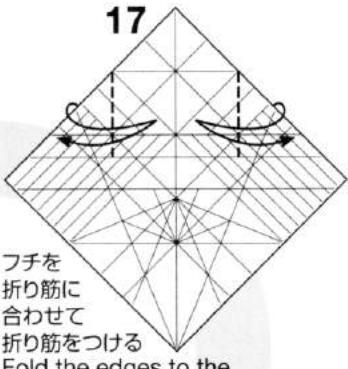
さらに
半分の幅で
折り筋をつける
Fold in the middle of
the creases and unfold.

16



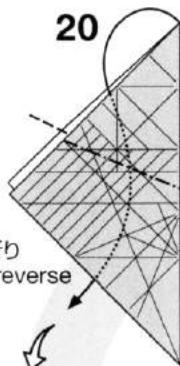
半分の角度で
折り筋をつける
Fold angle bisectors
and unfold.

17



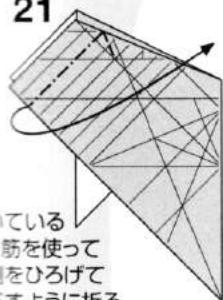
フチを
折り筋に
合わせて
折り筋をつける
Fold the edges to the
creases and unfold.

20



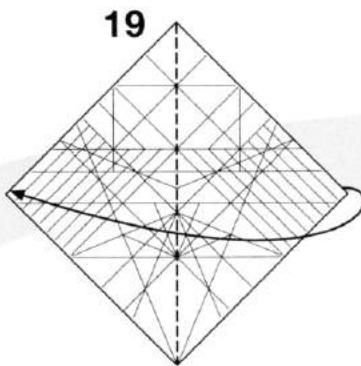
中わり折り
Inside reverse
fold.

21



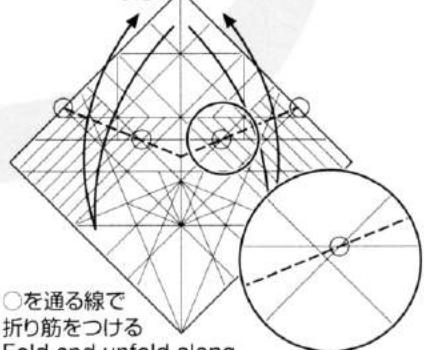
ついている
折り筋を使って
内側をひろげて
つぶすように折る
Open and squash
using the creases.

19



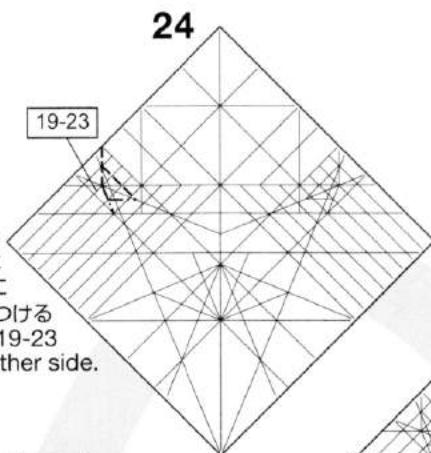
半分に折る
Fold in half.

18



○を通る線で
折り筋をつける
Fold and unfold along
the lines connecting the
circled points and unfold.

24



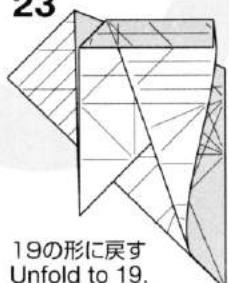
反対側も
19-23と
同じように
折り筋をつける
Repeat 19-23
on the other side.

22



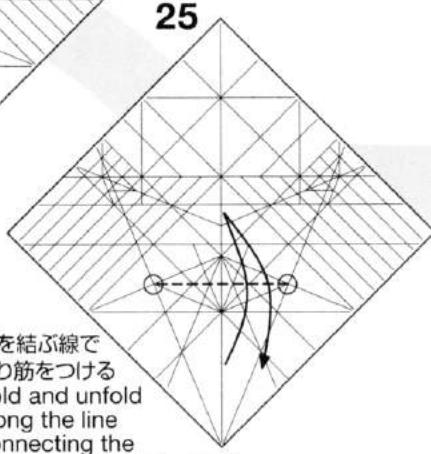
フチと
フチを合わせて
折り筋をつける
Fold and unfold
along the crease.

23

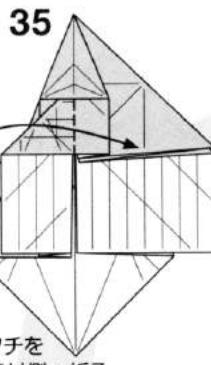


19の形に戻す
Unfold to 19.

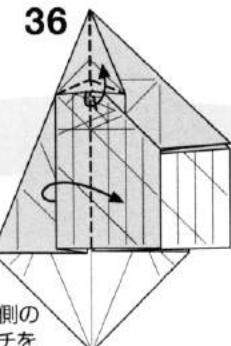
25



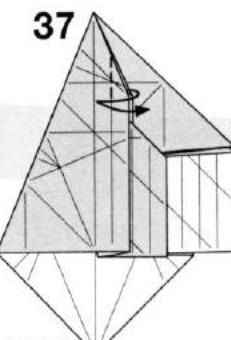
○を結ぶ線で
折り筋をつける
Fold and unfold
along the line
connecting the
circled points and unfold.



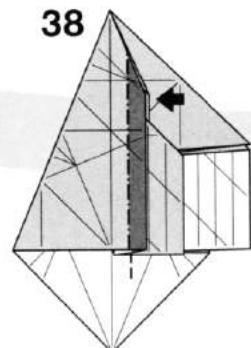
フチを
反対側へ折る
Fold the flap
to the other side.



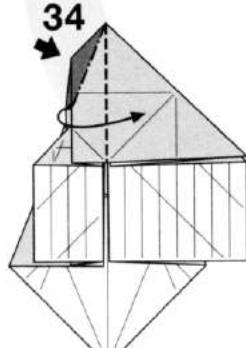
内側の
フチを
中わり折りしながら
フチを反対側へ折る
Fold the layer to the
other side while inside
reverse folding the
middle part.



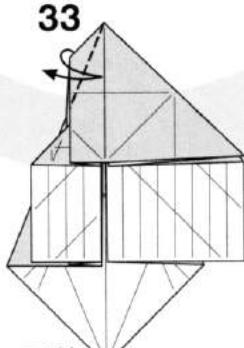
ついている
折り筋のところで
折り筋をつけ直す
Fold and unfold
along the crease.



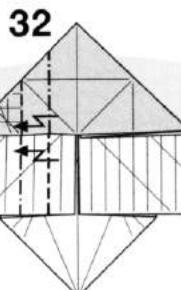
沈め折り
(Closed sink)
Closed sink.



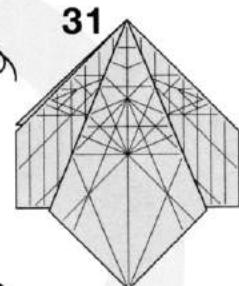
カドをひろげて
つぶすように折る
Open the corner
and squash.



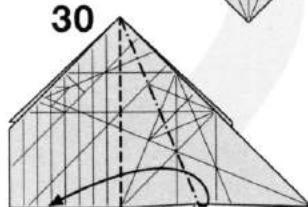
フチを
中心に合わせて
折り筋をつける
Fold the edge
to the center line
and unfold.



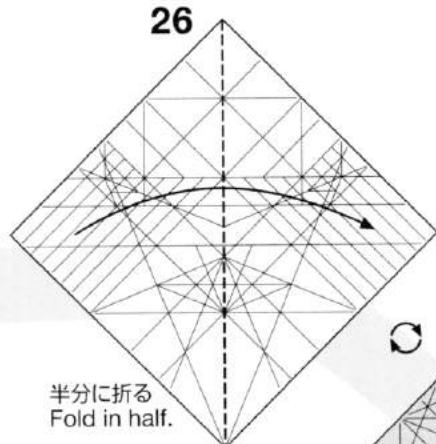
ついている折り筋で
両側で段折り
Crimp.



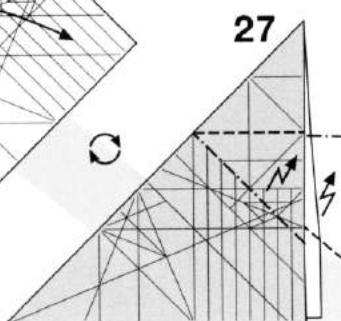
30



内側をひろげて
つぶすように折る
Open and squash.

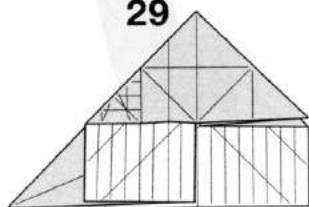


半分に折る
Fold in half.

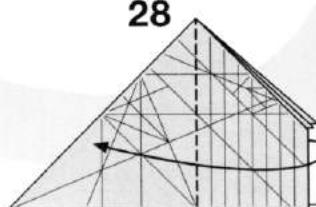


ついている折り筋で
両側で段折り
Crimp inside.

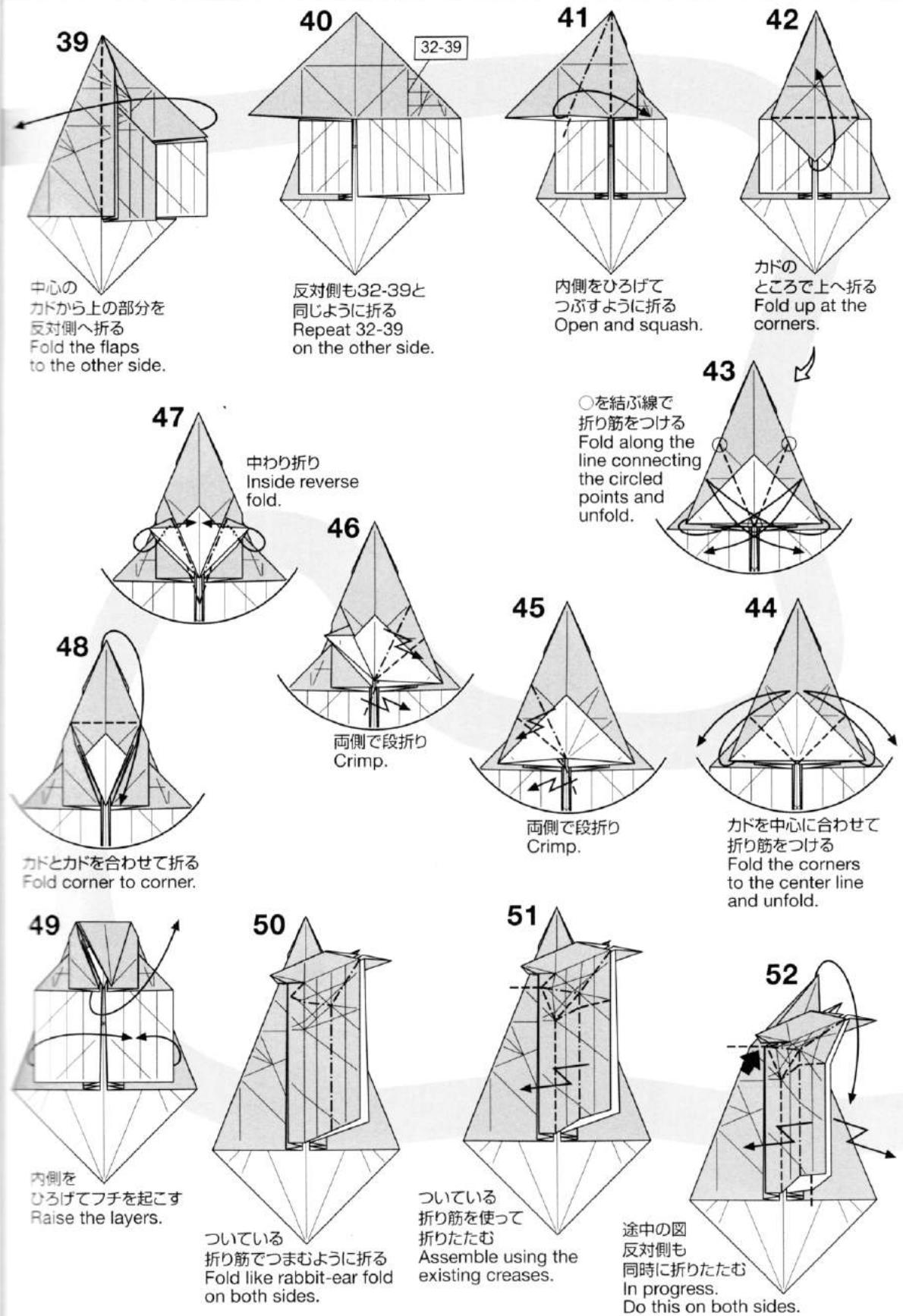
29



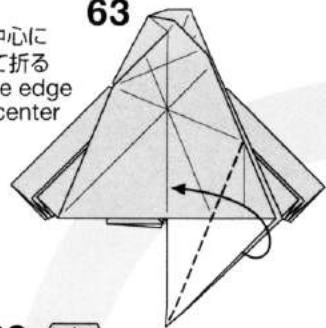
28



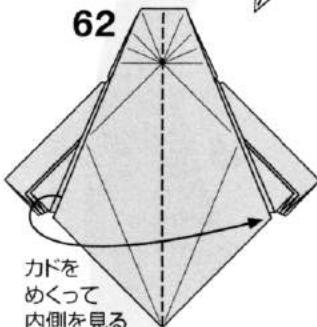
手前の1枚を
反対側へ折る
Fold the layer
to the other side.



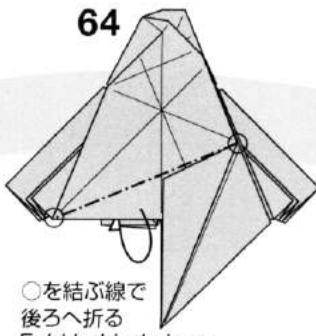
フチを中心
合わせて折る
Fold the edge
to the center
line.



62

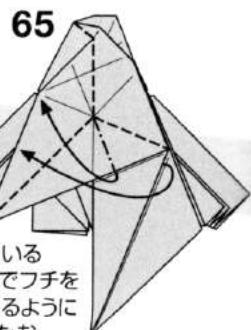


カドを
めくって
内側を見る
Open the flap
to the other side.



64

○を結ぶ線で
後ろへ折る
Fold behind along
the line connecting
the circled points.

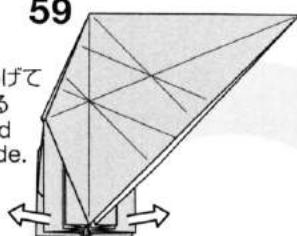


65

ついている
折り筋でフチを
合わせるように
折りたたむ
Fold edge to edge
and close the flap.

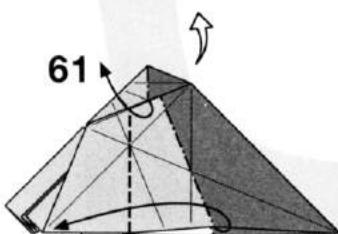
59

カドをひろげて
内側を見る
Open and
look inside.



58

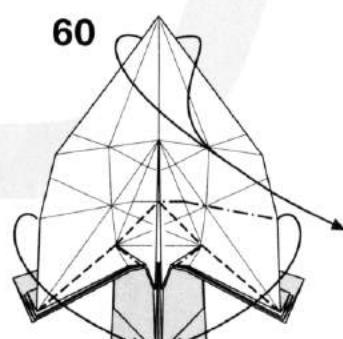
カドを下へ折る
Fold the layers
down.



61

内側をひろげて■の部分を
平らにつぶすように折る
Open and squash
the darkened area.

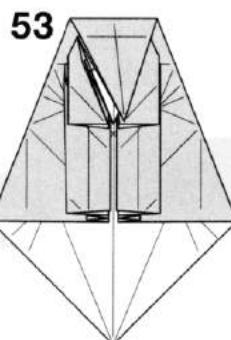
60



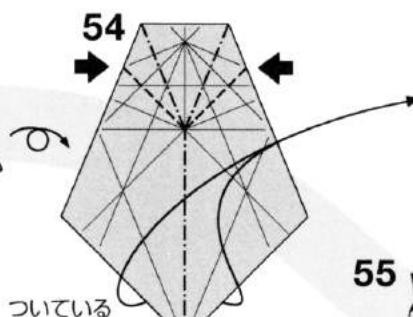
ついている折り筋を使って
折りたたむ
Assemble and flatten
using the creases.

57

カドを
合わせて
折りたたむ
Fold corner to corner
and flatten.



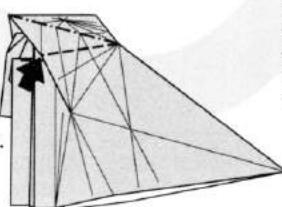
53



54

ついている
折り筋を使って
両側を押し込みながら
カドをつまむように折る
Push in the sides.
Fold and raise the layers
using the creases.

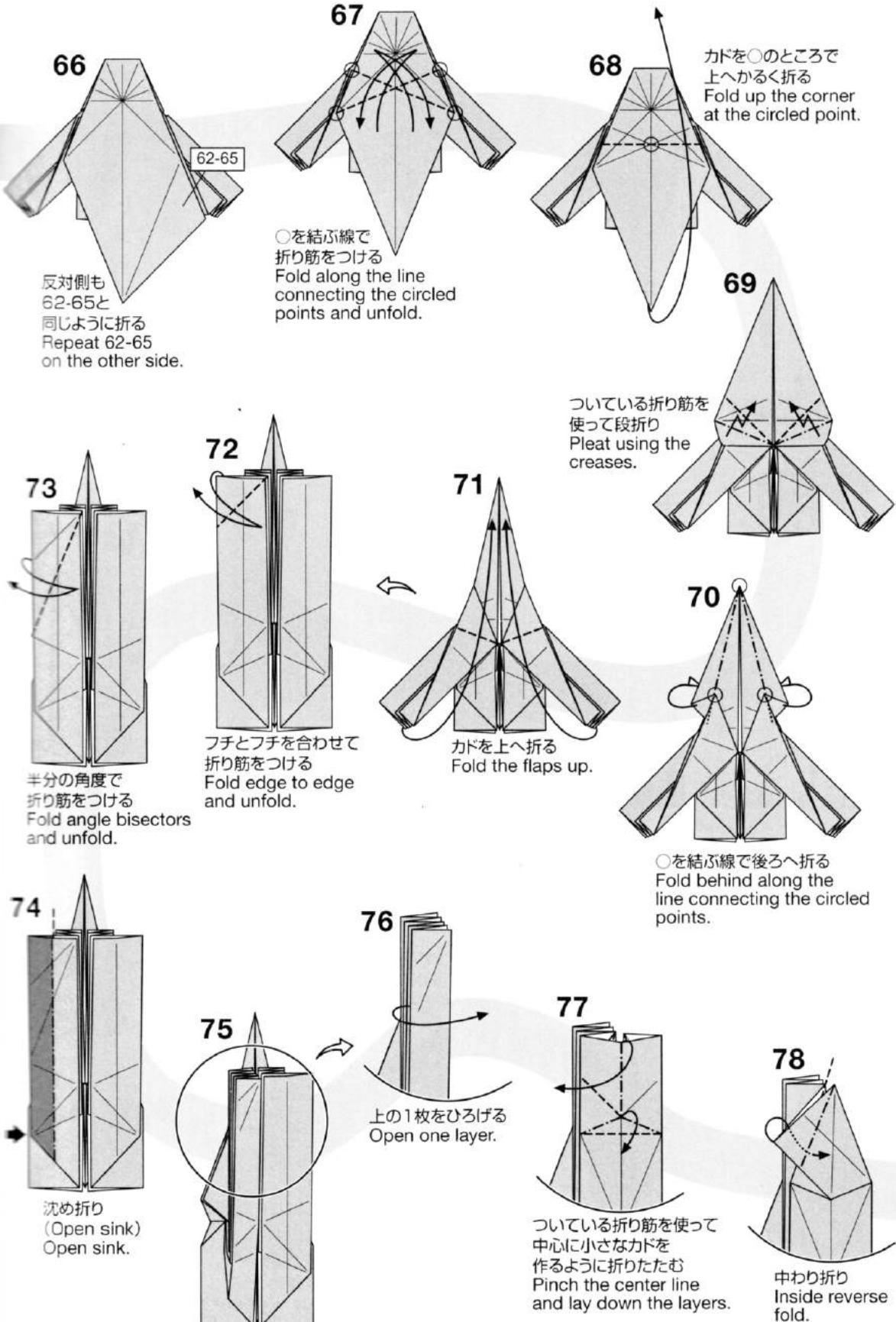
56

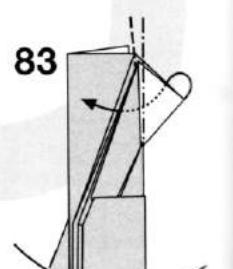
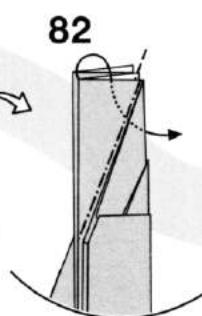
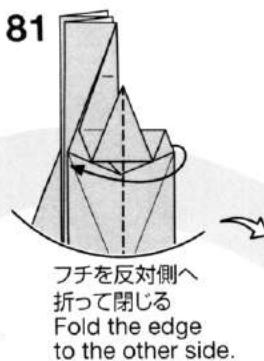
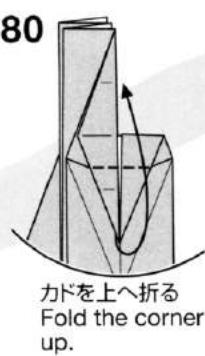
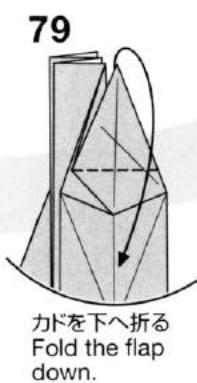
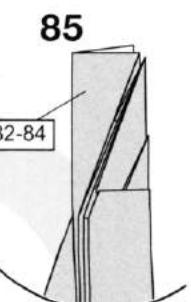
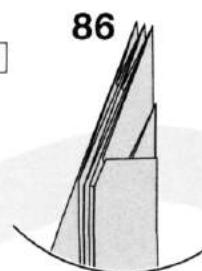
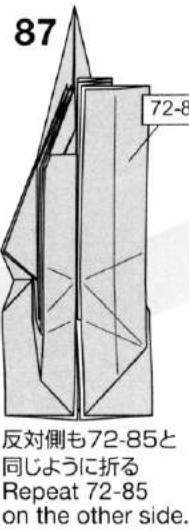
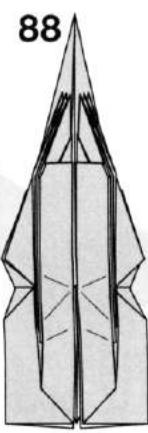
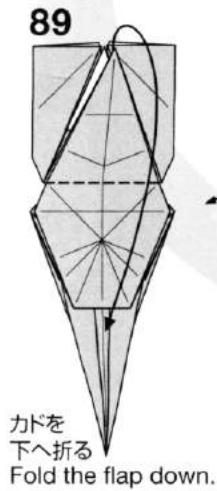
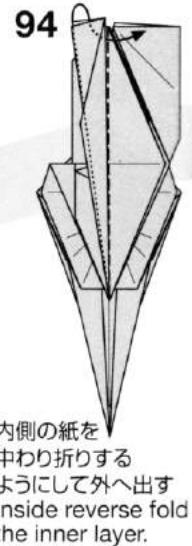
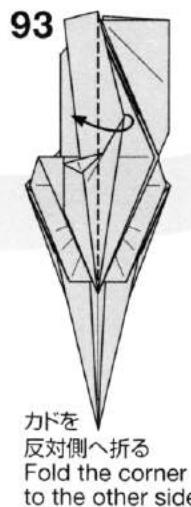
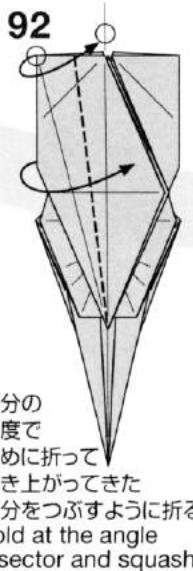
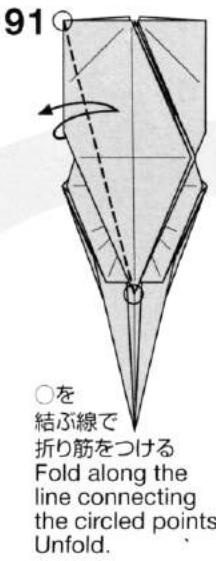
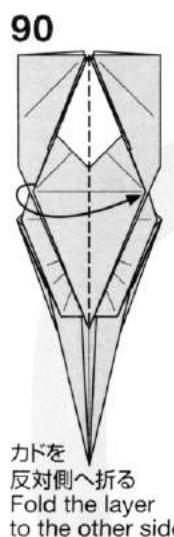


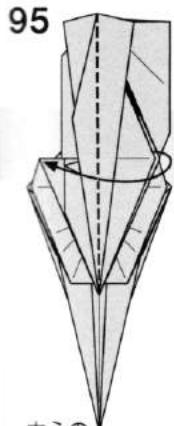
55

途中の図
In progress.

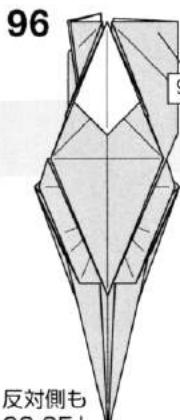
ついている折り筋を
使って折りたたむ
反対側も同時に折る
Assemble using the
creases. Do this on
both sides.



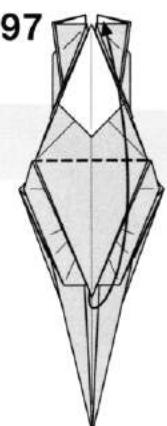




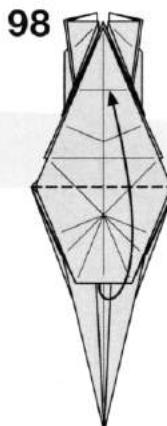
中心のすき間をひろげてヒダを戻す
Fold the flaps to the other side.



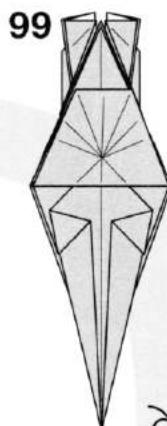
90-95
反対側も90-95と同じように折る
Repeat 90-95 on the other side.



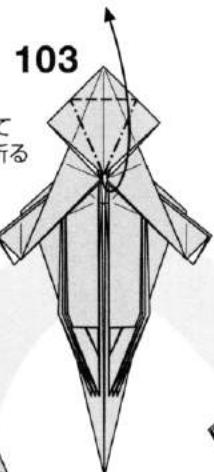
カドを上へ折る
Fold the flap up.



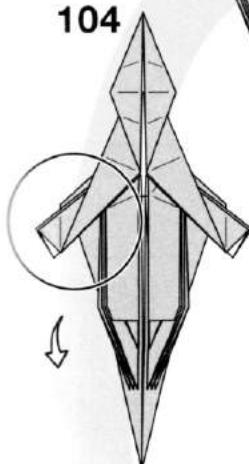
カドを上へ折る
Fold the flap up.



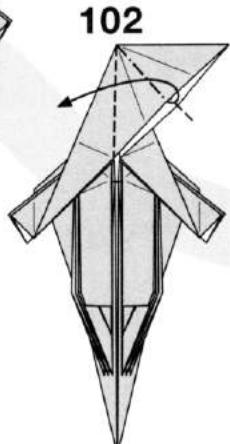
カドを斜めに折る
Fold the flaps down.



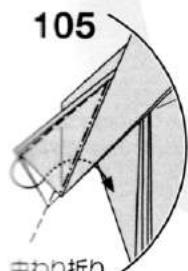
かぶさっている部分をひろげる
Unfold the top layer.



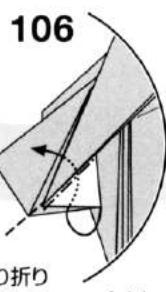
内側をひろげてつぶすように折る
(花弁折り)
Petal fold.



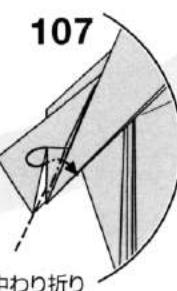
内側をひろげてつぶすように折る
Open and squash.



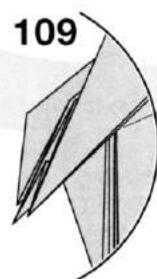
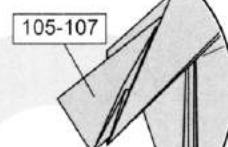
中わり折り
Inside reverse fold.



中わり折り
Inside reverse fold.

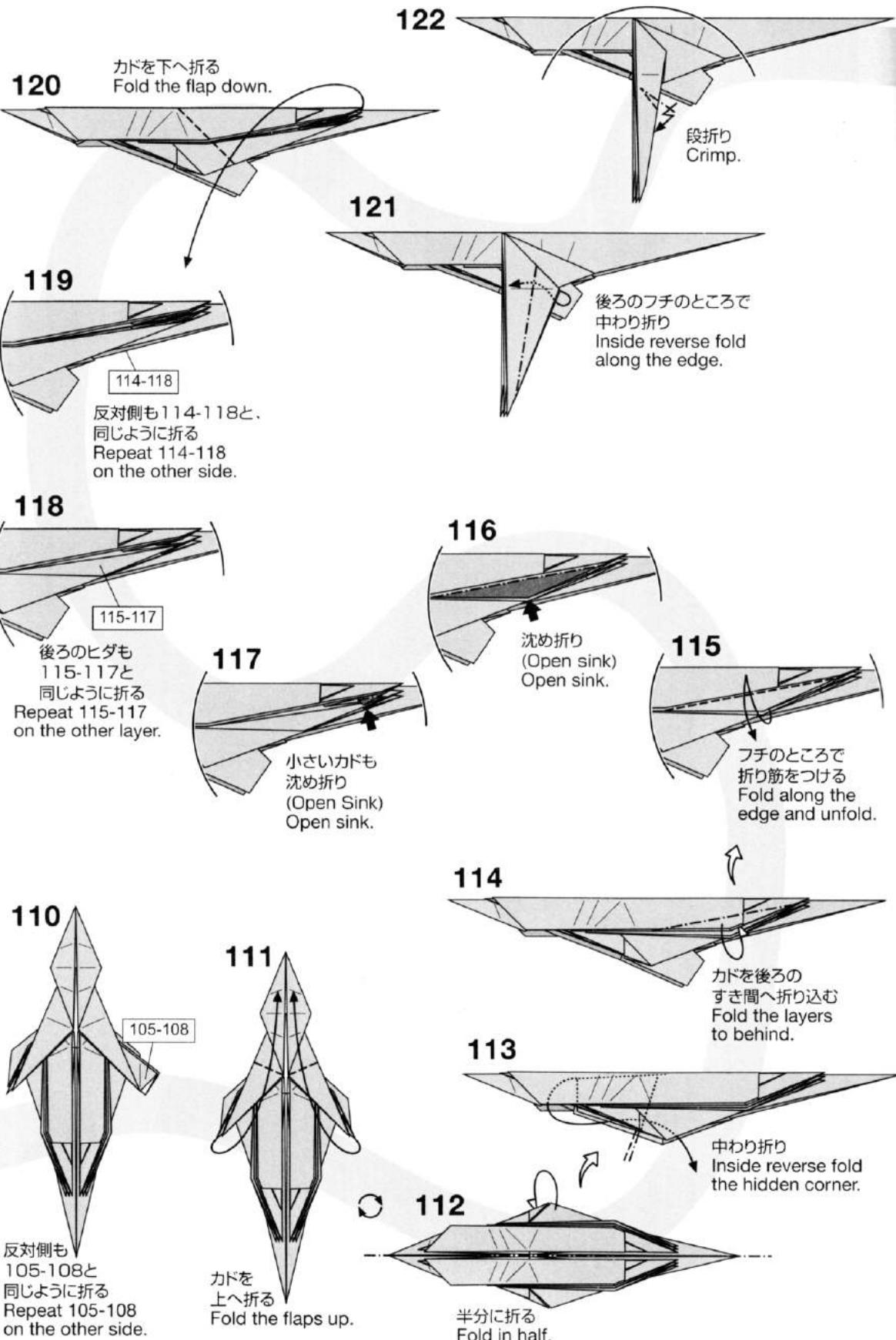


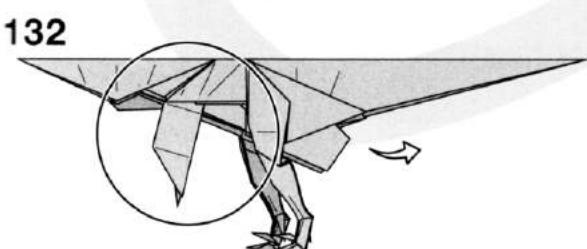
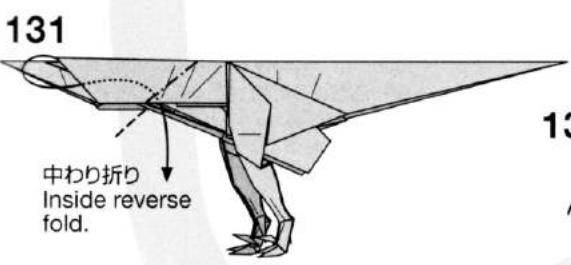
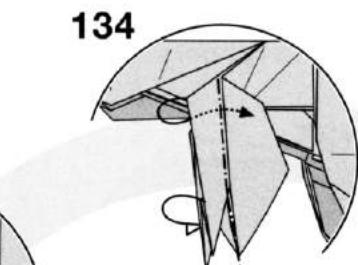
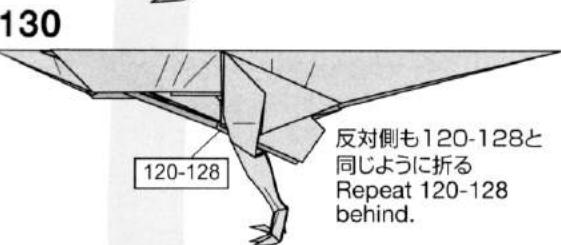
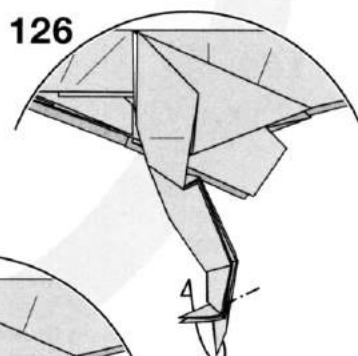
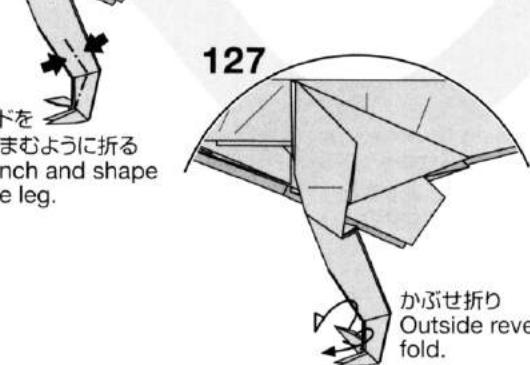
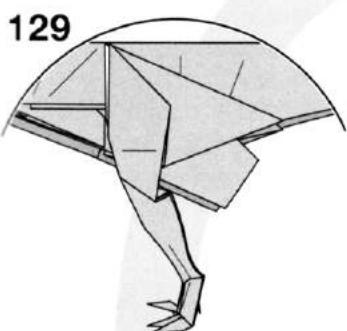
108

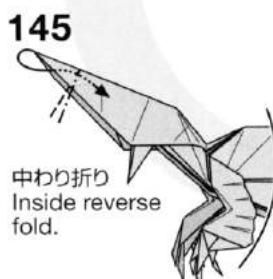
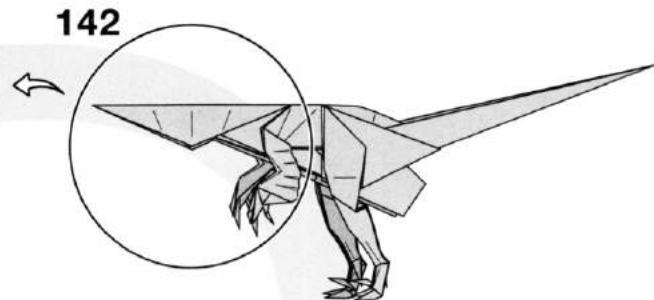
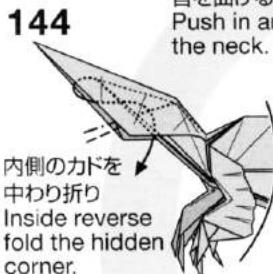


105-107

後のヒダも105-107と同じように折る
Repeat 105-107 on the other layer.

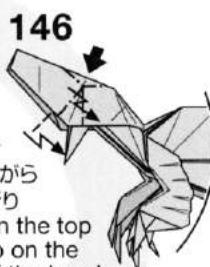






■の部分を
押し込むように折って
尾を細くする

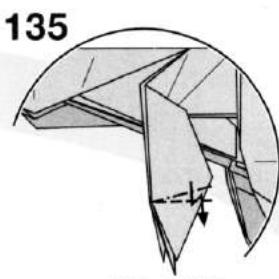
Push in and narrow
the tail.



上の部分を
押し込みながら
両側で段折り
Push in on the top
and crimp on the
bottom of the head.



完成
Model completed.



後ろへ段折り
Pleat behind.



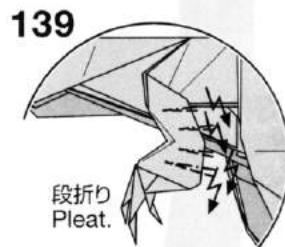
カドを細くする
ように折る
Swivel fold.



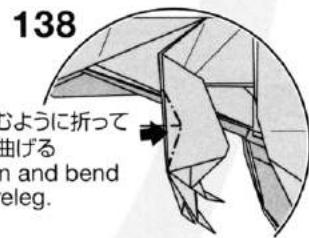
それぞれカドを
後ろへ折る
Fold the corners
to behind.



反対側も
131-139と同じように折る
Repeat 131-139 behind.



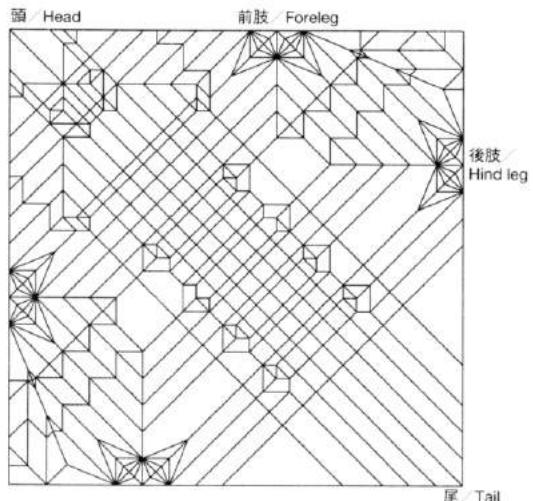
段折り
Pleat.



押し込むように折って
前肢を曲げる
Push in and bend
the foreleg.

スピノサウルス

Spinosaurus

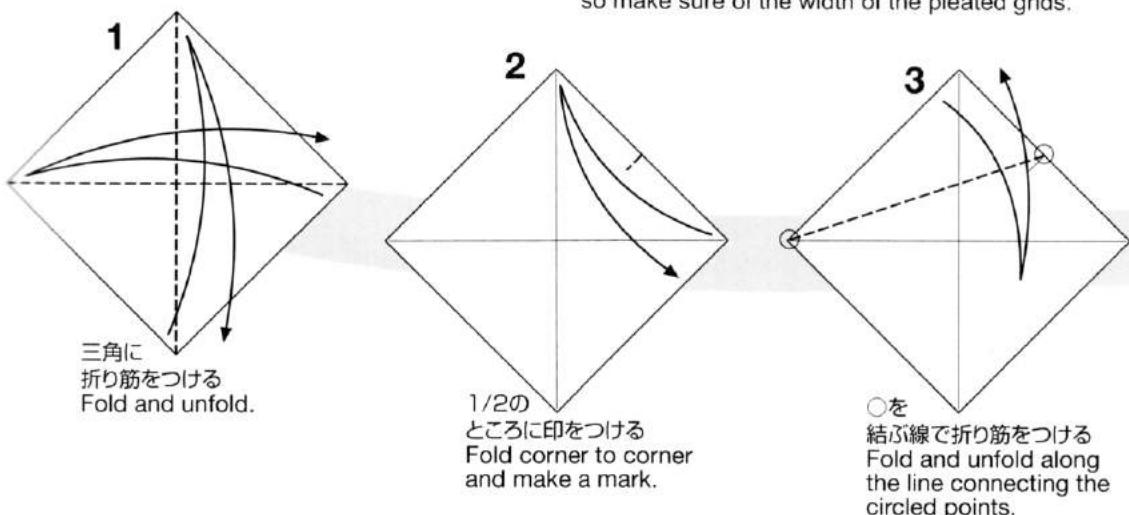


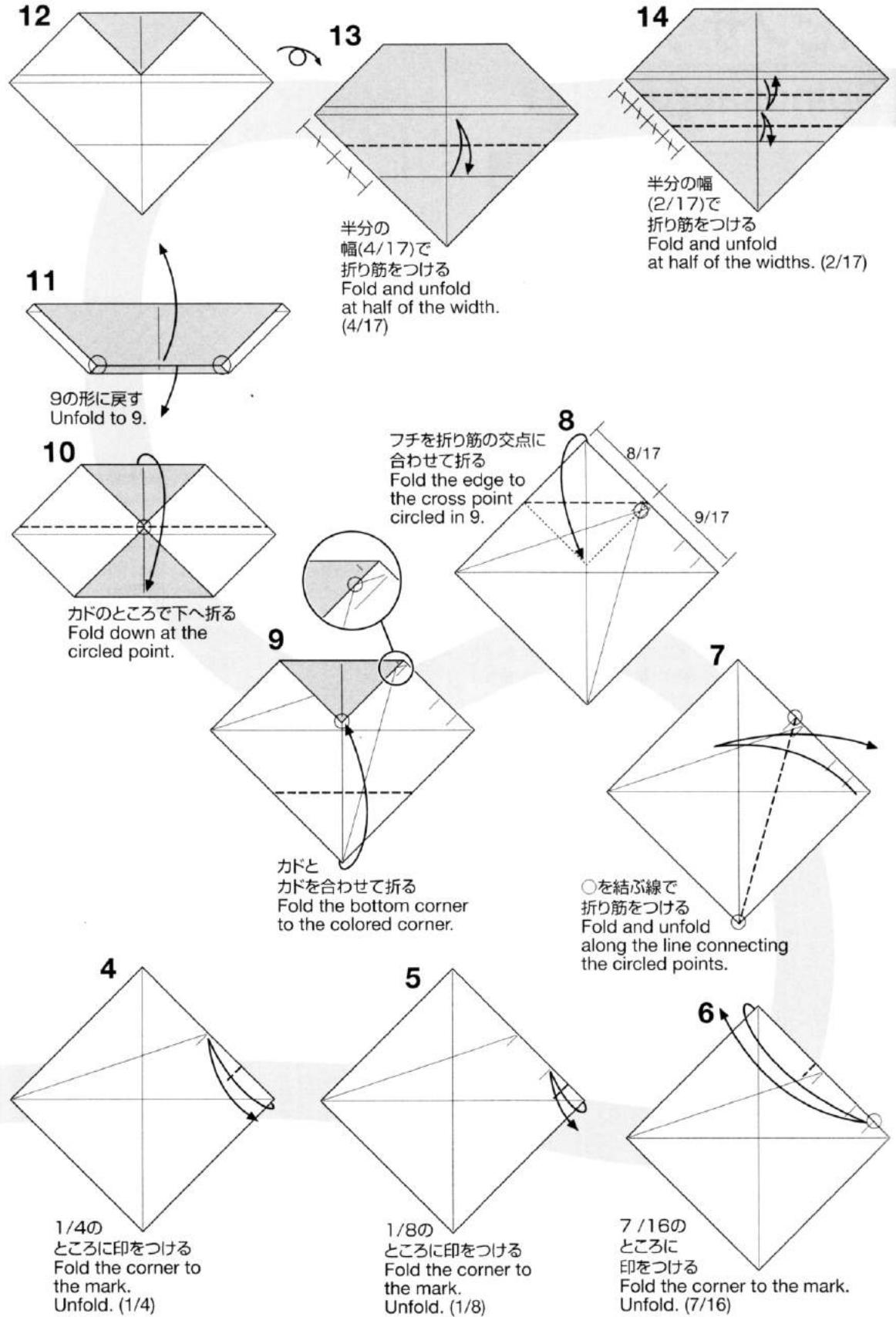
この作品は、ウマと同じようにヒダの使い方を意識して創作した作品です。同じ題材・技法を使った作例には吉野一生氏と川畑文昭氏の作品がありますが、本作ではヒダを使った放射状の形を、周辺に大きく干渉しないように調整して蛇腹折りの構造に埋め込むことで、両氏の作品との差別化と、ヒダを使いやくするという新しい挑戦を試みました。同じ表現技法を使ってい るウマは22.5度系の構造との融合を目指したものですが、本作と合わせて比較してみると、平行なヒダを折り出しやすく自由度の高い蛇腹構造は、この技法との相性がよいのかもしれません。また、蛇腹はそのままでは使用する角度が限られているため、特徴的な形や多彩な角度を利用できるのは大変魅力的であるといえるでしょう。

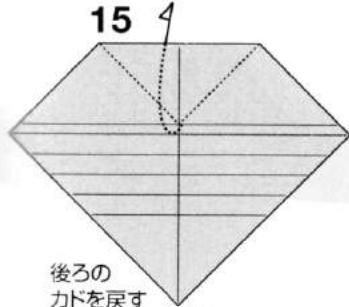
この作品の構造は17等分の蛇腹を基本に作られています。折り図もまず比の折り出しや等分から始まるので、17等分を意識して進めるといいでしよう。また、特に縦の折り筋をつける工程は変則的な順番で行うため、1マスの幅を確認しながら進めてください。

This model was designed with the optimal use of pleated areas in mind, like the horse in this book. Issei Yoshino and Fumiaki Kawahata also have models with the same motif and similar ideas, but I tried making my design distinctive from theirs with easier manipulation of pleats. The horse tried to incorporate the pleated structure inside the 22.5 degree based structure, and the pleats work with it in this model as well, as the pleated edges have optimal room for further manipulation by incorporating them into a 22.5 based model. Pleats themselves are not that intriguing because the angles of the edges are mostly fixed, so making use of shapes with angles along with pleats is very attractive for designing folders.

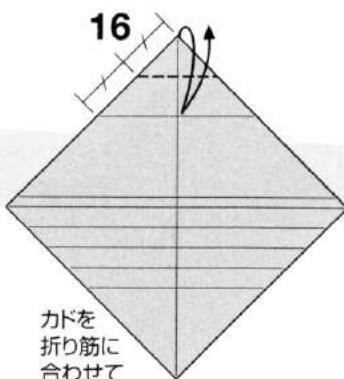
The model is based on pleats at the seventeenthths of the width of the sheet. The folding steps start with division into seventeenthths, which you will have to keep in mind when you fold it. The steps for the vertical crease lines are not straightforward in order, so make sure of the width of the pleated grids.



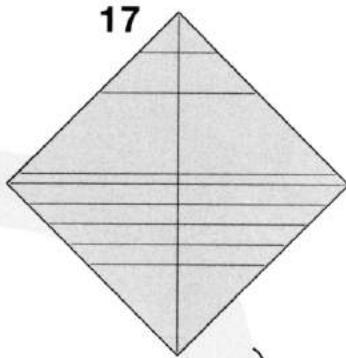




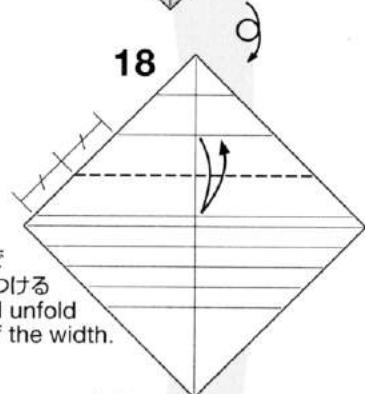
後ろの
カドを戻す
Unfold the hidden
corner.



カドを
折り筋に
合わせて
折り筋をつける(4/17)
Fold the corner to the
crease and unfold. (4/17)

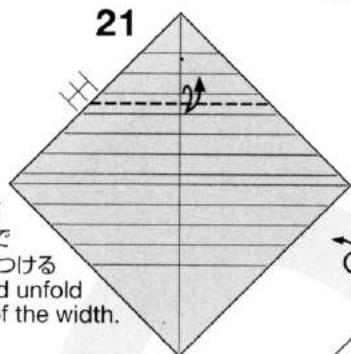


18



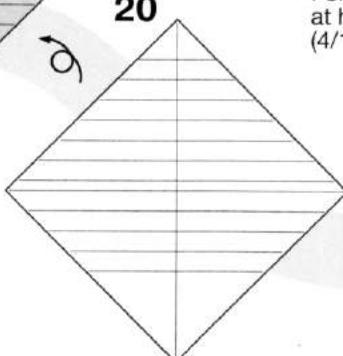
半分の幅
(4/17)で
折り筋をつくる
Fold and unfold
at half of the width.
(4/17)

21

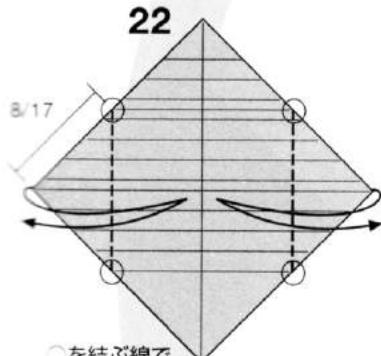


半分の幅
(1/17)で
折り筋をつくる
Fold and unfold
at half of the width.
(1/17)

20

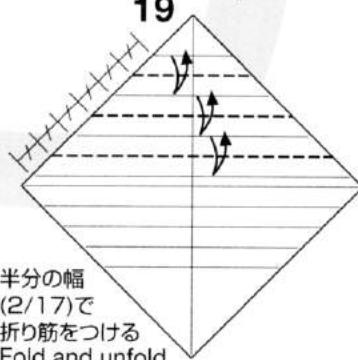


22



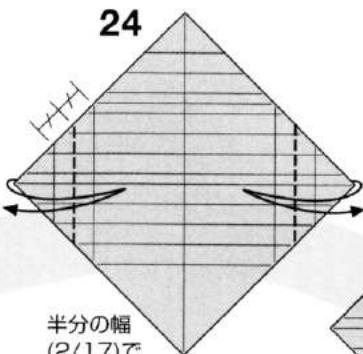
○を結ぶ線で
折り筋をつくる(8/17)
Fold and unfold along
the line connecting the
circled points. (8/17)

19

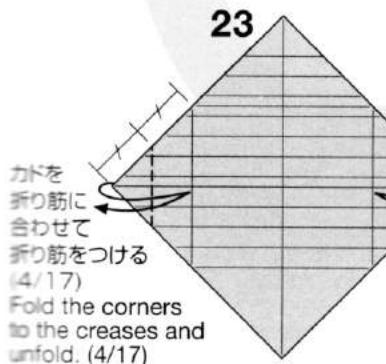


半分の幅
(2/17)で
折り筋をつくる
Fold and unfold
at half of the widths. (2/17)

24

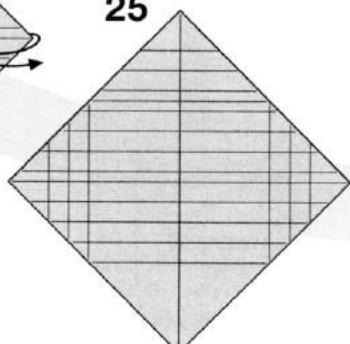


半分の幅
(2/17)で
折り筋をつくる
Fold and unfold
at half of the widths.
(2/17)



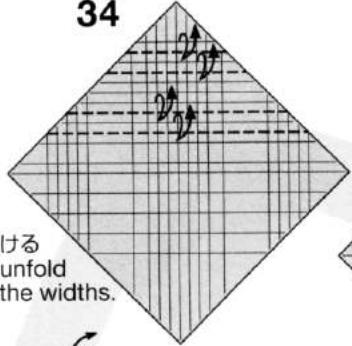
カドを
折り筋に
合わせて
折り筋をつくる
(4/17)
Fold the corners
to the creases and
unfold. (4/17)

25



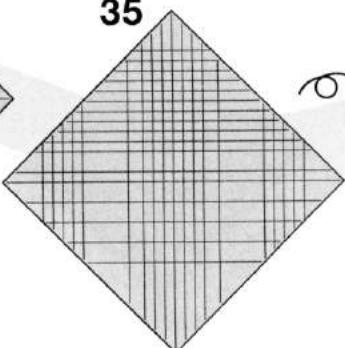
スピノサウルス

34

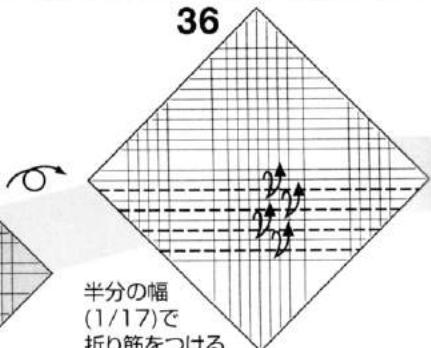


半分の幅
(1/17)で
折り筋をつける
Fold and unfold
at half of the widths.
(1/17)

35

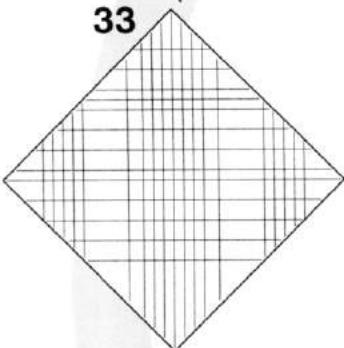


36

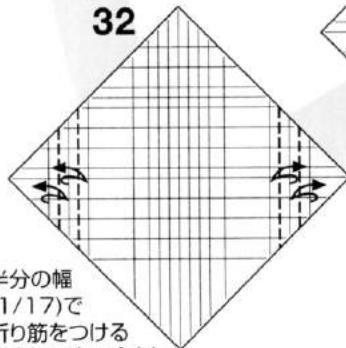


半分の幅
(1/17)で
折り筋をつける
Fold and unfold
at half of the widths. (1/17)

33

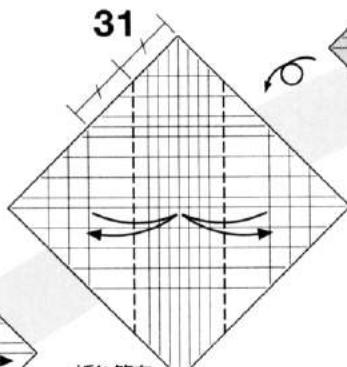


32



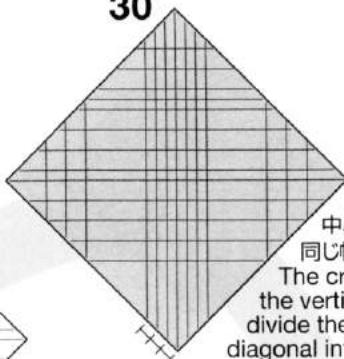
半分の幅
(1/17)で
折り筋をつける
Fold and unfold
at half of the widths. (1/17)

31



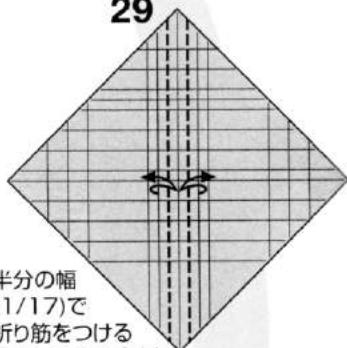
折り筋を
中心線に合わせて
折り筋をつける
(中心から4.5/17)
Fold the creases to
the center line.
Unfold. (4.5/17 from
the center)

30



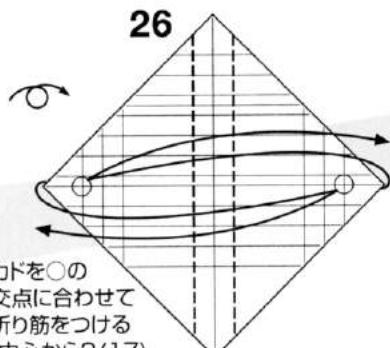
中心の折り筋は
同じ幅(1/17)になる
The creases around
the vertical diagonal
divide the horizontal
diagonal into seventeenth.

29



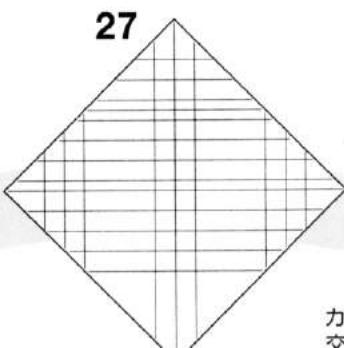
半分の幅
(1/17)で
折り筋をつける
Fold and unfold
at half of the widths. (1/17)

26



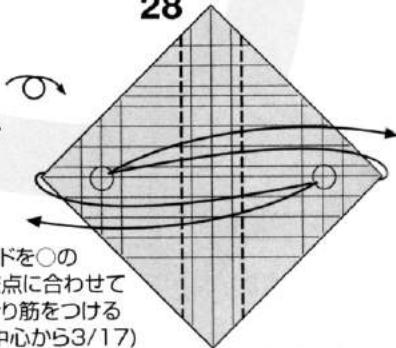
カドを○の
交点に合わせて
折り筋をつける
(中心から2/17)
Fold the corners to the circled points.
Unfold. (2/17 from the center)

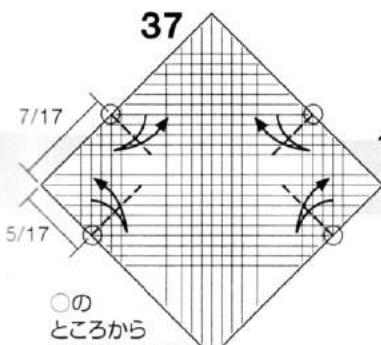
27



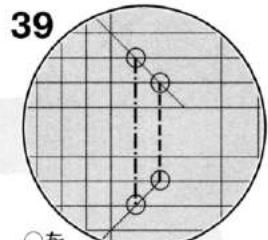
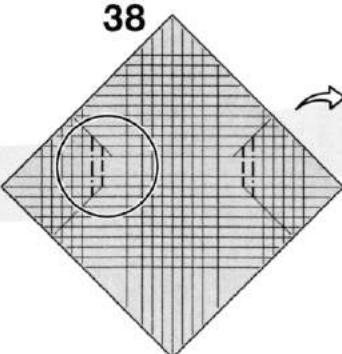
カドを○の
交点に合わせて
折り筋をつける
(中心から3/17)
Fold the corners to the circled points.
Unfold. (3/17 from the center)

28

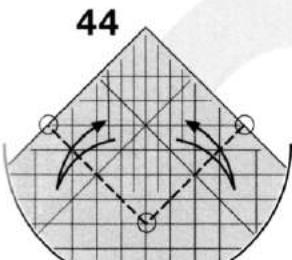




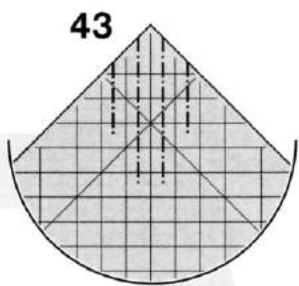
○の
ところから
折り筋をつける
Crease starting from
the circled point.



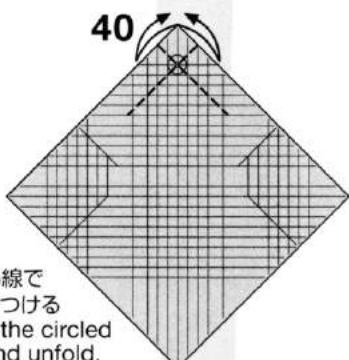
○を
結ぶ線で折り筋をつける
Fold and unfold along
the lines connecting the
circled points.



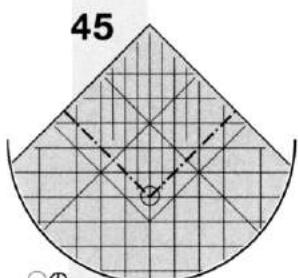
○を
結ぶ線で折り筋をつける
Fold and unfold along the lines
connecting the circled points.



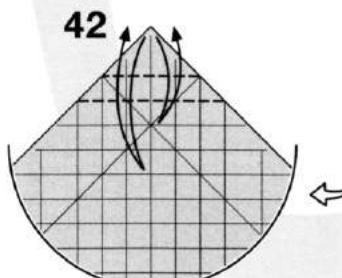
半分の幅で折り筋をつける
Crease in the middle.



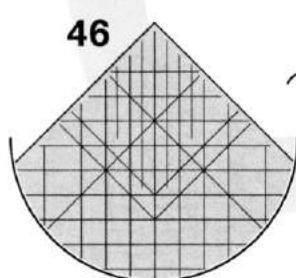
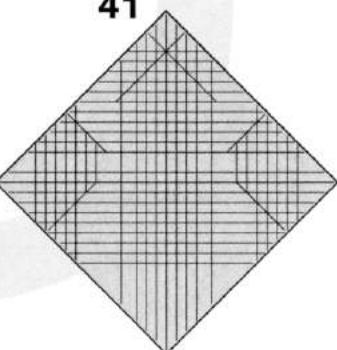
○を通る線で
折り筋をつける
Fold at the circled
point and unfold.



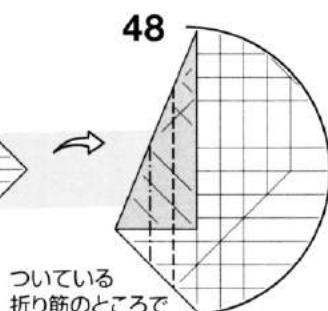
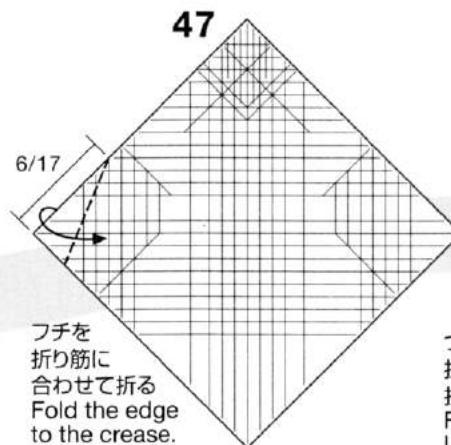
○の
ところから折り筋をつける
Fold at the circled point
and unfold.



カドを折り筋に合わせて
折り筋をつける
Fold the corner
to the crease and unfold.

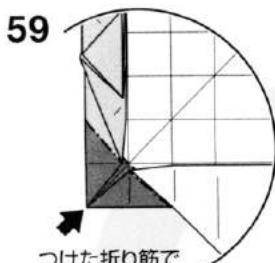


フチを
折り筋に
合わせて折る
Fold the edge
to the crease.

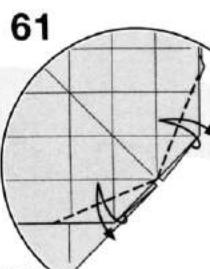
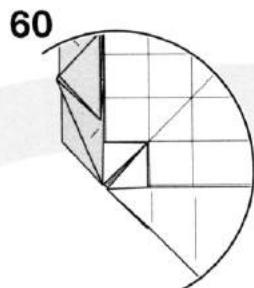


ついている
折り筋のところで
折り筋をつける
Fold using the creases.
Unfold.

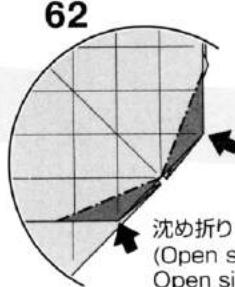
スピノザウルス



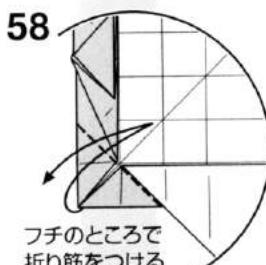
つけた折り筋で
沈め折りするように折る
Open sink the corner.



フチを
折り筋に合わせて
折り筋をつける
Fold the edges to
the creases and
unfold.



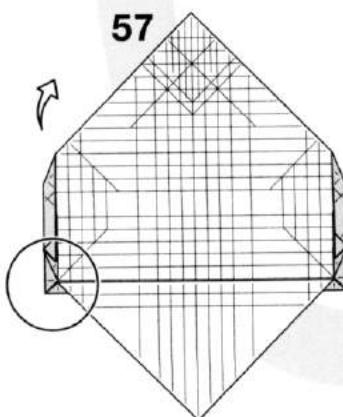
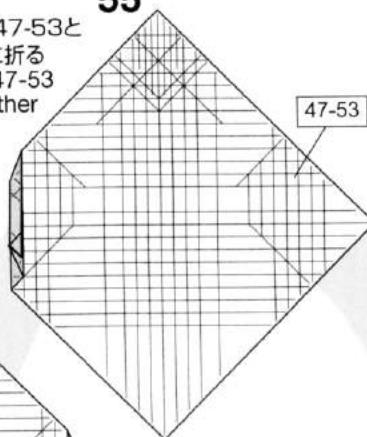
沈め折り
(Open sink)
Open sink.



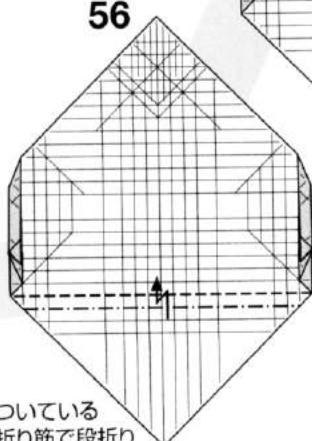
フチのところで
折り筋をつける
Fold and unfold
along the edge.

55

反対側も47-53と
同じように折る
Repeat 47-53
on the other
side.

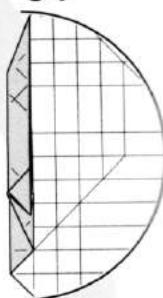


56



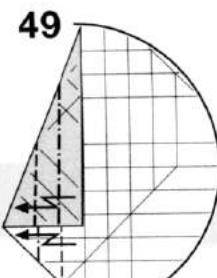
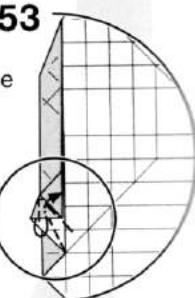
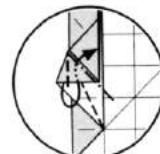
ついている
折り筋で段折り
Pleat along the creases.

54

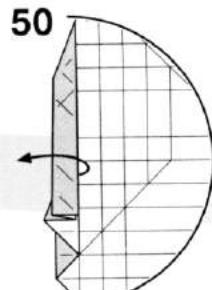


53

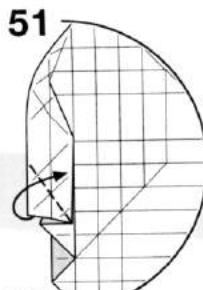
カドをつまむ
ように折る
Inside reverse
fold.



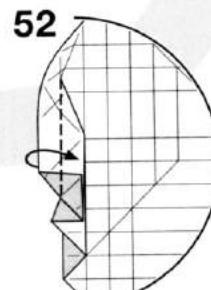
両側で段折り
(中わり折り2回)
Pleat on both
sides.



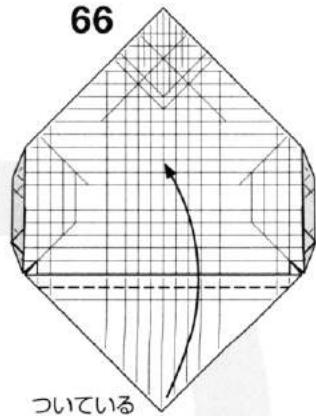
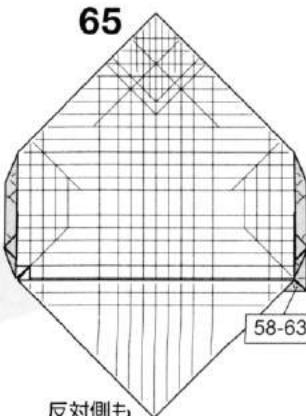
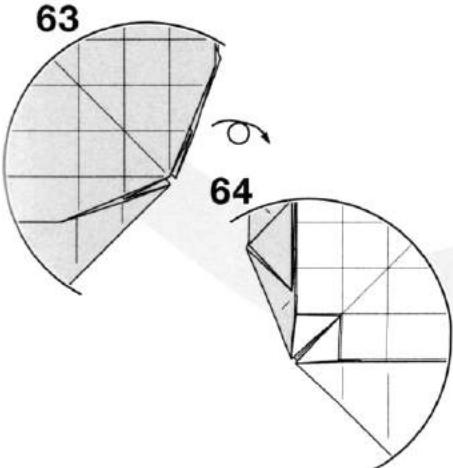
手前の1枚を
軽く開く
Open one layer.



カドを
フチに合わせて折る
Fold the corner to
the edge.

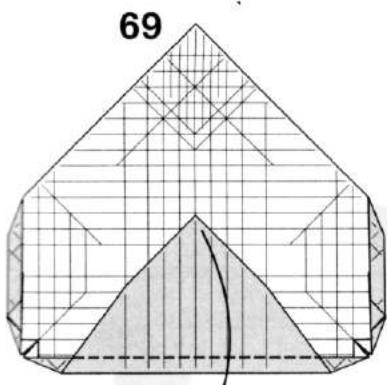


閉じる
Fold the
layer.

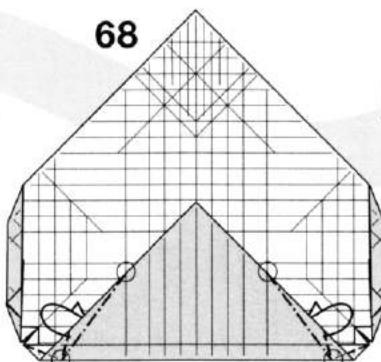


反対側も
58-63と同じように折る
Repeat 58-63 on the
other side.

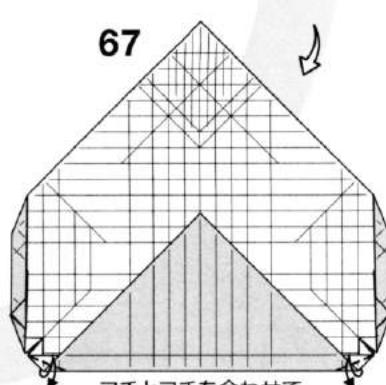
ついている
折り筋でカドを上へ折る
Fold up the corner
along the crease.



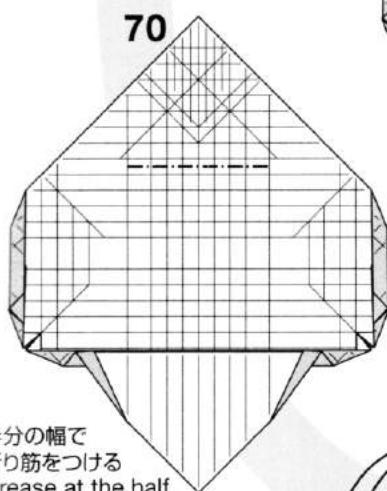
カドを下へ折る
Fold the flap
down.



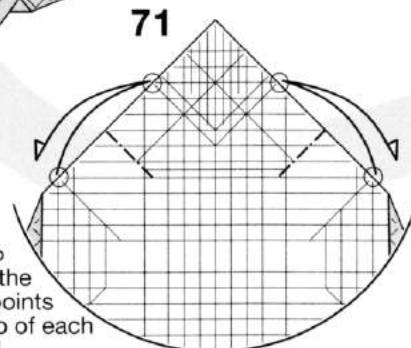
○を結ぶ線でフチを後ろへ折り込む
Fold inside along the line
connecting the circled points.



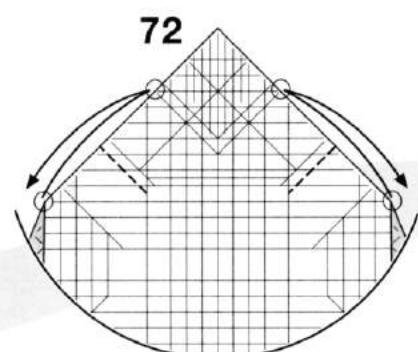
フチとフチを合わせて
折り筋をつける
Fold edge to edge
and unfold.



半分の幅で
折り筋をつける
Crease at the half
of the width.

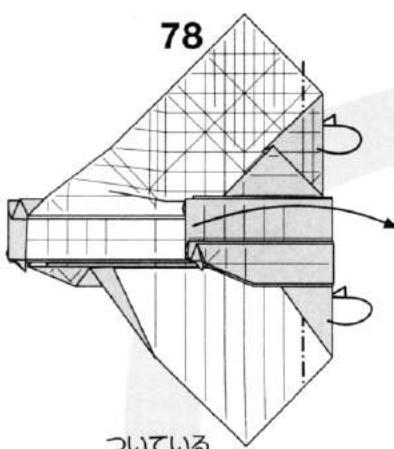


○と○を
合わせて
折り筋をつける
Fold so that the
two circled points
will be on top of each
other. Unfold.

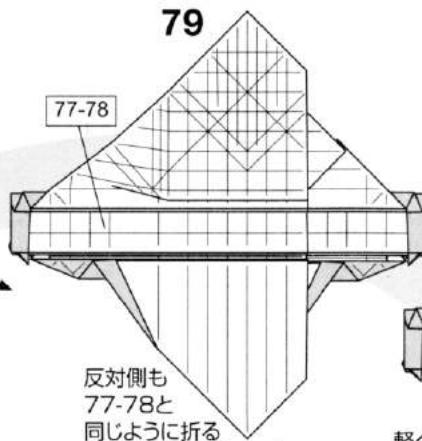


○を合わせて折り筋をつける
Fold so that the two circled
points will be on top of each
other.
Unfold.

79

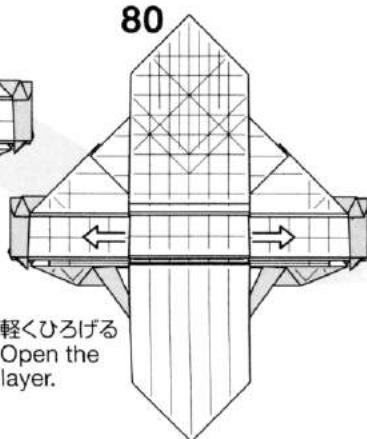


ついている
折り筋でチを後ろへ折る
Fold behind along the
existing crease.



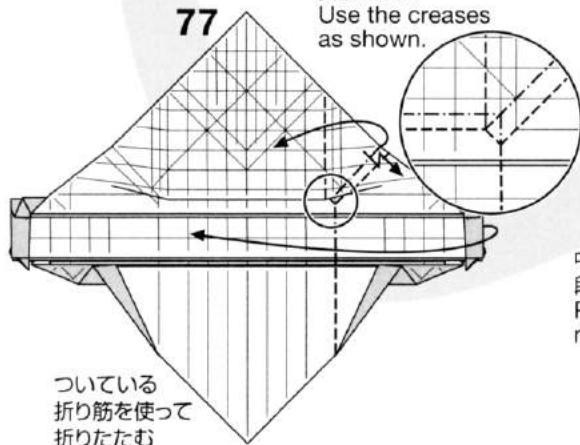
反対側も
77-78と
同じように折る
Repeat 77-78 on the
other side.

80



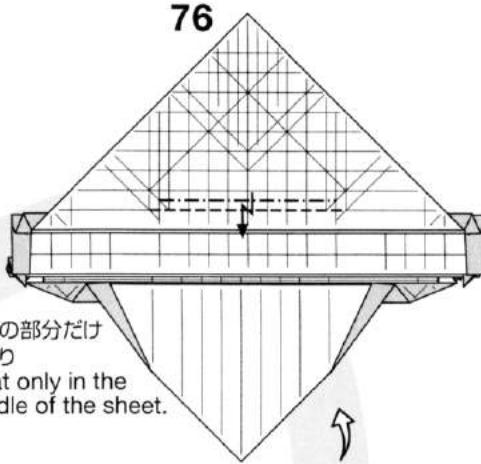
軽くひろげる
Open the
layer.

77



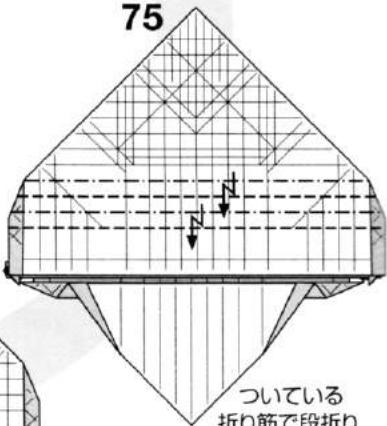
ついている
折り筋を使って
折りたたむ
Using existing creases,
do a series of pleat folds
and close the layers.

76



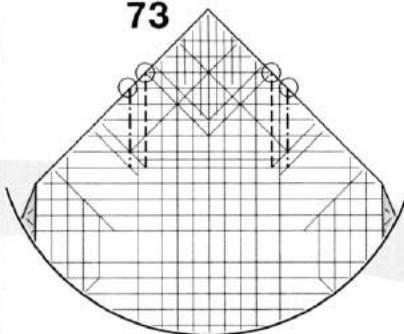
中心の部分だけ
段折り
Pleat only in the
middle of the sheet.

75



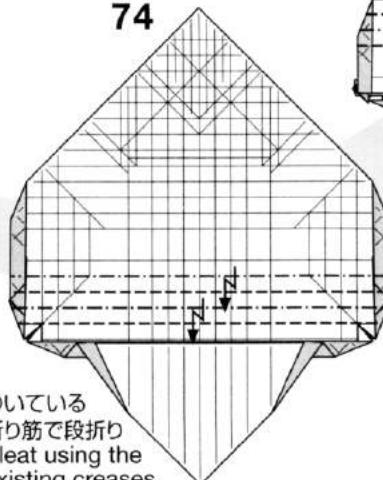
ついている
折り筋で段折り
Pleat using the
existing creases.

73

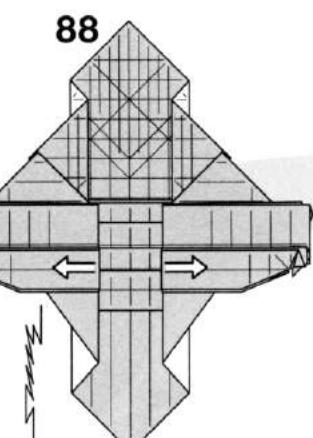
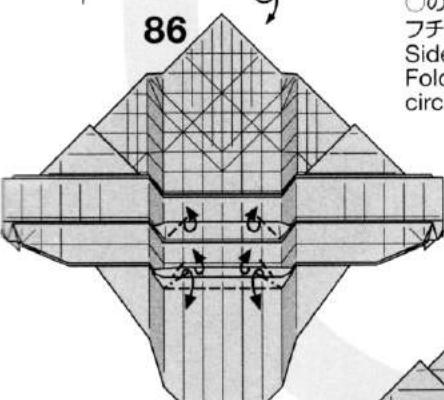
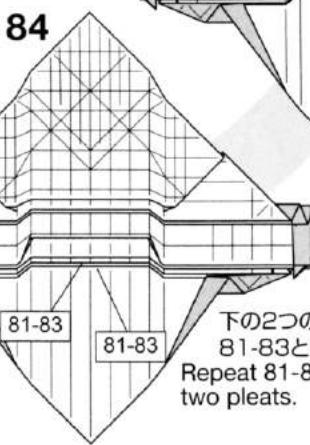
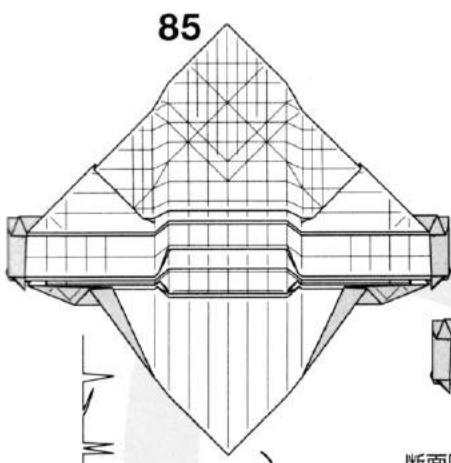
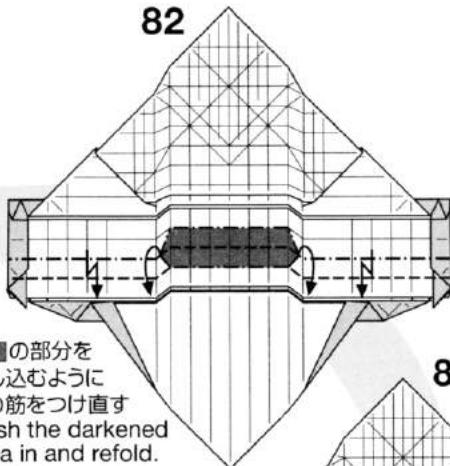
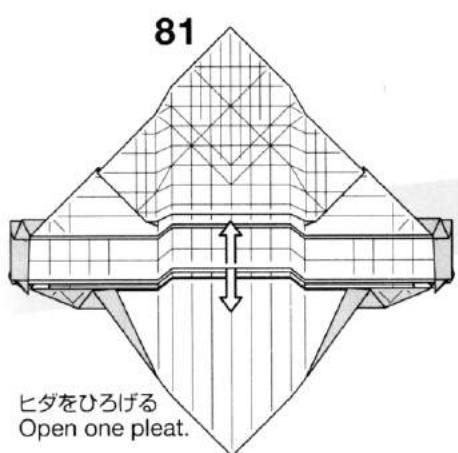


○のところから折り筋をつける
Crease starting from the
circled point.

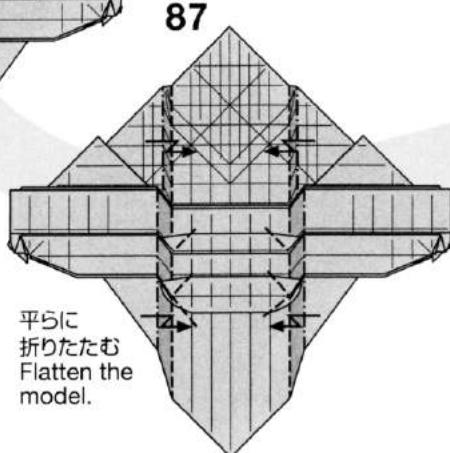
74



ついている
折り筋で段折り
Pleat using the
existing creases.



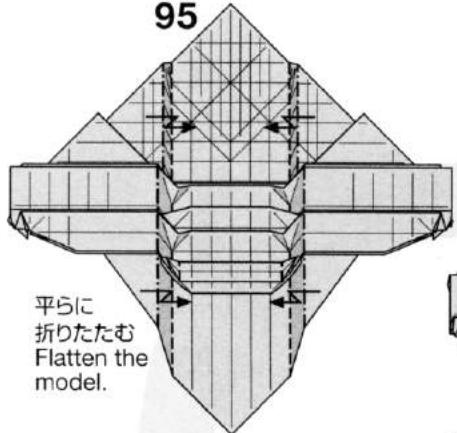
起き上がっている
フチを倒すように折る
Fold the flaps out.



軽くひろげる
Open the layers.

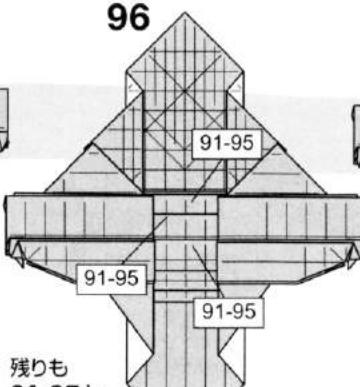
スピノサウルス

95



平らに
折りたたむ
Flatten the
model.

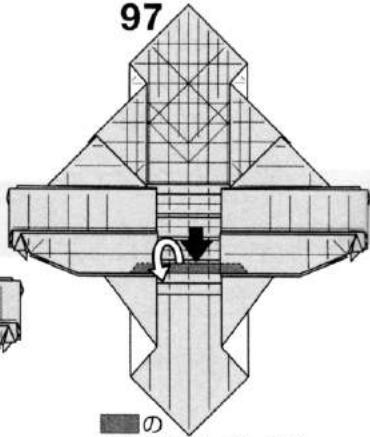
96



91-95
91-95
91-95

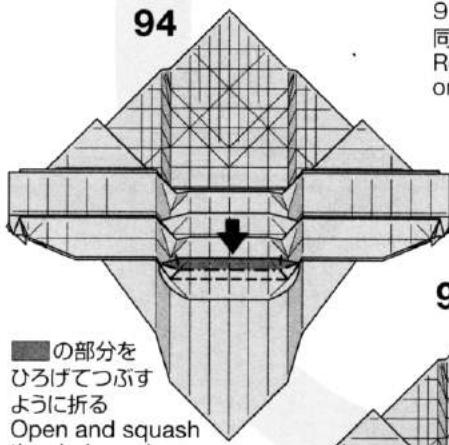
残りも
91-95と
同じように折る
Repeat 91-95
on the other pleats.

97



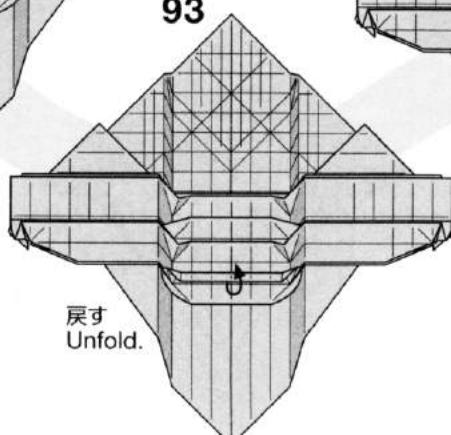
の
部分を裏側へ押し込む
Push the darkened area
to the other side.

94



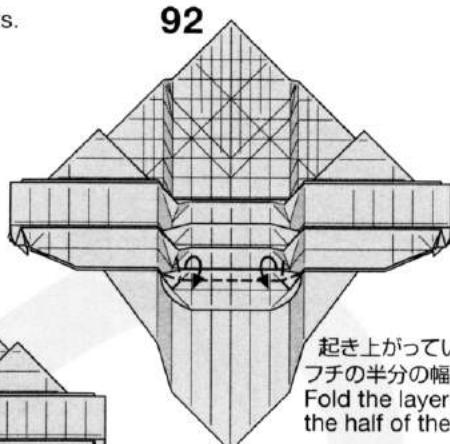
の部分を
ひろげてつぶす
ように折る
Open and squash
the darkened area.

93



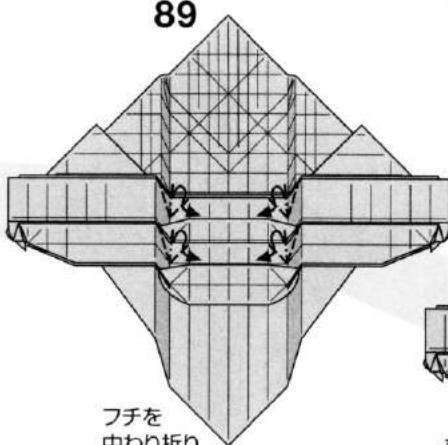
戻す
Unfold.

92



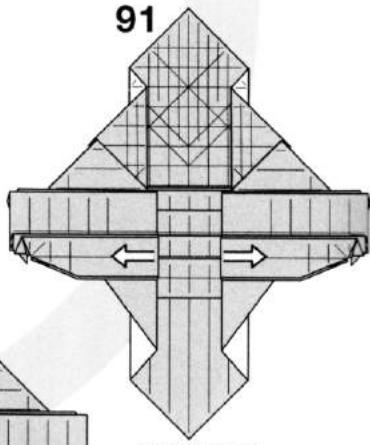
起き上がっている
フチの半分の幅で折る
Fold the layer at
the half of the width.

89



フチを
中わり折り
Inside reverse
fold.

91



軽くひろげる
Open the layers.

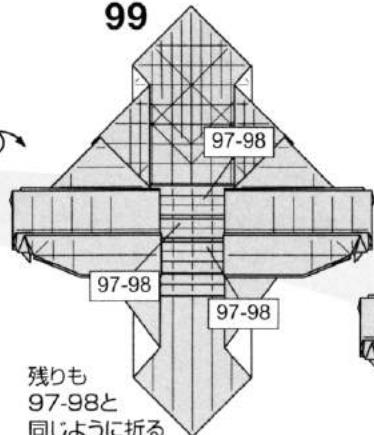
平らに
折りたたむ
Flatten the
model.

98



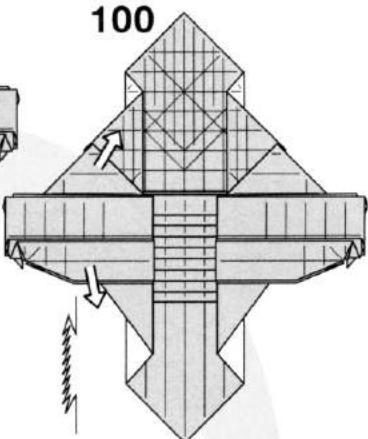
裏側から見た図
■の部分が
裏側に出ている
Back view.
The darkened area
shows up here.

99



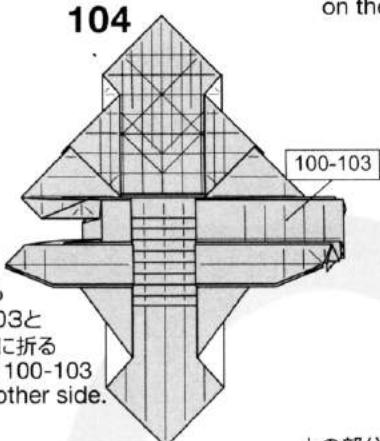
残りも
97-98と
同じように折る
Repeat 97-98
on the other pleats.

100



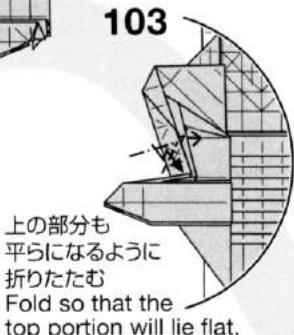
軽くひろげる
Open the layer.

104



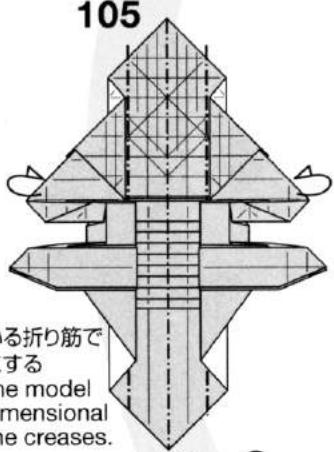
反対側も
100-103と
同じように折る
Repeat 100-103
on the other side.

103



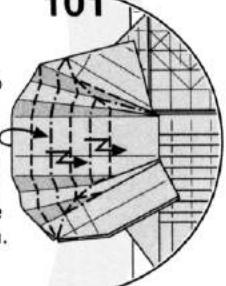
上の部分も
平らになるように
折りたたむ
Fold so that the
top portion will lie flat.

105



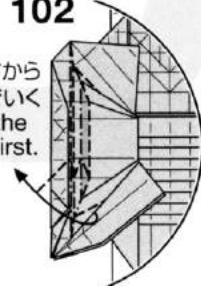
ついている折り筋で
立体的にする
Make the model
three dimensional
using the creases.

101



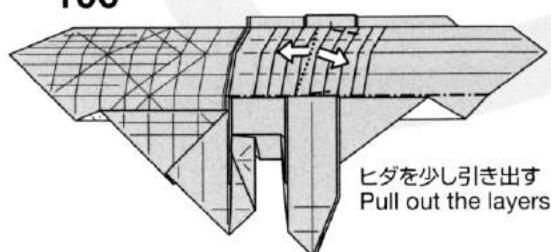
ついている
折り筋で
蛇腹状に
折りたたむ
Pleat and
assemble
as shown.

102



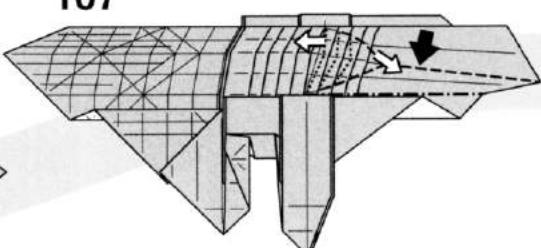
下の力の方から
折りたたんでいく
Assemble the
lower flap first.

106



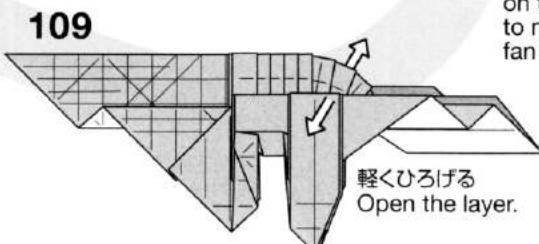
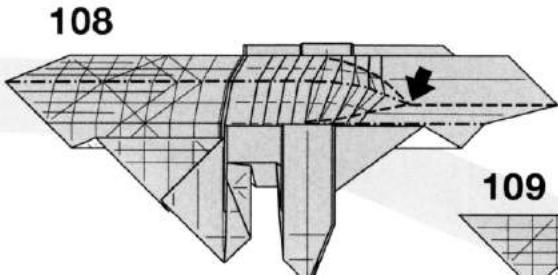
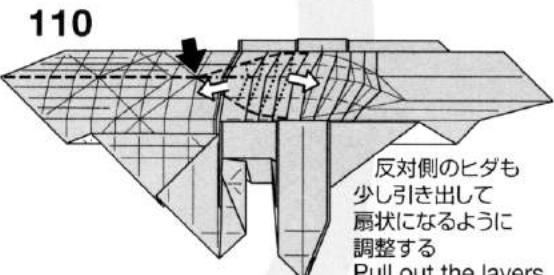
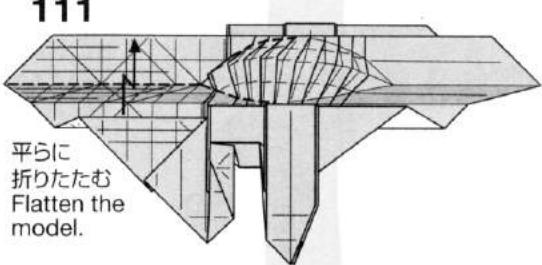
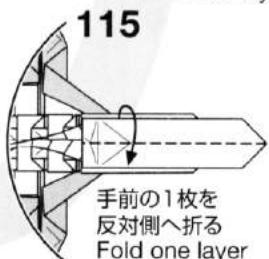
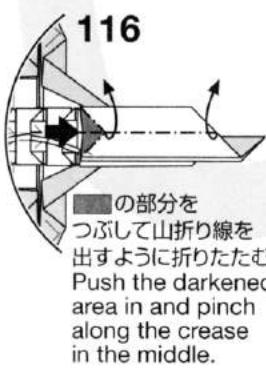
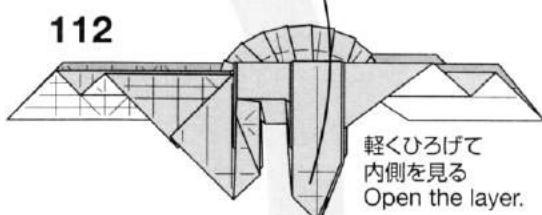
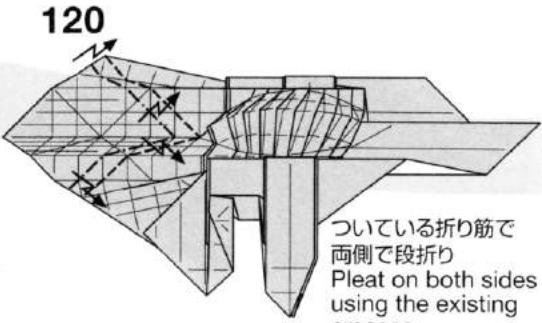
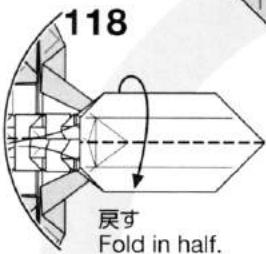
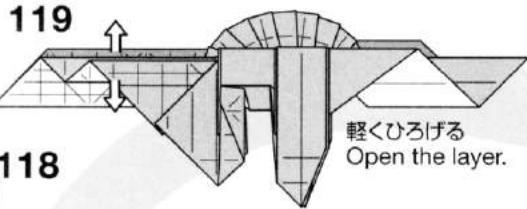
ヒダを少し引き出す
Pull out the layers.

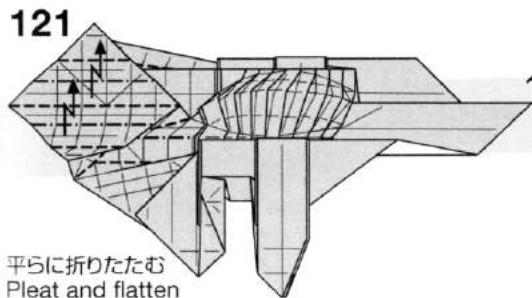
107



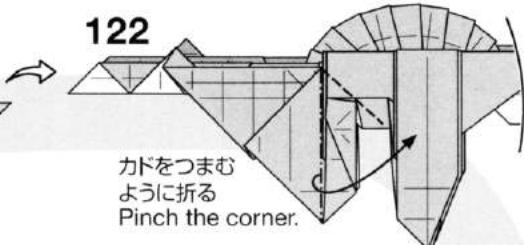
他のヒダも少し引き出して
扇状になるように調整する
Repeat on the other layers
to make the spines fan shape.

スピノサウルス

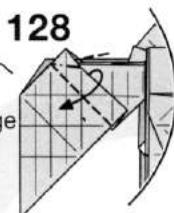




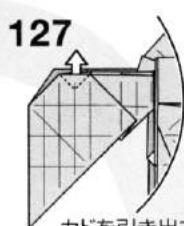
平らに折りたたむ
Pleat and flatten
the model.



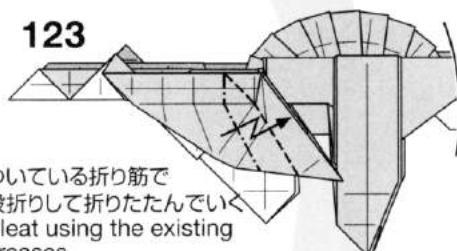
カドをつまむ
ように折る
Pinch the corner.



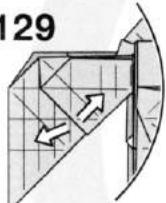
チヂを反対側へ
折る
Fold the edge
to the other
side.



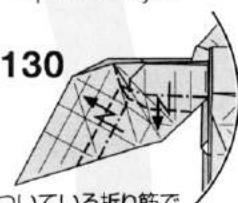
カドを引き出す
Pull out the
corner.



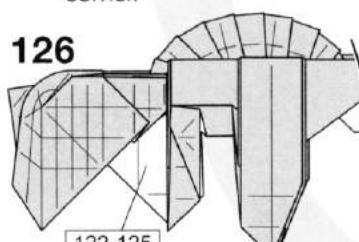
ついている折り筋で
段折りして折りたたんでいく
Pleat using the existing
creases.



ヒダをひろげる
Open the layer.

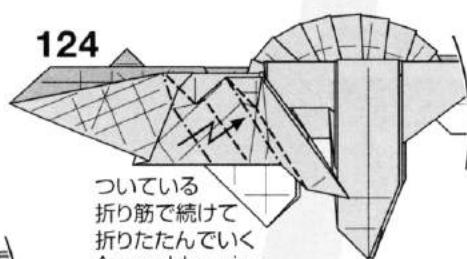


ついている折り筋で
段折りして平らに
折りたたむ
Pleat using the
creases and flatten.

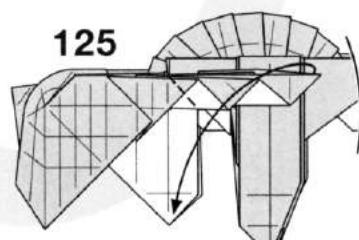


122-125

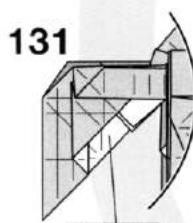
反対側も122-125と
同じように折る
Repeat 122-125
on the other side.



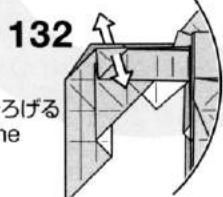
ついている
折り筋で続けて
折りたたんでいく
Assemble using
the creases.



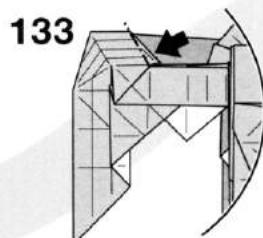
カドを下へ折る
Fold the corner down.



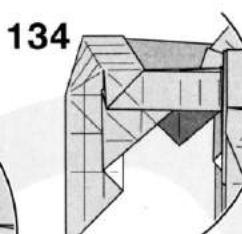
反対側も
127-130と
同じように折る
Repeat 127-130
on the other side.



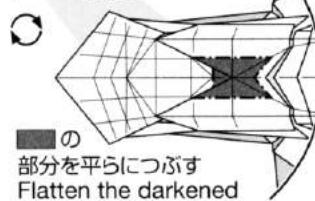
ヒダをひろげる
Open the layer.



山折りの折り筋を
つける
Mountain fold.



■のカドが
次の図で
平らにする部分
The darkened
flap will be
flattened.

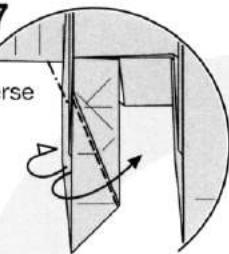


■の
部分を平らにつぶす
Flatten the darkened
area.

スピノサウルス

147

かぶせ折り
Outside reverse fold.



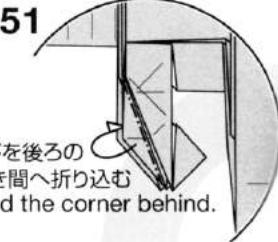
148

内側の
カドを引き出す
Pull out the
hidden layers.



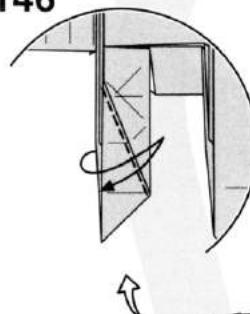
151

カドを後ろの
すき間に折り込む
Fold the corner behind.



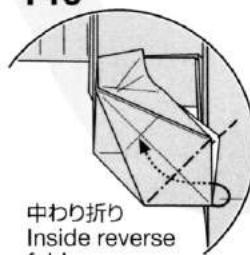
146

フチのところで
折り筋をつける
Fold along the
edge and unfold.



149

中わり折り
Inside reverse
fold.

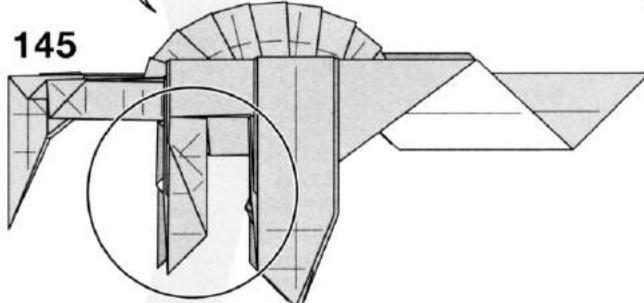


150

両側で
それぞれ段折り
Pleat on both
sides.

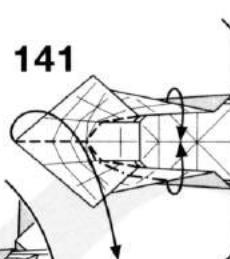


145



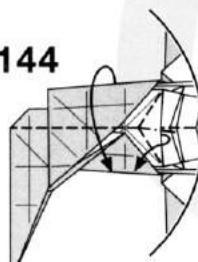
141

カドを
つまむように
折りたたむ
Pinch the corner
and fold it down.



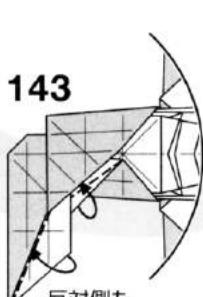
144

平らに折りたたむ
Flatten the model.



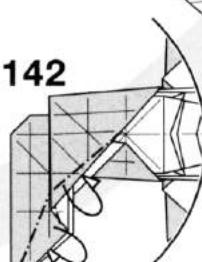
143

反対側も
同じように折る
Repeat on the
other side.



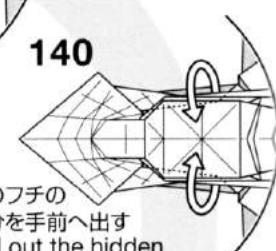
142

フチを内側へ
折り込む
Fold the edges
inside.

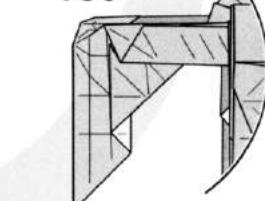


140

紙のフチの
部分を手前へ出す
Pull out the hidden
layers to front.

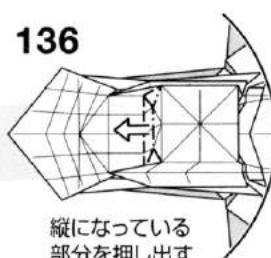


139



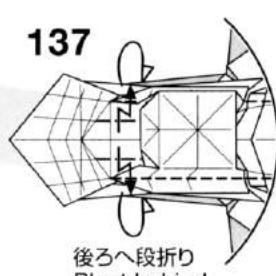
136

縦になっている
部分を押し出す
Push out along
the creases.



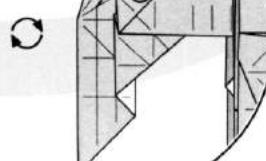
137

後ろへ段折り
Pleat behind.

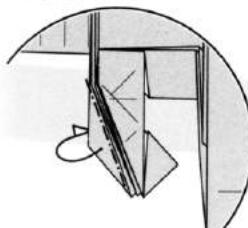


138

表側から見た図
両側のフチをつまんで
中心に合わせるように折る
Pinch the outer edges
and align at the center.

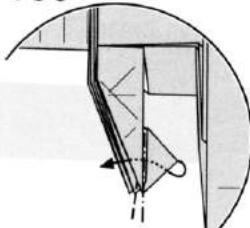


152



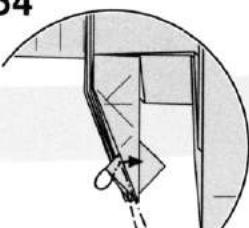
カドを後ろへ折る
Fold the corner behind.

153



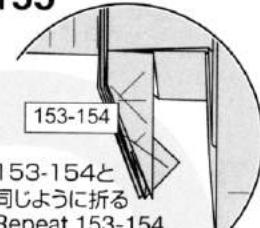
中わり折り
Inside reverse fold.

154



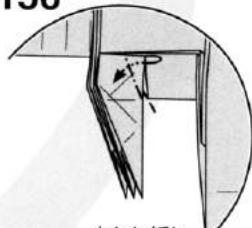
中わり折り
Inside reverse fold.

155



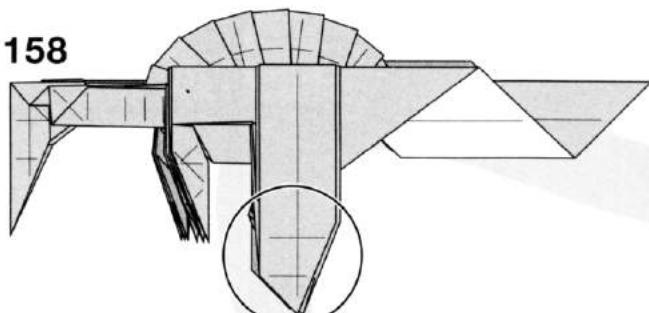
153-154と
同じように折る
Repeat 153-154
on the other layer.

156

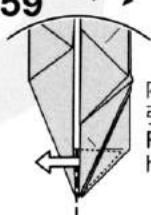


中わり折り
Inside reverse fold.

158



159



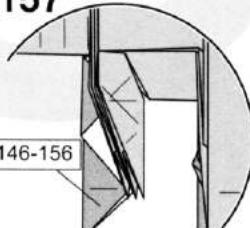
内側のカドを
引き出す
Pull out the
hidden layer.

160



カドを
上へ折る
Fold the corner up.

157



146-156

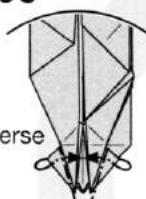
反対側も146-156と
同じように折る
Repeat 146-156
behind.

161



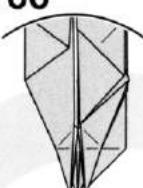
カドを反対側へ折る
Fold the corner
to the other side.

165

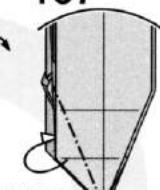


中わり折り
Inside reverse
fold.

166



167



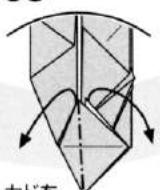
カドを後ろの
すき間へ折り込む
Fold the corner
to behind.

162



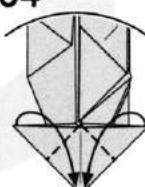
カドを上へ折る
Fold the corner
up.

163



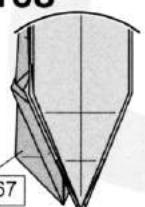
カドを
左右へひろげる
Open the layers.

164



カドを下へ折る
Fold down the
corners.

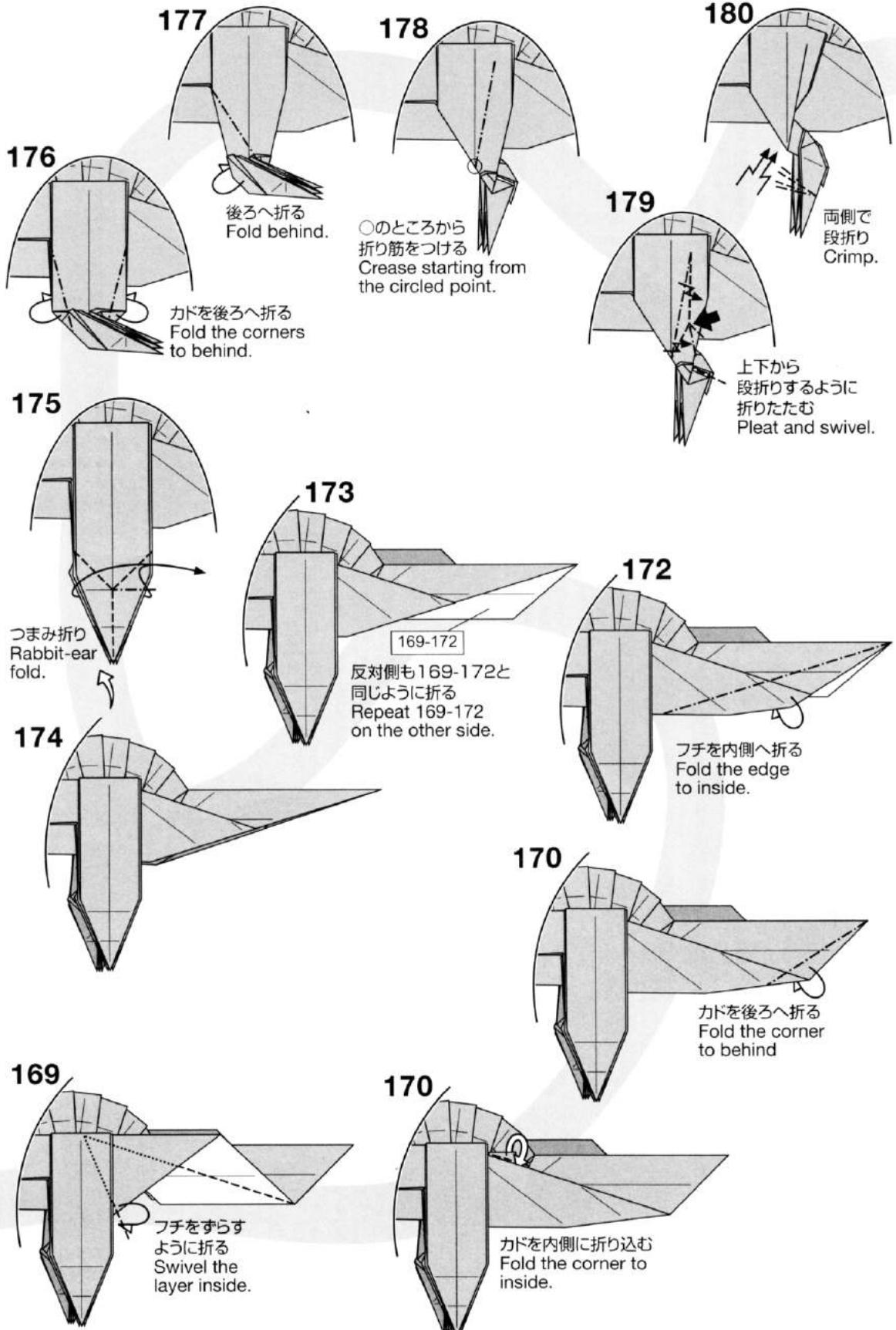
168

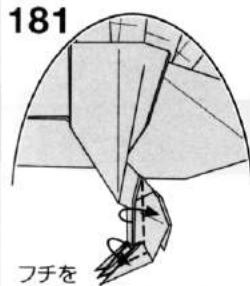


159-167

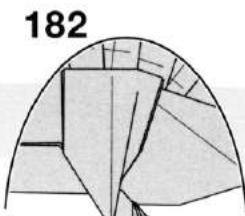
反対側も159-167と
同じように折る
Repeat 159-167
behind.

スピノサウルス

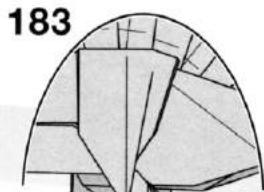




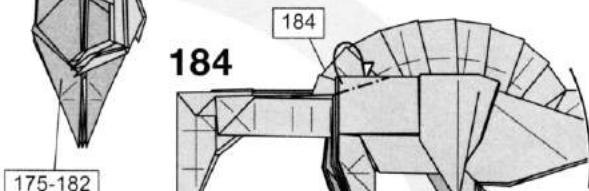
チフチを
引き寄せるように折る
Fold the edge and
swivel.



反対側も
同じように折る
Repeat behind.

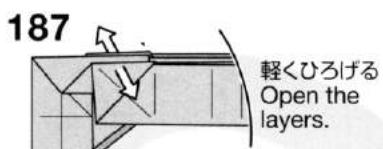


反対側も175-182と
同じように折る
Repeat 175-182
behind.

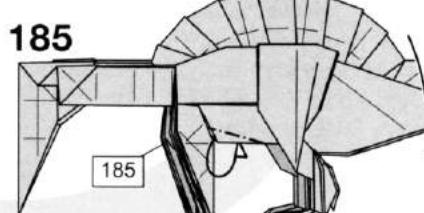
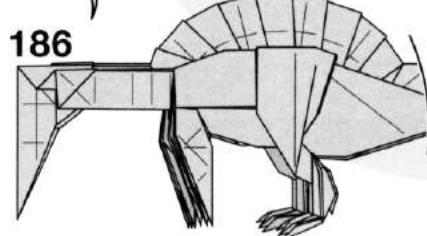


184

カドを
内側へ折る
反対側も同じように折る
Fold the corner to inside.
Repeat behind.

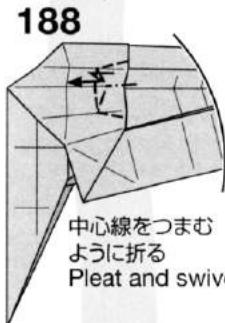


軽くひろげる
Open the
layers.

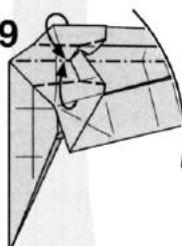


185

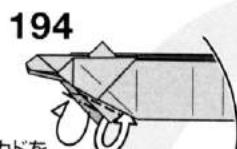
カドを内側へ折る
反対側も同じように折る
Fold the corner to inside.
Repeat behind.



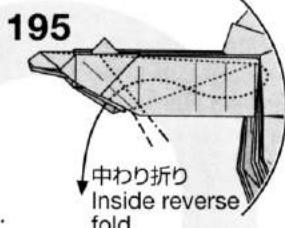
中心線をつまむ
ように折る
Pleat and swivel.



平らに
折りたたむ
Flatten the
model.

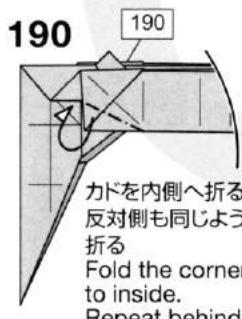


カドを
すき間へ折り込む
Fold the corner to inside.

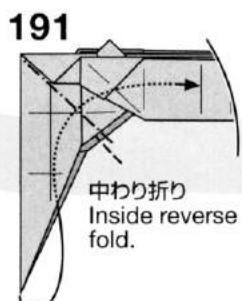


195

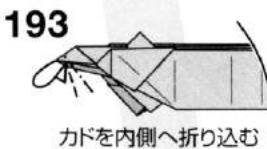
中わり折り
Inside reverse
fold.



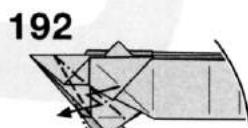
カドを内側へ折る
反対側も同じように
折る
Fold the corner
to inside.
Repeat behind.



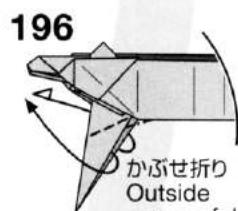
中わり折り
Inside reverse
fold.



カドを内側へ折り込む
Fold the tip inside.

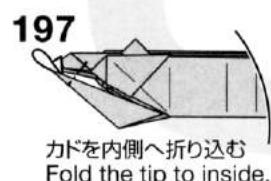


両側で段折り
Crimp.



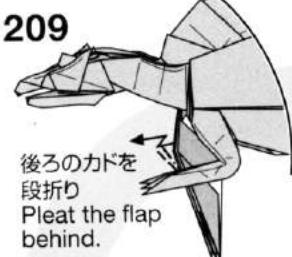
196

かぶせ折り
Outside
reverse
fold.

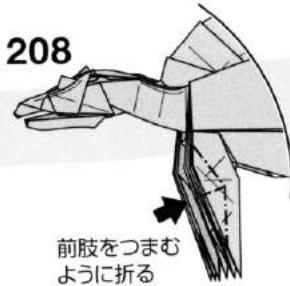


カドを内側へ折り込む
Fold the tip to inside.

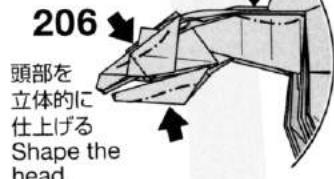
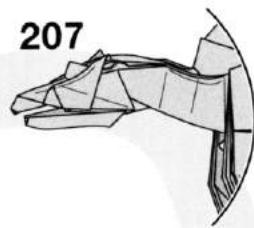
スピノサウルス



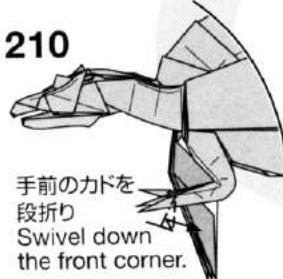
後ろのカドを
段折り
Pleat the flap
behind.



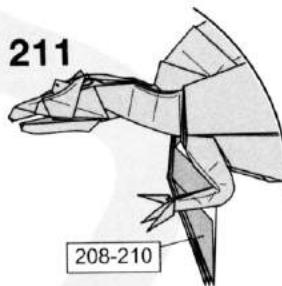
前肢をつまむ
ように折る
Narrow and
Shape the foreleg.



頭部を
立体的に
仕上げる
Shape the
head.

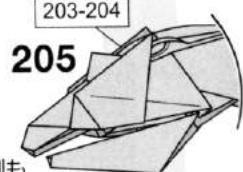


手前のカドを
段折り
Swivel down
the front corner.

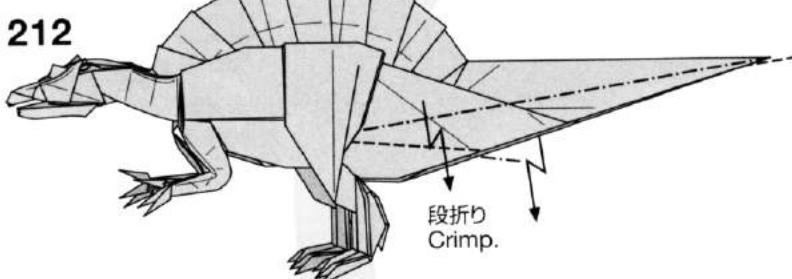


208-210

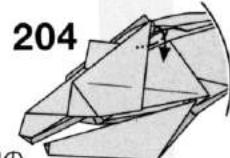
反対側も
208-210と
同じように折る
Repeat 208-210
behind.



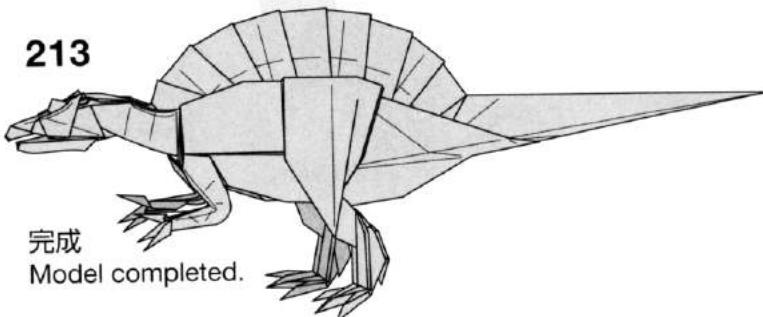
反対側も
203-204と同じように折る
Repeat 203-204
behind.



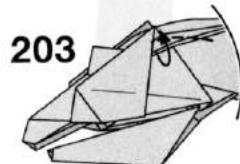
段折り
Crimp.



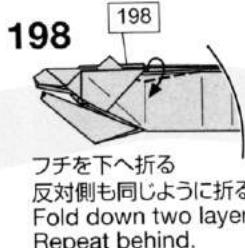
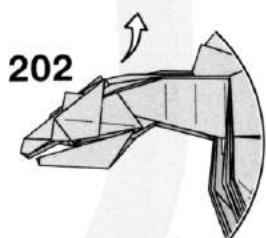
奥の
フチをひろげて目を作る
Fold down the layer
to make an eye.



完成
Model completed.



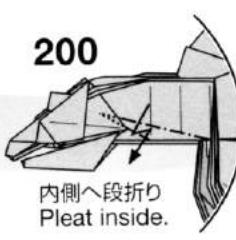
手前のフチを上へ折る
Fold one layer up.



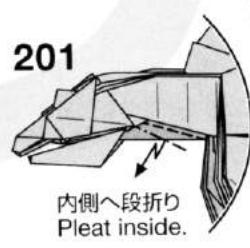
フチを下へ折る
反対側も同じように折る
Fold down two layers.
Repeat behind.



両側で段折り
Crimp.



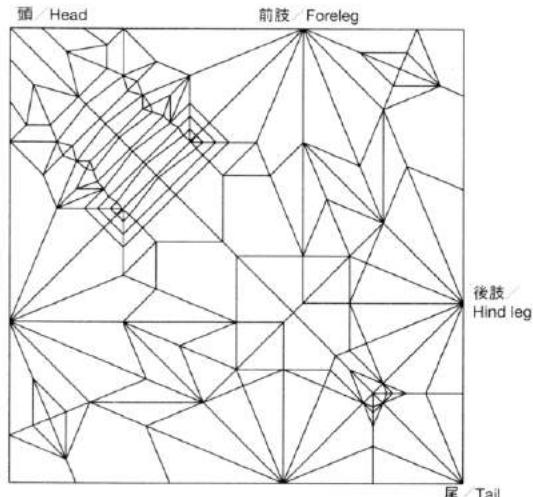
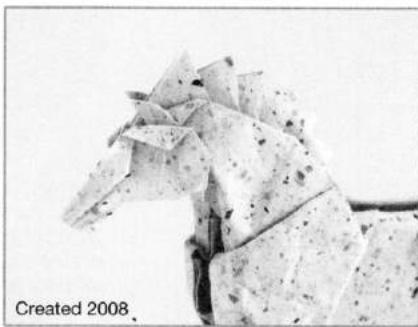
内側へ段折り
Pleat inside.



内側へ段折り
Pleat inside.

ウマ

Horse



名 作の条件を、後世への影響力と考えた場合、吉野一
生氏の作品「馬」は紛うことなき名作といえます。特徴的なたてがみの表現は、創作された当時はもちろん、創作技術の研究が進んだ現代においても、非常にユニークといえる造形手法で、多くの作家・作品に影響を与えています。私自身も大きな影響を受けており、ヒダの使い方というテーマで、これまでいろいろな作品にこの手法を取り入れて創作してきました。そのなかでもこのウマは、私なりの答えであり、吉野馬へのオマージュ作品といえるでしょう。

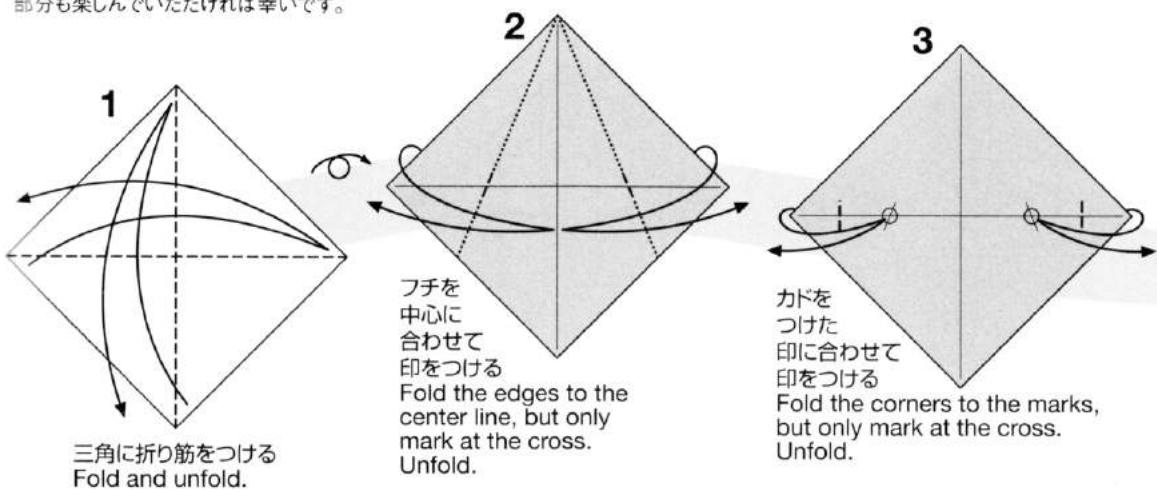
本作では、任意の角度で構成された扱いづらい構造を整理して、22.5度系の構造に埋め込んでいます。基本的な発想自体はシンプルで、放射状のヒダの付け根を1点にまとめて、90度の扇状にひろげることで、扱いづらい角度の構造となるべく排除しています。ヒダの中心が分厚くなるなどの難点もありますが、周囲の構造への影響を最小限にして収めることができます。

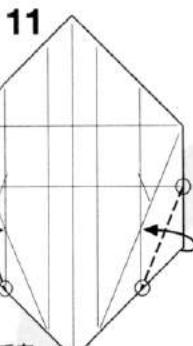
また、そのおかげで体については、22.5度系の比較的折りやすい構造になっています。特に32~48の手順は、沈め折りを活用して一気に四肢を折り出すという、短い手順で形が大きく変わるダイナミックな工程となっています。たてがみ以外の部分も楽しんでいただければ幸いです。

A true masterpiece in the world of origami always have power to influence the following folders. "Horse" by Issei Yoshino is one such masterpiece. An expression of the mane in this model with its peculiar use of pleats influenced many following folders, even now after two decades. I myself is one of such folders, and I designed many models adopting this method. This horse is my own reply with homage to Yoshino's horse.

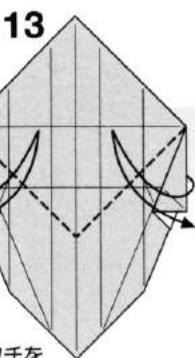
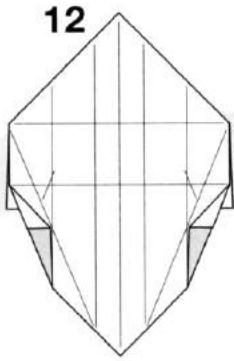
In this model, I embedded into a 22.5 degree based structure another structure with arbitrary angles of crease lines as in the original Yoshino horse. To do so, I came up with a simple idea of having crease lines for radiating pleats intersect at one point and fanning the pleats out. By using this method, I succeeded in avoiding the problem of arbitrary angles.

As a result, the body turned out to be of a simple 22.5 degree structure. In steps 32~48, you will experience folding out the four legs at once using sink folds, one of the most dramatic process in this model. I hope you enjoy folding steps as a whole, not only manes.

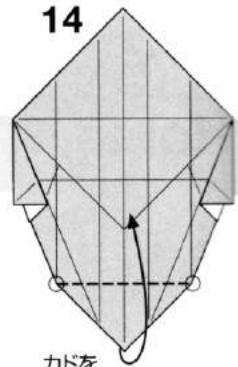




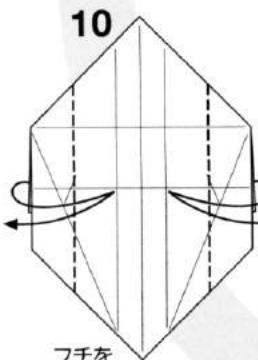
フチを
折り筋に合わせて折る
Fold along the line
connecting the
circled points.



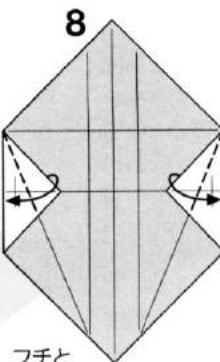
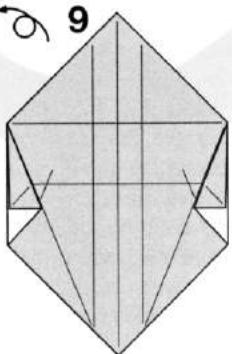
フチを
折り筋に合わせて
折り筋をつける
Fold the edges to the
crease and unfold.



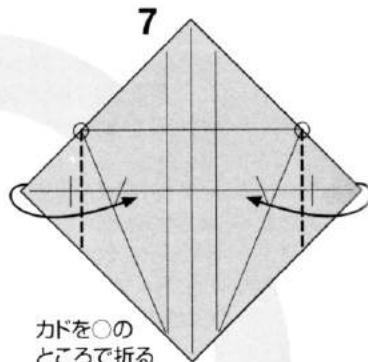
カドを
結ぶ線で上へ折る
Fold the corner
along the line
connecting the
circled points.



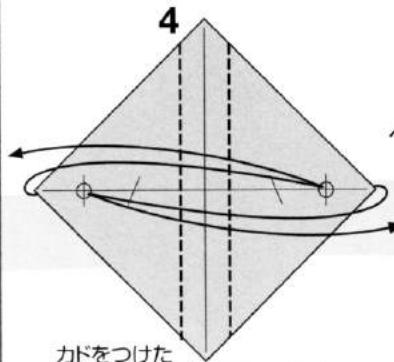
フチを
折り筋に合わせて
折り筋をつける
Fold the edges to the
creases and unfold.



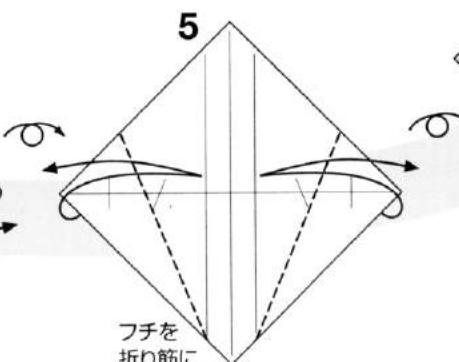
フチと
フチを合わせて折る
Fold edge to edge.



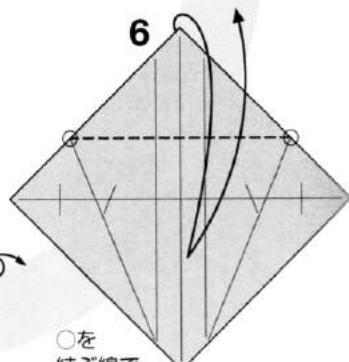
カドを○の
ところで折る
Fold the corners
at the circled points.



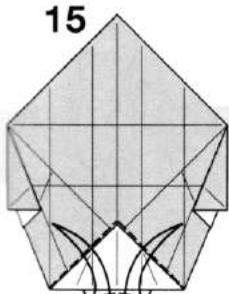
カドをつけた
印に合わせて折り筋をつける
Fold the corners to the marks
and unfold.



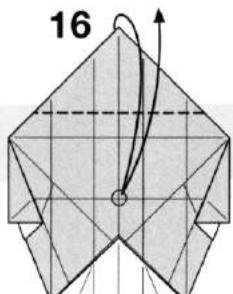
フチを
折り筋に
合わせて折り筋をつける
Fold the edges to the
creases and unfold.



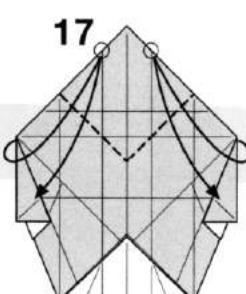
○を
結ぶ線で
折り筋をつける
Fold and unfold along
the line connecting the
circled points.



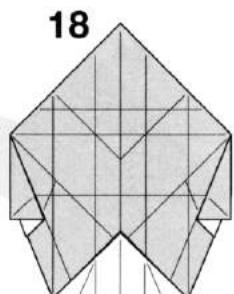
フチのところで
折り筋をつける
Fold along the
edges and unfold.



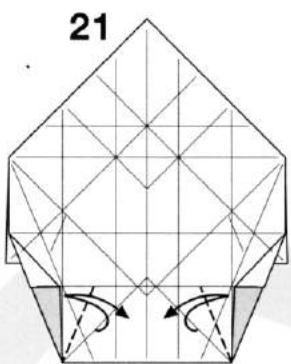
カドを折り筋の交点に
合わせて折り筋をつける
Fold the corner to the
circled point and unfold.



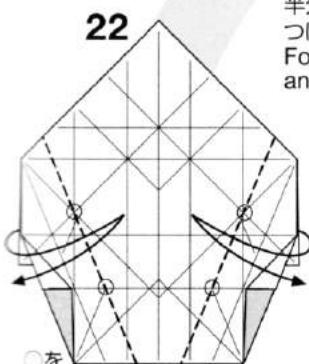
カドを折り筋に合わせて
折り筋をつける
Fold to the circled
points and unfold.



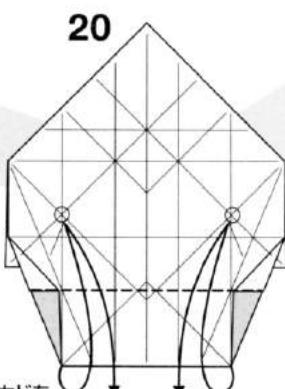
19



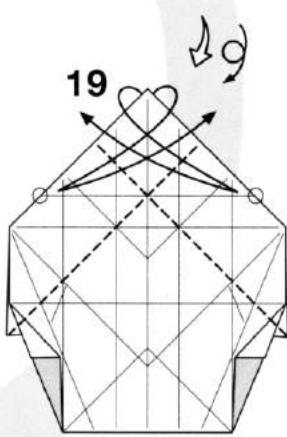
半分の角度で折り筋を
つける
Fold angle bisectors
and unfold.



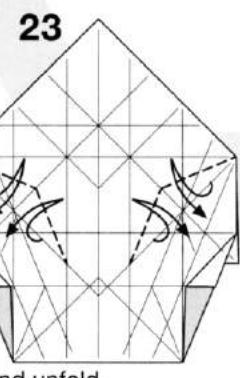
○を通る線で折り筋をつける
Fold along the lines
connecting the circled
points and unfold.



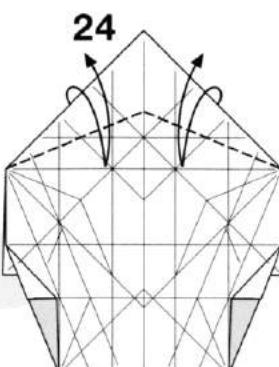
カドを
○に合わせて折り筋をつける
Fold so that the edge aligns
with the circled points.
Unfold.



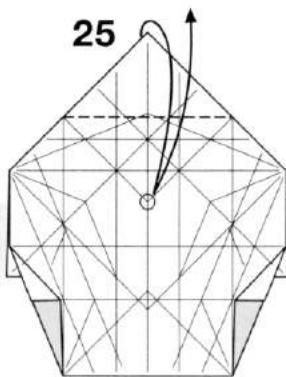
カドを折り筋に合わせて
折り筋をつける
Fold to the circled
points and unfold.



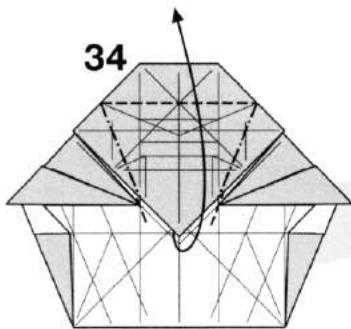
半分の
角度で
折り筋を
つける
Fold angle
bisectors and unfold.



フチを折り筋に合わせて
折り筋をつける
Fold the edges to the
crease and unfold.

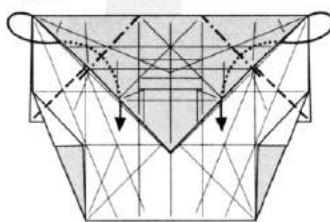


カドを折り筋の交点に
合わせて折り筋をつける
Fold down to the circled
point and unfold.

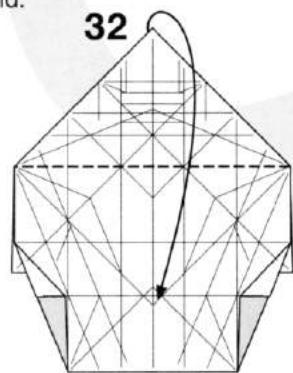


内側をひろげてつぶすように
折る(花弁折り)
Petal fold.

33

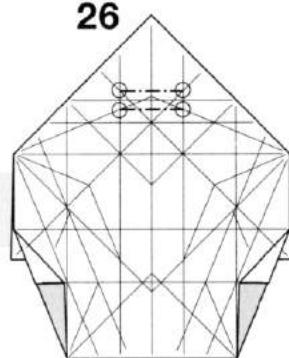


中わり折り
Inside reverse
fold.

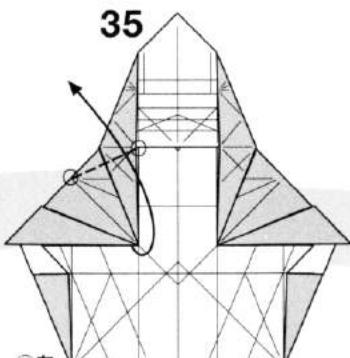


カドを下へ折る
Fold the corner
down.

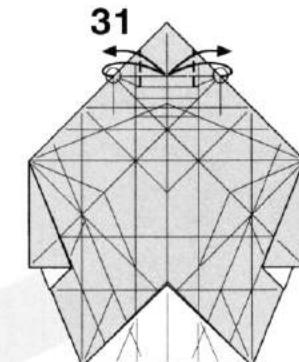
26



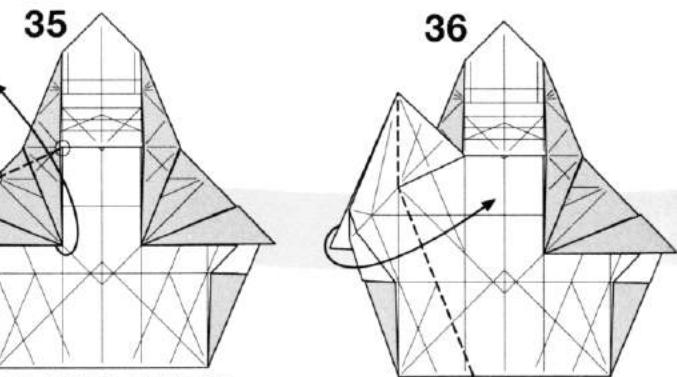
○を結ぶ線で折り筋をつける
Crease along the line
connecting the circled
points.



○を
結ぶ線でカドを起こすように折る
Fold up the corner along the
line connecting circled points.
The model will not lie flat.

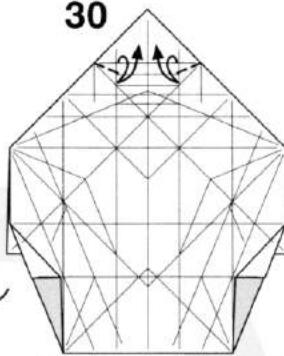


○を中心線に合わせて
折り筋をつける
Fold the circled points
to the center and unfold.



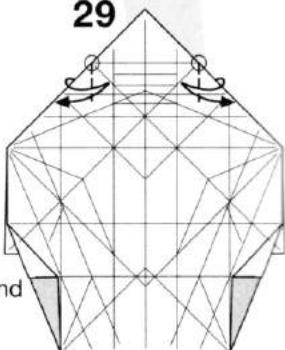
ついている折り筋を使って
平らに折りたたむ
Flatten using the creases.

30



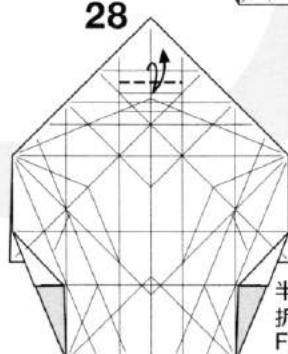
半分の角度で折り筋をつける
Fold angle bisectors and
unfold.

29



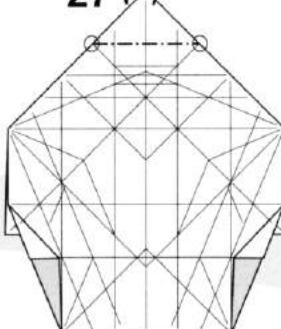
フチを折り筋に
合わせて折り筋を
つける
Fold the edges
to the creases and
unfold.

28

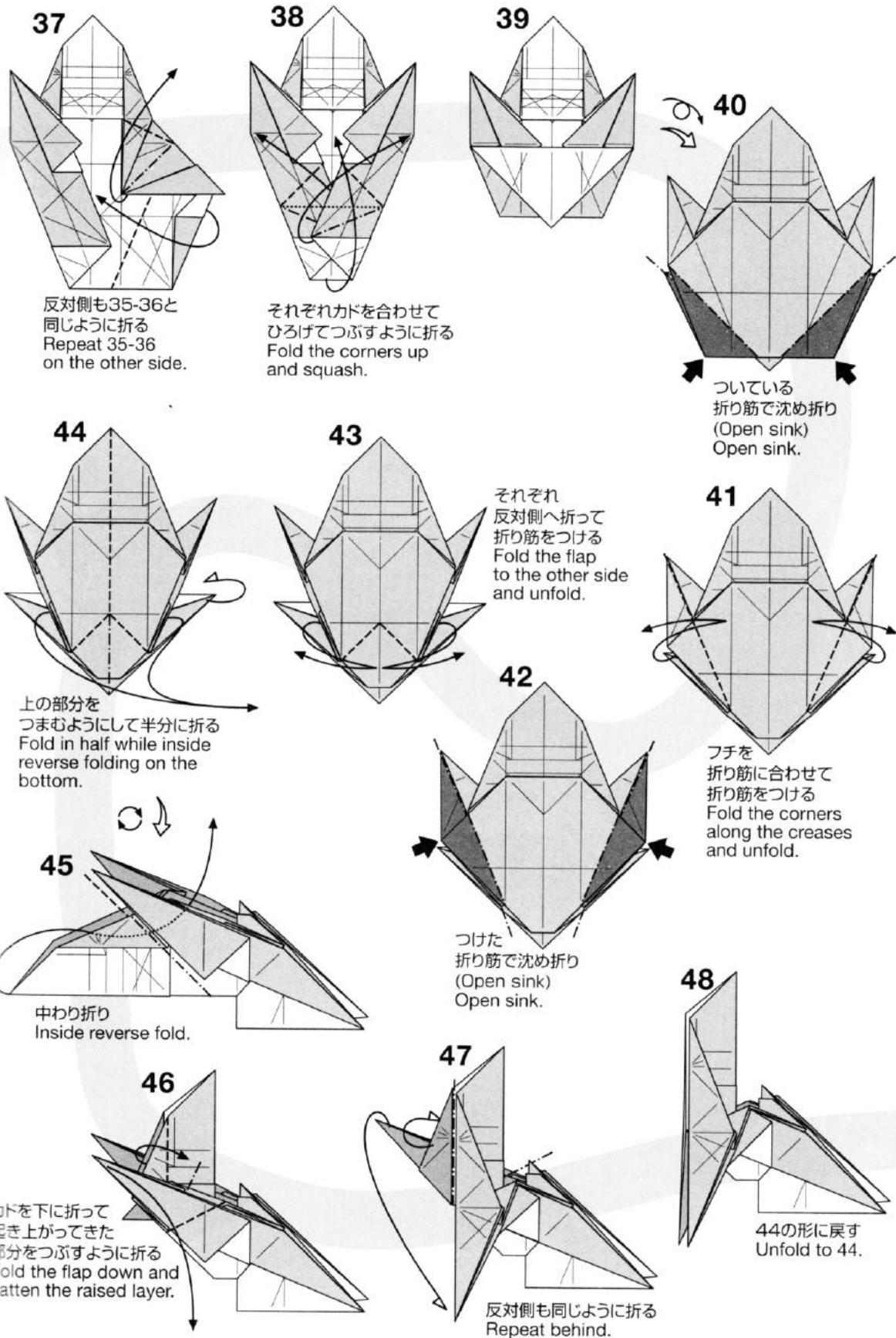


半分の幅で
折り筋をつける
Fold in the middle
of the creases and
unfold.

27

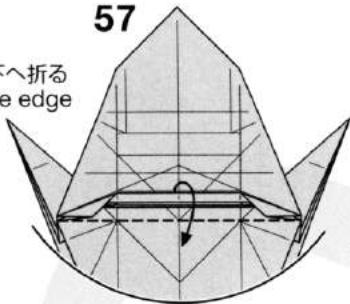


○を結ぶ線で
折り筋をつくる
Fold and unfold
along the line connecting
the circled points.



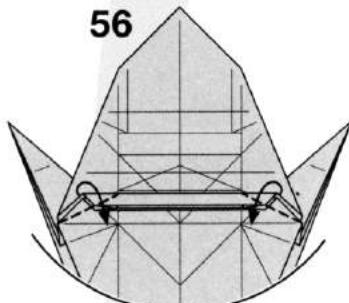
57

フチを下へ折る
Fold the edge down.



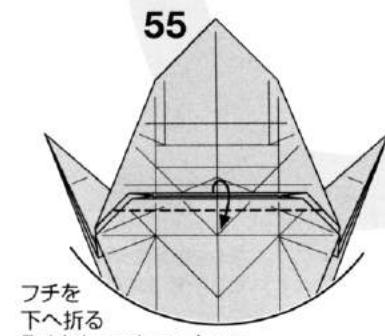
56

カドを斜めに折る
Fold the corners down.



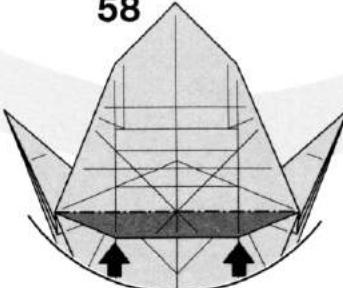
55

フチを下へ折る
Fold the edges down.



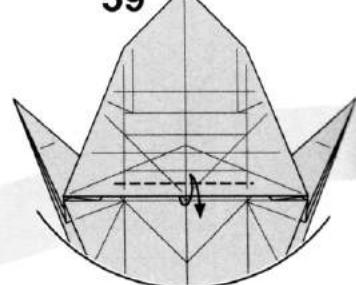
58

フチを内側に押し込む
(Closed sink)
Closed sink.



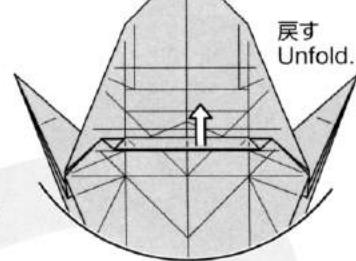
59

フチを折り筋に合わせて
折り筋をつける
Fold the edge to the
crease and unfold.



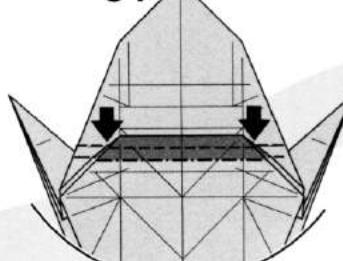
53

戻す
Unfold.



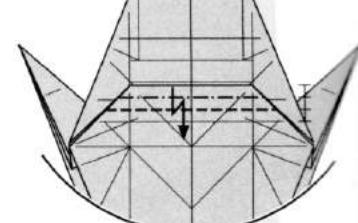
54

つけた折り筋で2段の沈め折り
(Open sink)
Open sink in and out.



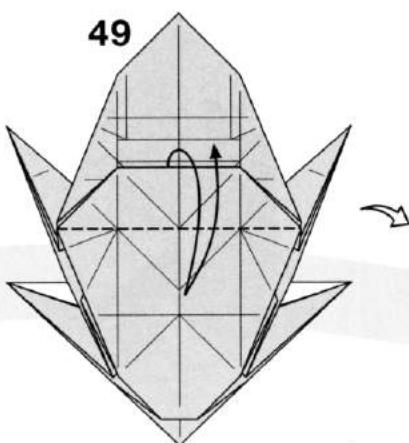
52

1/3の幅で段折り
Pleat at thirds of
the width.



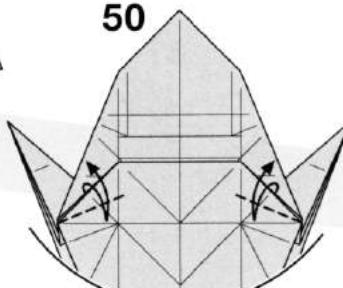
49

フチを反対側へ折って
折り筋をつける
Fold the flap down
and unfold.



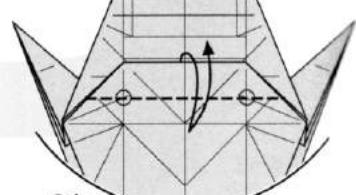
50

フチを折り筋に合わせて
折り筋をつける
Fold the edges to the
crease and unfold.

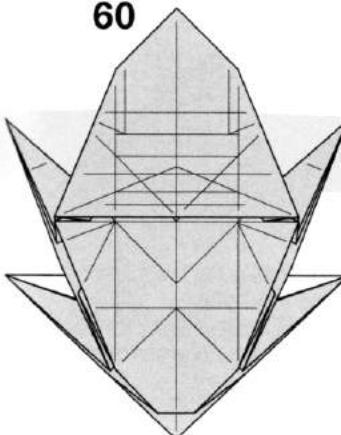


51

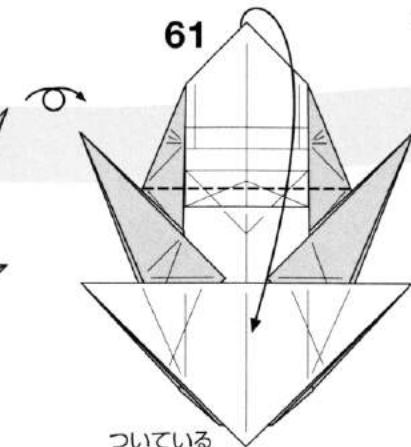
○を
結ぶ線で折り筋をつける
Fold along the line
connecting the circled
points and unfold.



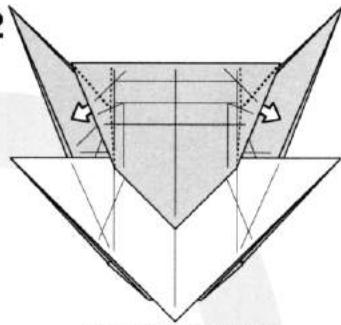
60



61



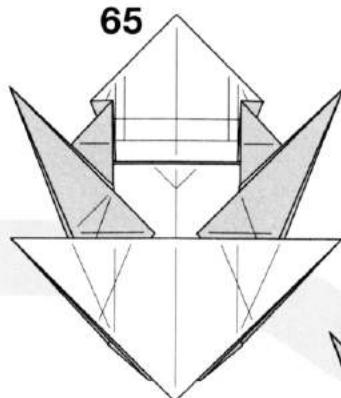
62



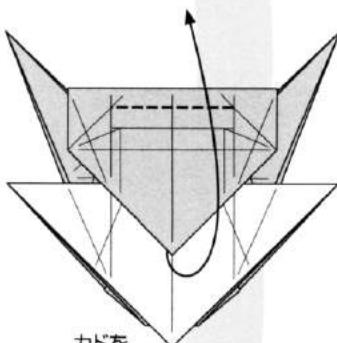
ついている
折り筋でカドを下へ折る
Fold down.

後ろの紙を引き出す
Pull out the inner layer.

65

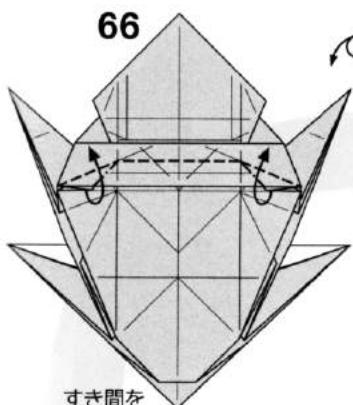


63



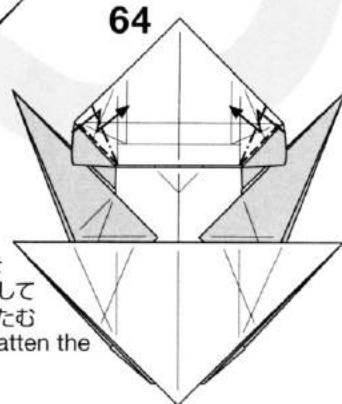
カドを
ついている線で上へ折る
Fold the flap up.

66



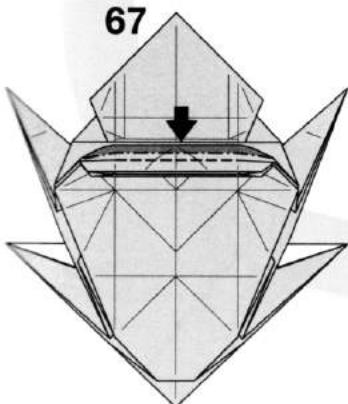
すき間を
ひろげてフチを起こす
ように折る
Raise the edge.

64



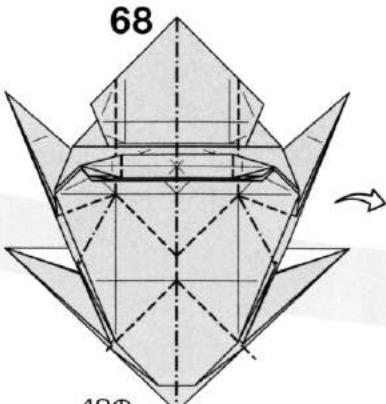
左右の部分を
斜めに段折りして
平らに折りたたむ
Pleat and flatten the
model.

67



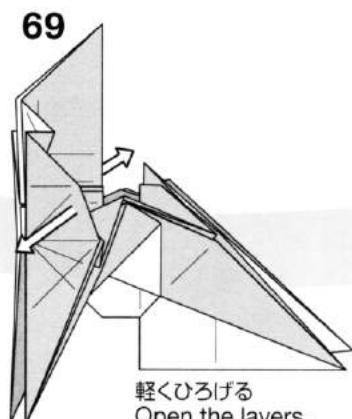
起こしたフチをひろげて
つぶすように折る
Open and squash
the darkened area.

68

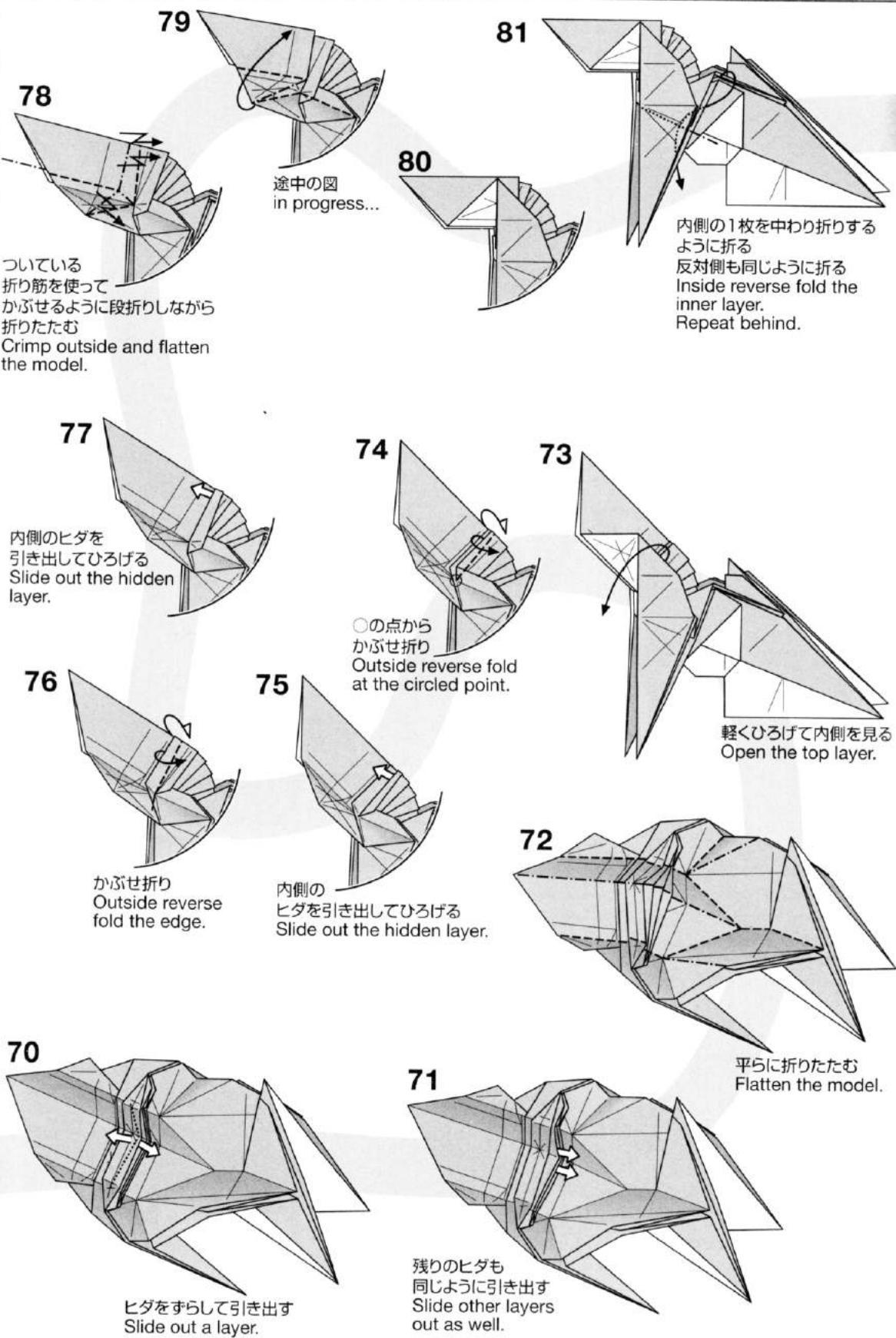


48の
ような形に折りたたむ
Fold back to the shape
of 48.

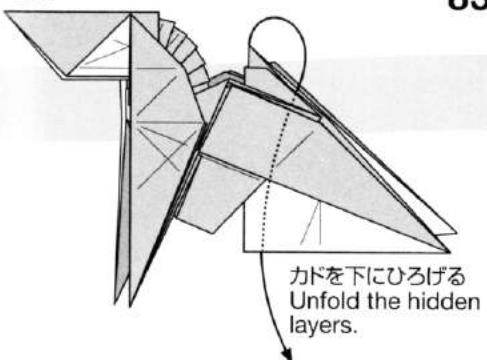
69



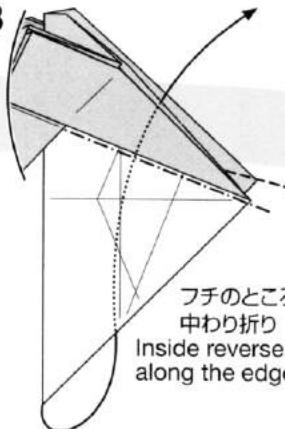
軽くひろげる
Open the layers.



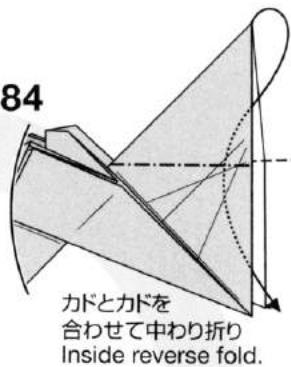
82



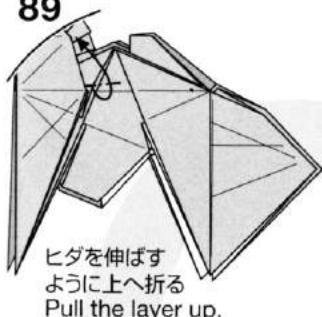
83



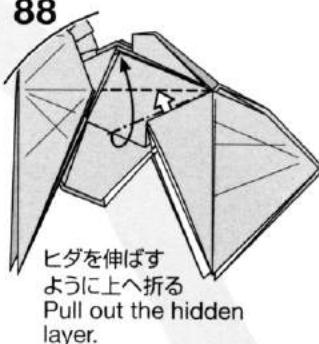
84



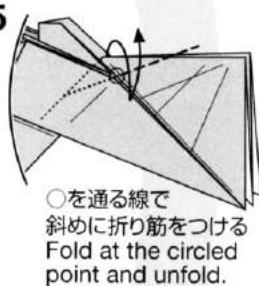
89



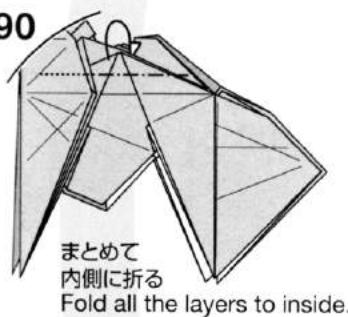
88



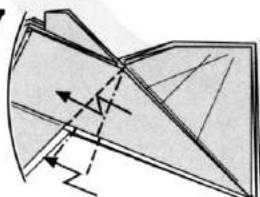
85



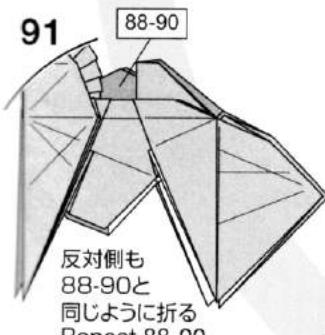
90



87

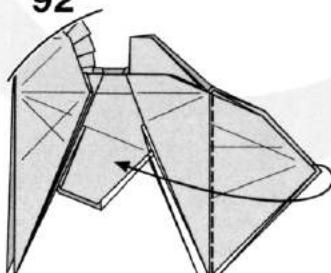


91

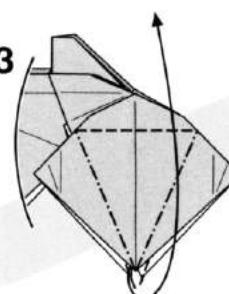


カドを反対側へ折る
Fold the corner
to the other side.

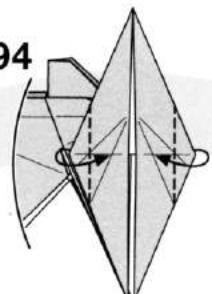
92

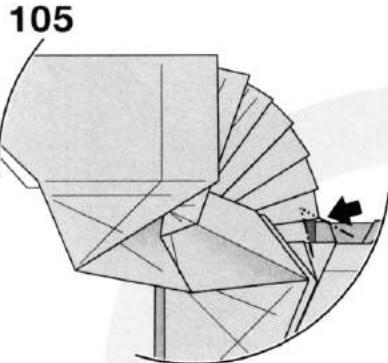


93

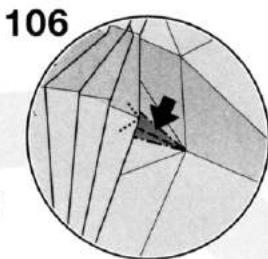


94

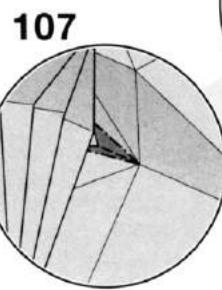
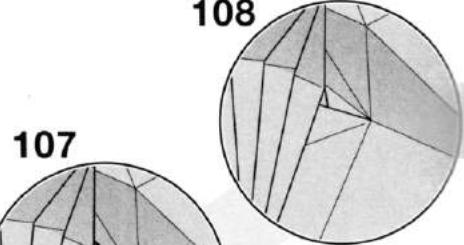




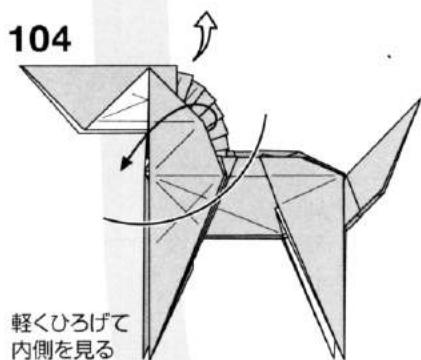
たてがみの部分を
沈めるように折る
Sink the darkened area.



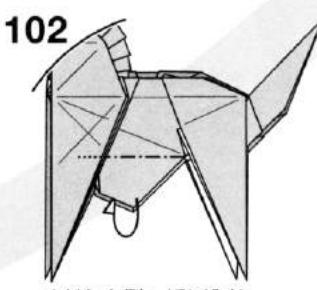
途中の図
■の部分を押し込む
ように折る
In progress.
Push and sink the
darkened area.



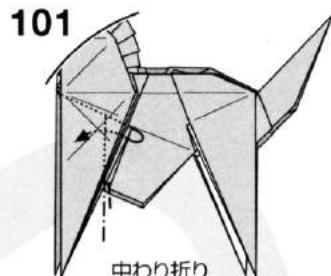
途中の図2
In progress 2.



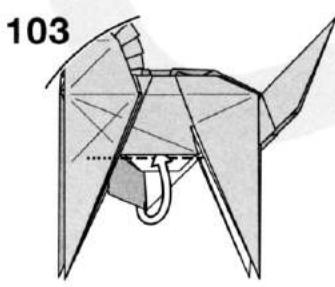
軽くひろげて
内側を見る
Open the top layer.



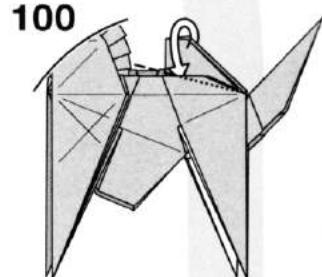
カドを内側へ折り込む
Fold the corner
to inside.



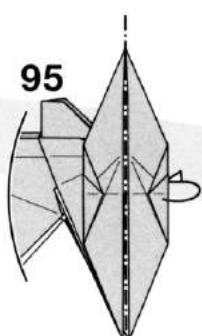
中わり折り
反対側も同じように折る
Inside reverse fold.
Repeat behind.



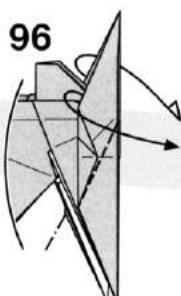
カドを内側へ折り込む
Fold the corner
to inside.



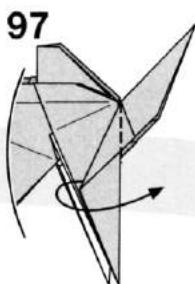
カドを内側へ折り込む
Fold the corner to inside.



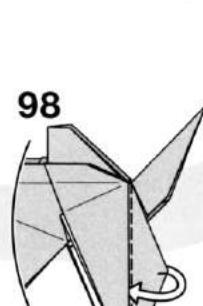
フチを後ろへ折る
Mountain fold
the layer.



かぶせ折り
Outside reverse
fold.



カドを反対側へ折る
Fold the corner
to the other side.

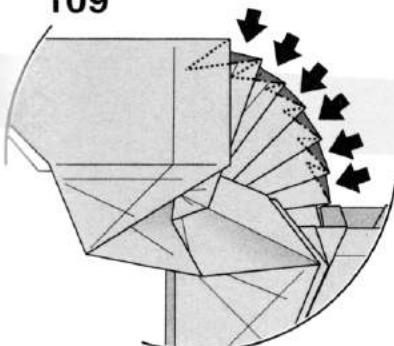


カドを
すき間へ折り込む
Fold the corner
to inside.



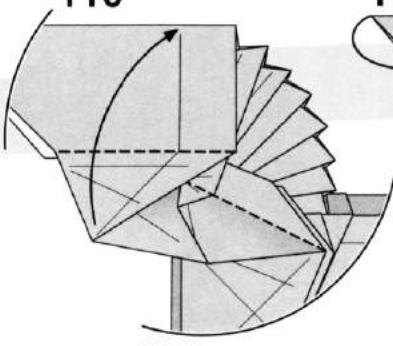
反対側も
97-98と
同じように折る
Repeat 97-98
behind.

109



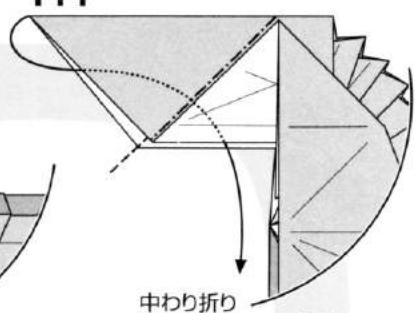
残りの部分も
同じように折る
Repeat on all pleats.

110



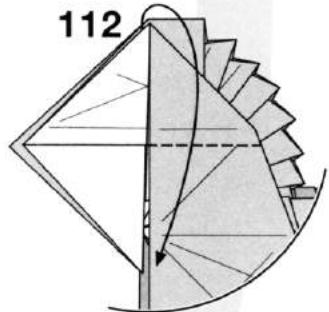
閉じる
Close the layer.

111



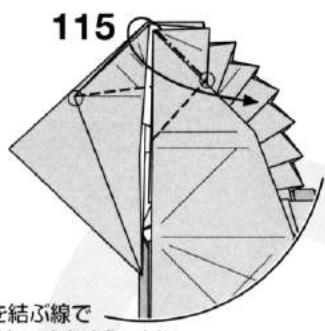
中わり折り
Inside reverse fold.

112



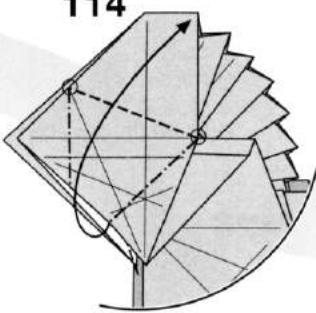
カドを下へ折る
Fold the corner down.

115



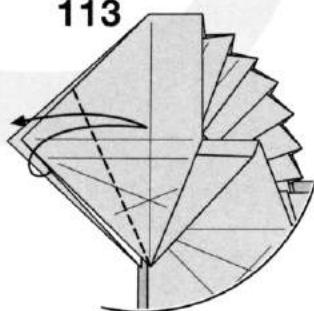
○を結ぶ線で
カドをつまむように折る
Pinch the corner and fold
it to the right.

114



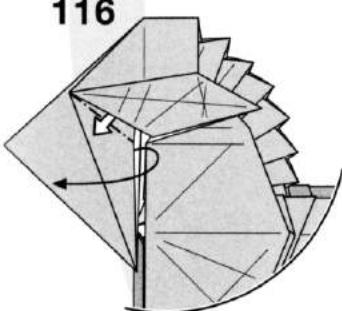
○を結ぶ線で内側をひろげて
つぶすように折る
Fold along the line connecting
the circled points
and squash.

113



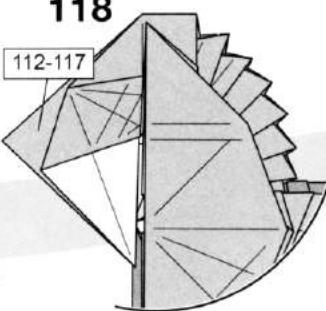
チを折り筋に合わせて
折り筋をつける
Fold the edge to the crease
and unfold.

116



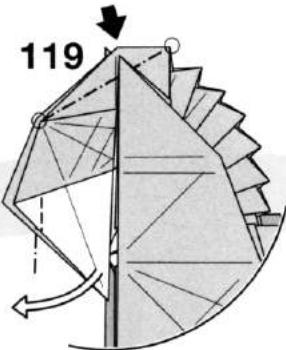
内側の紙を引き出す
Pull out the inner layer.

118



112-117
反対側も112-117と
同じように折る
Repeat 112-117
behind.

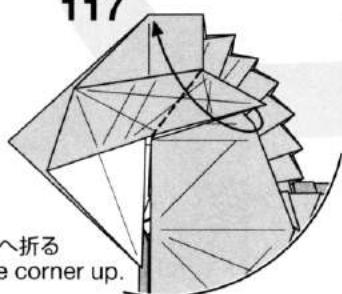
119

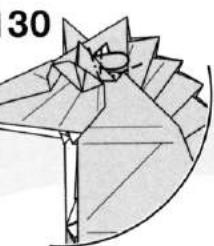
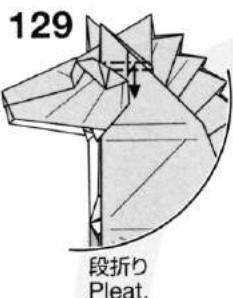


○を結ぶ線でカドを
すらすように折る
Rotate the head and
swivel.

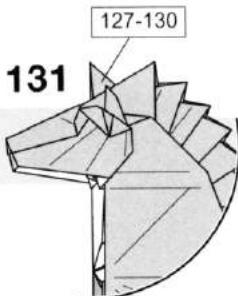
カドを上へ折る
Fold the corner up.

117

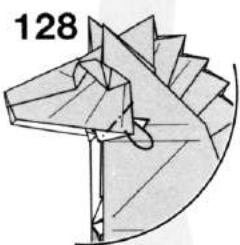
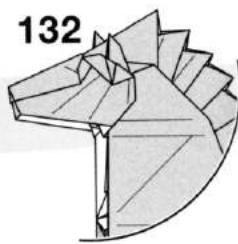




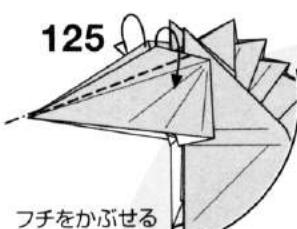
フチを後ろへ
折り込む
Fold the edge inside.



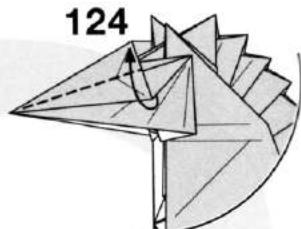
反対側も127-130と
同じように折る
Repeat 127-130
behind.



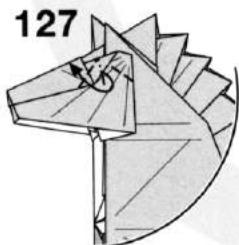
カドを後ろへ折る
Fold the corner
to behind.



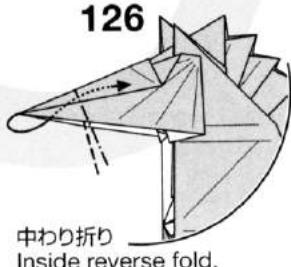
フチをかぶせる
ように折る
Fold the layers down.



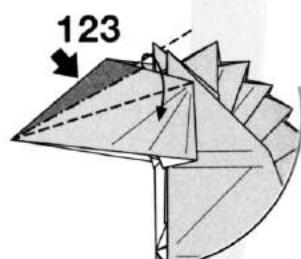
カドを上へ折る
Fold the layer up.



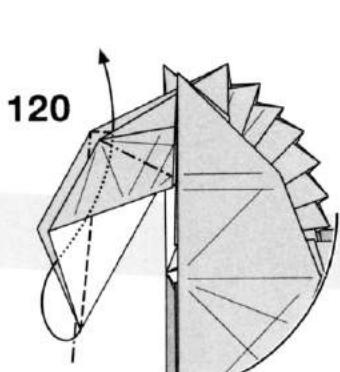
内側をひろげて
つぶすように折る
Open and squash.



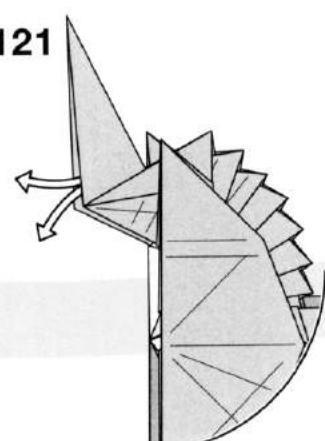
中わり折り
Inside reverse fold.



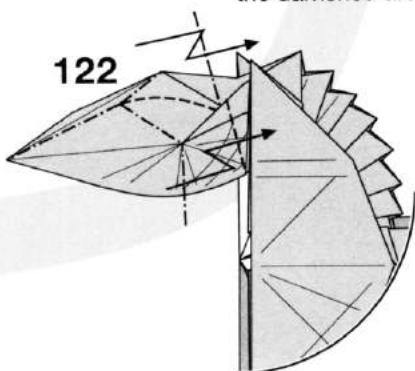
フチをひろげて
つぶすように折る
Open and squash
the darkened area.



両側でつまむように
中わり折り
Inside reverse fold and
narrow the flap.

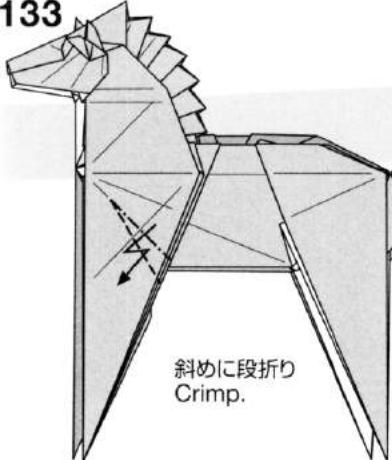


内側の紙を引き出す
Pull out the inner layers.

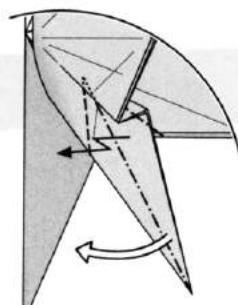


両側で段折りするように
折りたたむ
Crimp outside.

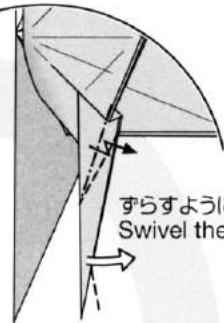
133



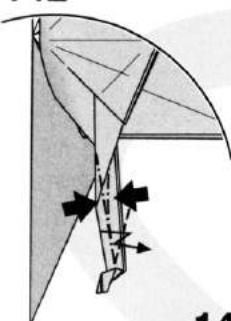
134



135



142



141



140



カドを後ろへ
折る
Fold the tip to behind.

139



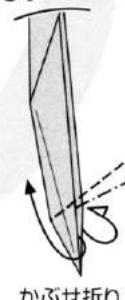
後ろの部分を
すらすように折る
Show the layer behind by swiveling.

138



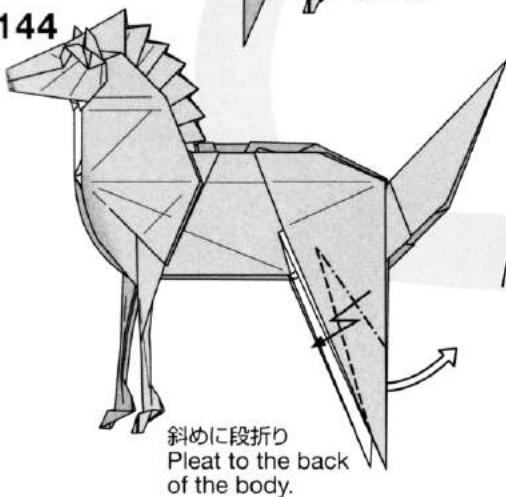
かぶせ折り
Outside reverse
fold.

137

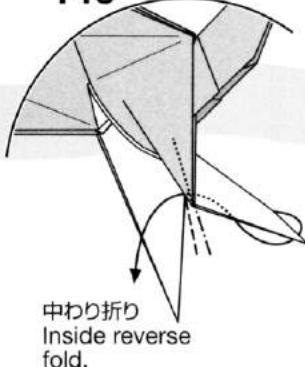


かぶせ折り
Outside reverse
fold.

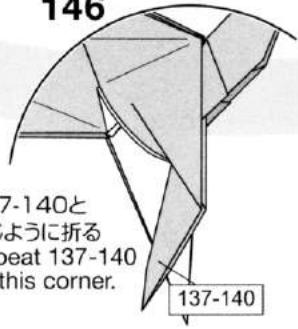
144



145

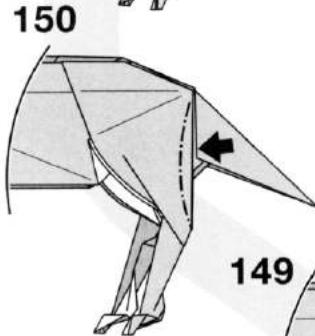
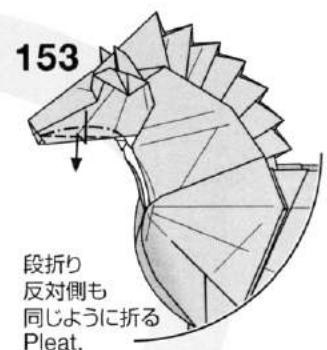
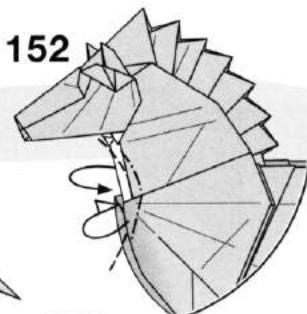
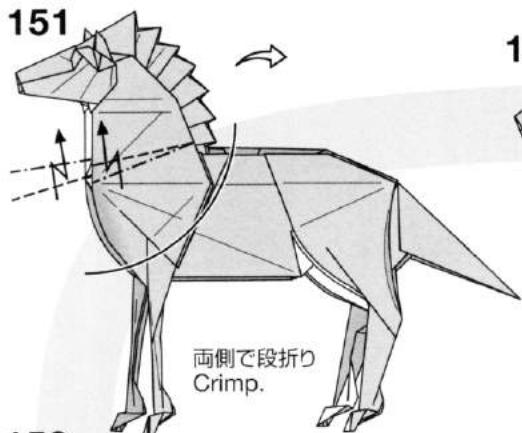


146

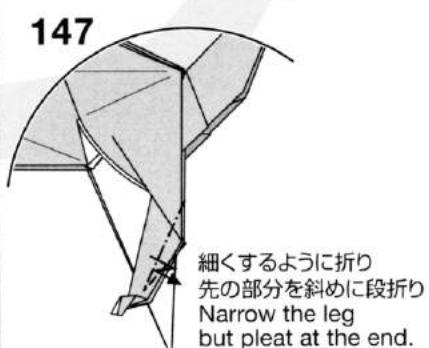
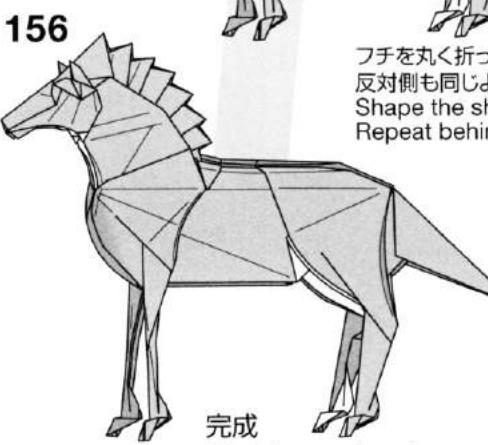
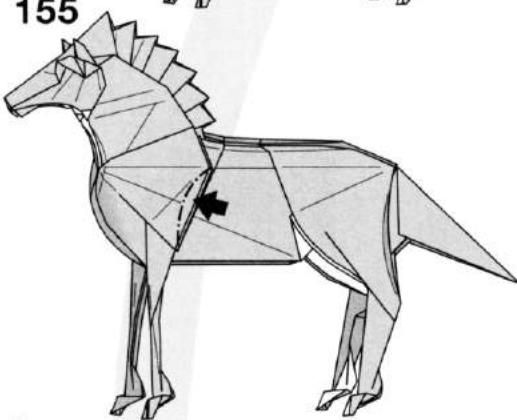
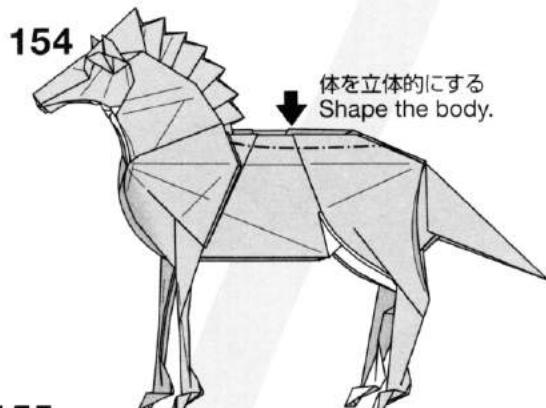


137-140

ウマ



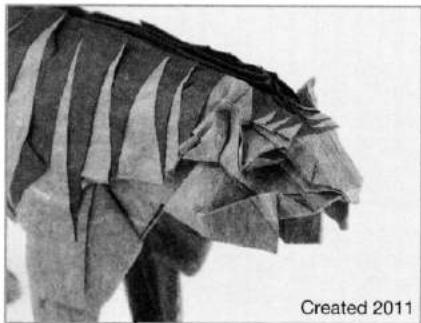
後肢を立体的にする
反対側も同じように
折る
Shape the hind
leg.
Repeat behind.



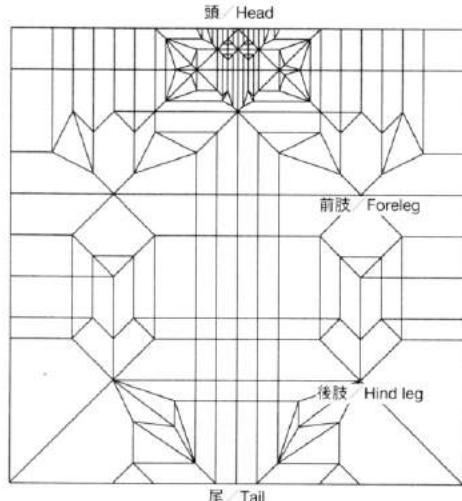
完成
Model completed.

トラ

Tiger



Created 2011



この作品は、ニワトリと同じように、干支の折り紙の制作依頼のために創作したものです。縞を折り出したトラは、ジョン・モントロール氏、小松英夫氏、川畑文昭氏など、多くの作例があります。依頼とはいえせっかく創作する以上、模様以外にももう一つくらいにか、自分にとって面白いと思える要素を盛り込みたいものです。

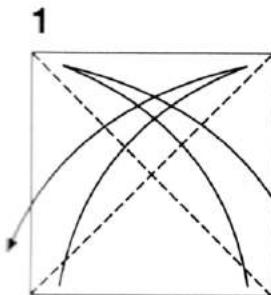
本作では、四肢を動かしやすくなるという点を意識して創作を行いました。結果的には、縞の折り出しを胴体と後ろ足に分けて、後ろ足の部分の縞を太ももと一体化した形で折り出すことによって、動きのつけやすい仕上がりを得ることができました。折り図では説明していませんが、段折り等で動きをつけみるとよいでしょう。

また、折り図の特徴としては、60ステップ以上となる非常に長い繰り返しが存在します。本来、あまりに長い繰り返しは好みいものではないのですが、反対側に飛び出す部分があるため、途中での切り分けができる手順になります。リズムよく一気に折って下さい。

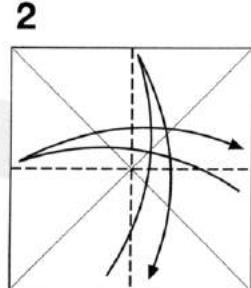
I designed this tiger for some project of Chinese Zodiac origami models. We already have models of a tiger with stripes by John Montroll, Hideo Komatsu, Fumiaki Kawahata, among others. I wanted to have some original features of mine when I designed my tiger.

I kept mobility of the four legs in mind when I was planning the design of this model. To achieve this goal, I separated the area for stripes on the body and ones for the hind legs. By folding out stripes on the hind legs and the thighs at once, I succeeded in maintaining mobility of the legs. Try changing positions of the legs by pleating and other methods.

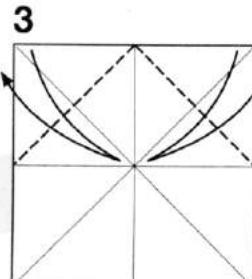
I could not help having a repetitive part in the diagrams for more than 60 steps. I could not divide them into parts because flaps and layers will always go to the other side of the model beyond the center line after each step. Try folding them keeping your own pace.



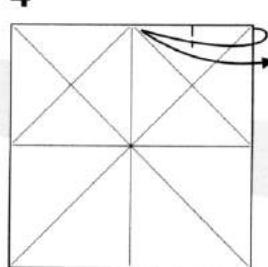
三角に折り筋をつける
Fold in halves and unfold.



半分に折り筋をつける
Fold in halves and unfold.



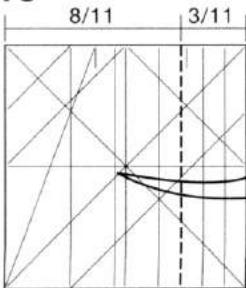
カドを中心に行わせて
折り筋をつける
Fold the corners to
the center and unfold.



カドを中心に行わせて
印をつける
Fold the corner
to the center line but
only mark on the edge.
Unfold.

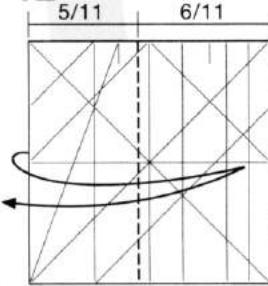
トラ

13



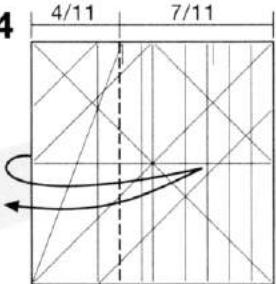
フチをつけた折り筋に
合わせて折り筋をつける
Fold the edge to the
crease.
Unfold.

12



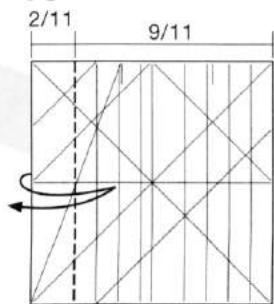
フチをつけた折り筋に
合わせて折り筋をつける
Fold the edge to the
crease.
Unfold.

14



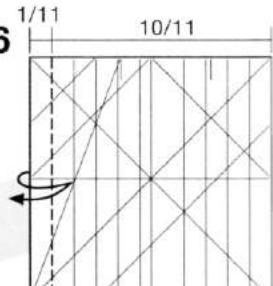
フチをつけた折り筋に
合わせて折り筋をつける
Fold the edge to the
crease.
Unfold.

15



フチをつけた折り筋に
合わせて折り筋をつける
Fold the edge to the
crease.
Unfold.

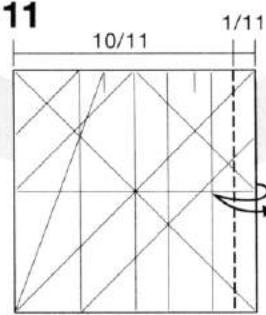
16



フチをつけた折り筋に
合わせて折り筋をつける
Fold the edge to the
crease.
Unfold.

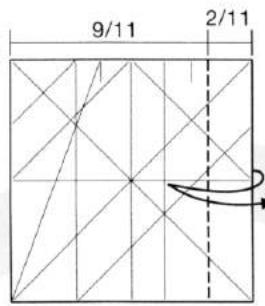
10

11



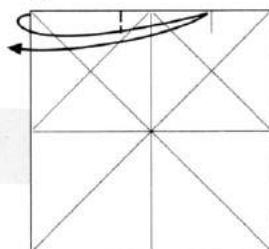
フチをつけた折り筋に
合わせて折り筋をつける
Fold the edge to the
crease.
Unfold.

9



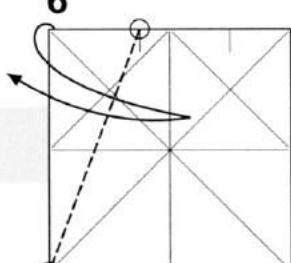
フチをつけた折り筋に
合わせて折り筋をつける
Fold the edge to the
crease.
Unfold.

5



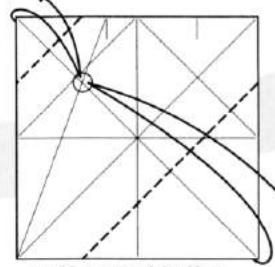
カドをつけた印に合わせて
印をつける
Fold the corner to the
mark and unfold.

6



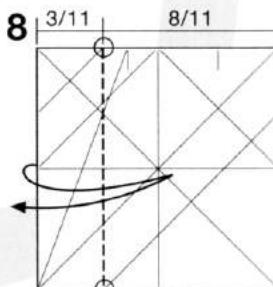
○を結ぶ線で折り筋をつける
Fold along the line
connecting the circled
points.
Unfold.

7



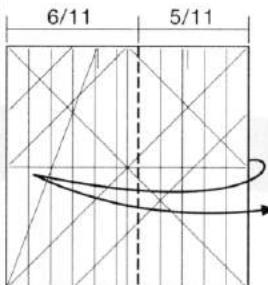
カドをつけた折り筋と
対角線の交点に合わせて
折り筋をつける
Fold the corners
to the circled point.
Unfold.

8



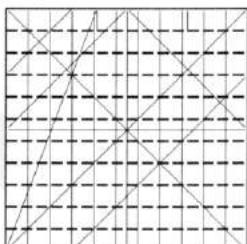
○を結ぶ線で折り筋をつける
Fold along the line
connecting the circled
points.
Unfold.

17



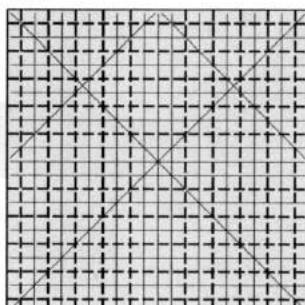
フチをつけた折り筋に
合わせて折り筋をつける
Fold the edge to the
crease.
Unfold.

18



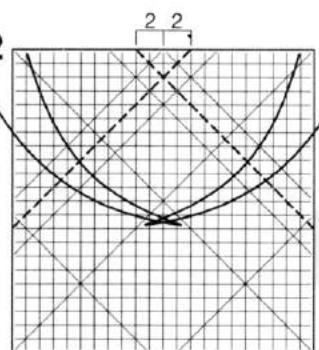
8-17と同じようにして
11等分の横向きの
折り筋をつける
Repeat 8-17 on the
other direction.

19



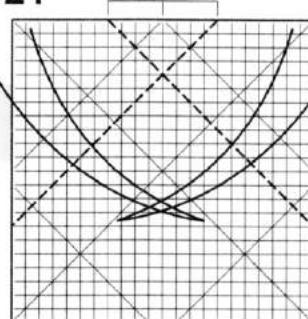
さらに半分の幅で折り筋をつける
Crease at the half of the width.

22



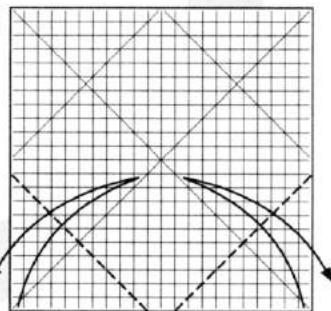
図のように斜めに折り筋をつける
Crease as shown.

21



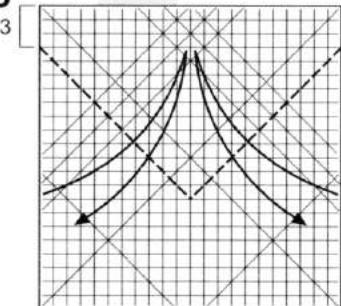
図のように斜めに
折り筋をつける
Crease as shown.

20



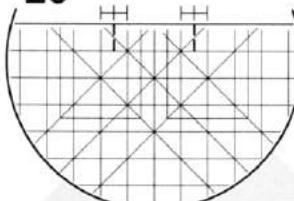
中心から1マス空けて
折り筋をつける
Fold and unfold starting
from the crosses next
to the center line.

23



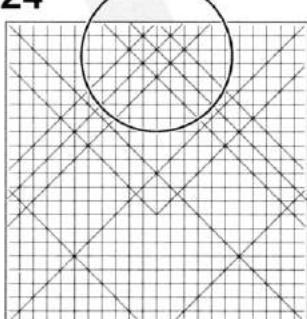
図のように斜めに折り筋をつける
Crease as shown.

26

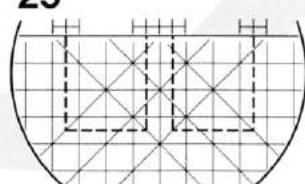


半分の幅で
折り筋をつける
Crease at the
half of the width.

24

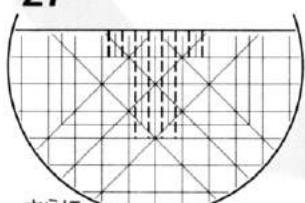


25

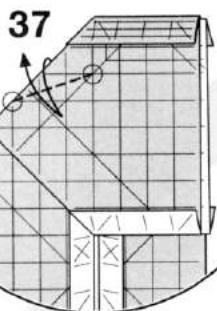


半分の
幅で折り筋をつける
Crease at the half
of the width.

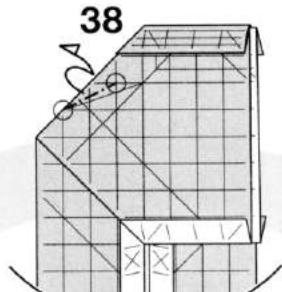
27



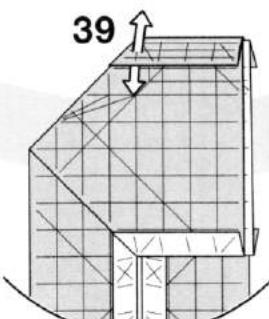
さらに
半分の幅で折り筋をつける
Crease at the half of the
width.



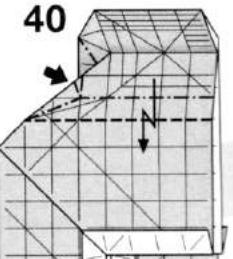
○を結ぶ線で折り筋をつける
Fold and unfold along the line connecting the circled points.



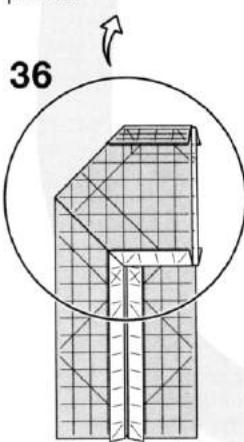
○を結ぶ線で後ろへ
折り筋をつける
Fold behind along
the line connecting
the circled points.
Unfold.



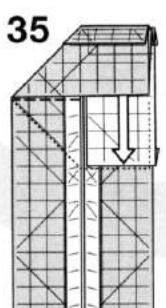
ヒダをひろげる
Open the layers.



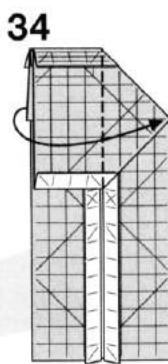
ついている折り筋を使って
平らに折りたたむ
Assemble using the
creases and flatten.



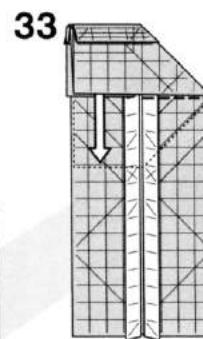
36



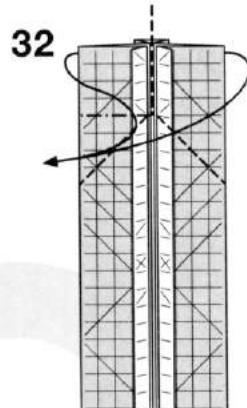
内側の紙を引き出す
Pull out the inner
layer.



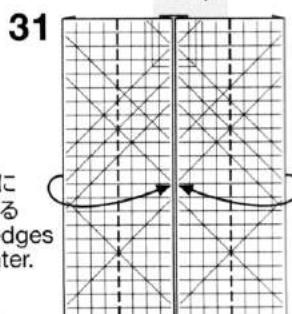
反対側へ折る
Fold the flap
to the other side.



内側の紙を引き出す
Pull out the inner
layer.

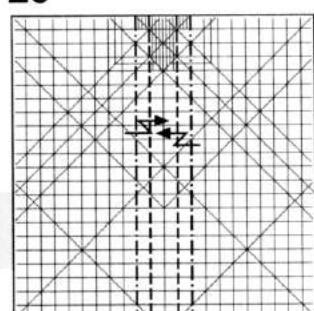


つまむように折る
Rabbit-ear fold
to the left.

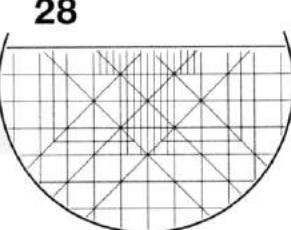


フチを中心に
合わせて折る
Fold the edges
to the center.

29

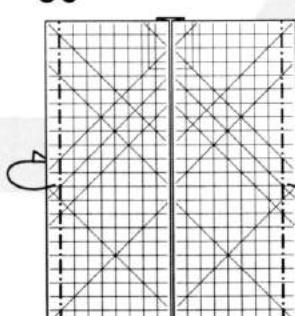


ついている折り筋で段折り
Pleat using the creases.

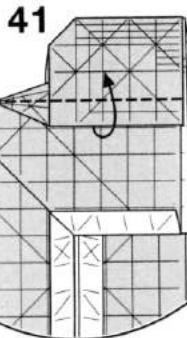


28

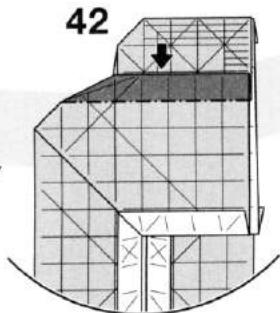
30



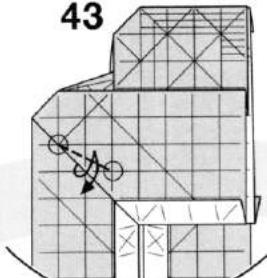
フチを後ろへ
折る
Fold the edges
to behind.



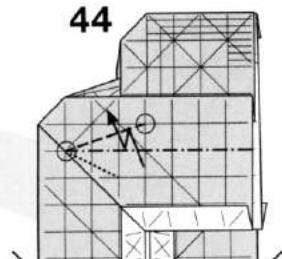
フチを上へ折る
Fold the edge up.



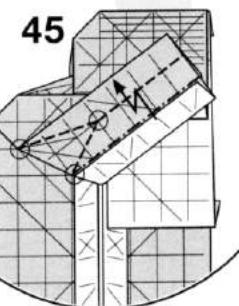
フチを反対側へ
押し込む
Closed sink the
darkened area.



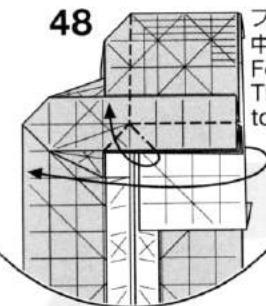
○を結ぶ線で折り筋をつける
Fold and unfold along the
line connecting the circled
points.



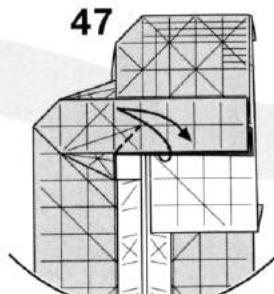
○を結ぶ線で斜めに段折り
Pleat the top layer using
the line connecting the
circled points.



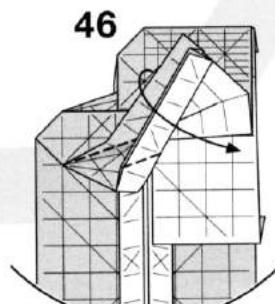
○を結ぶ線で
ヒダを引き寄せる
ように折る
Fold at the circled
points and swivel
the lower edge.



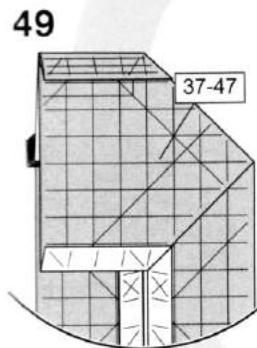
フチを上へ折りながら
中心の部分を反対側へ折る
Fold the edge up.
The raised layer will
go to the left.



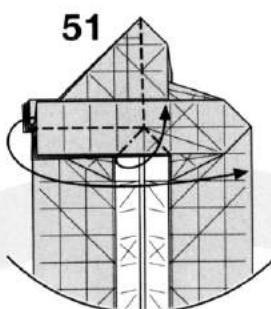
斜めに折り筋をつける
Fold and unfold.



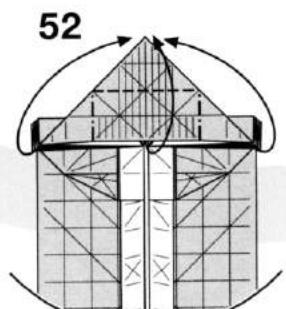
平らに折りたたむ
Flatten the model.



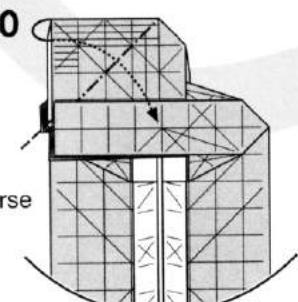
反対側も37-47と
同じように折る
Repeat 37-47
on the other side.



フチを上へ折りながら
中心の部分を反対側へ
折る
Fold the edge up.
The raised layer will
go to the right.

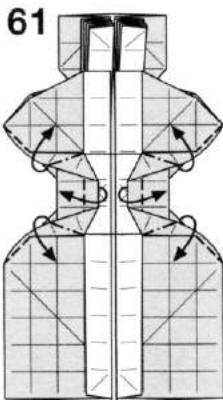


フチと両側のカドを
上へ折って折りたたむ
Fold the layer up
and flatten.

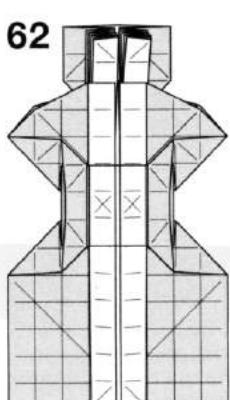


中わり折り
Inside reverse
fold.

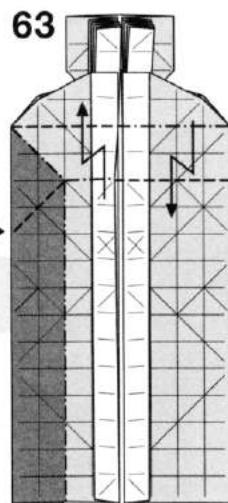
トラ



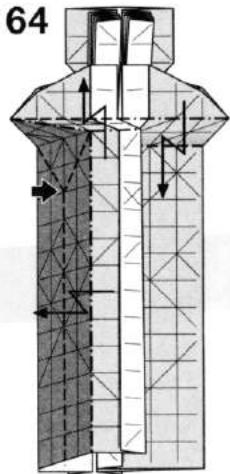
平らに折りたたむ
Flatten the model.



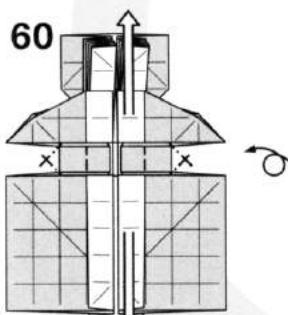
54の形に戻す
Unfold to 54.



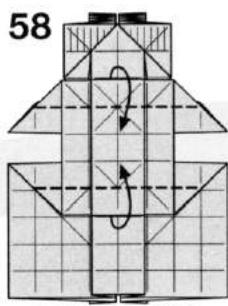
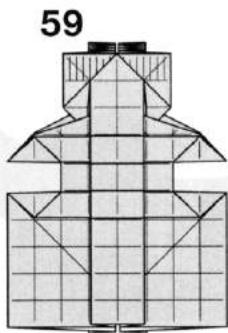
ついている折り筋を使って
フチを押し込むように
折りたたむ
Sink the darkened area
while pleating the top part.



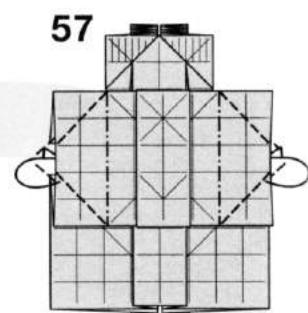
途中の図
In progress...



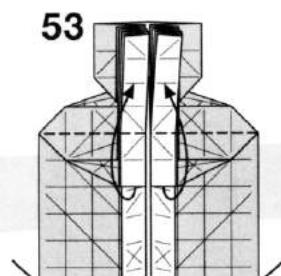
伝承の「宝船」のように
ヒダをひろげる
Pull the layers out.



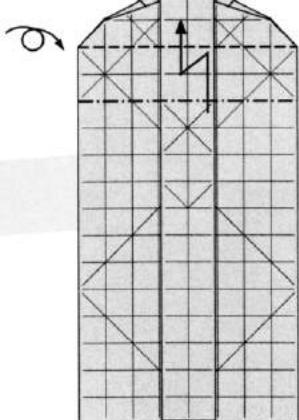
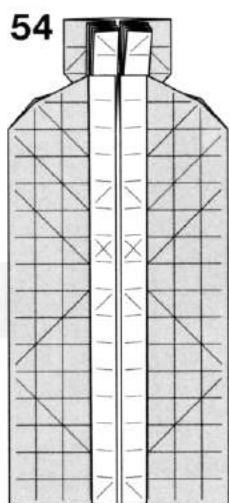
フチをついている
折り筋で折る
Fold along the
existing crease lines.



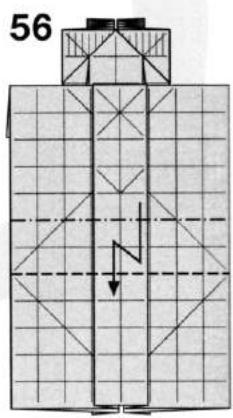
フチを後ろへ折る
Fold the layers
inside.



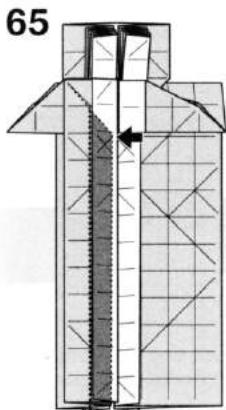
フチを上へ折る
Fold the layers up.



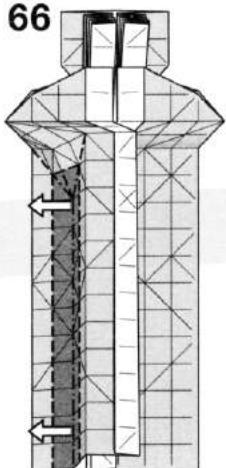
段折り
Pleat.



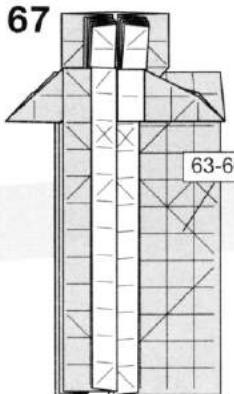
段折り
Pleat.



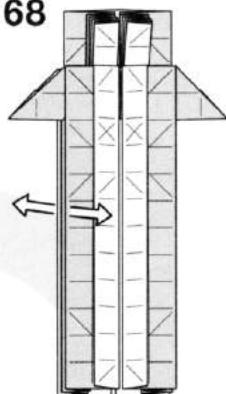
内側のフチを沈め折り
(Open sink)
Open sink the hidden layer.



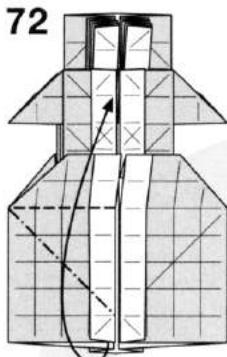
途中の図
In progress...



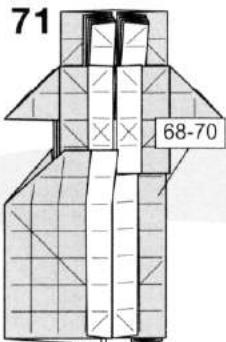
反対側も63-66と
同じように折る
Repeat 63-66
on the other side.



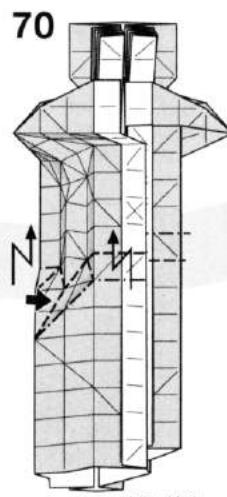
ヒダをかるくひろげる
Open the pleats.



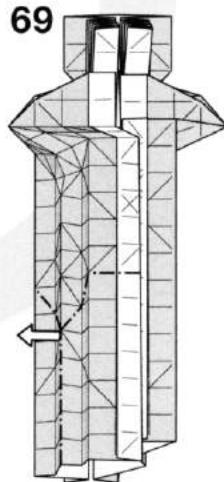
内側をひろげて
つぶすように折る
Open and squash.



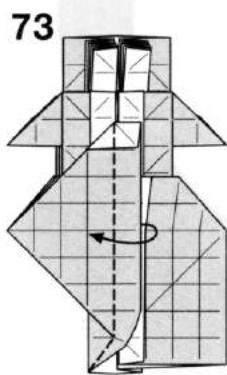
反対側も68-70と
同じように折る
Repeat 68-70
on the other side.



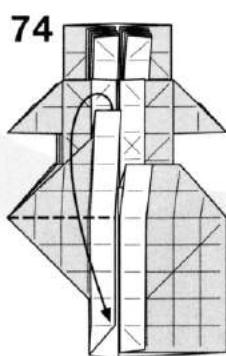
ついている折り筋を
使って折りたたむ
Assemble using
the existing creases.



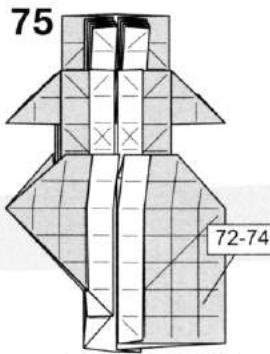
ついている折り筋で
山折り線をつけ直す
Crease the mountain
lines.



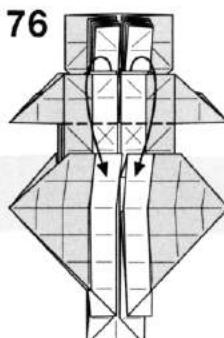
フチを反対側へ折って
平らにする
Fold the edge
to the other side
and flatten.



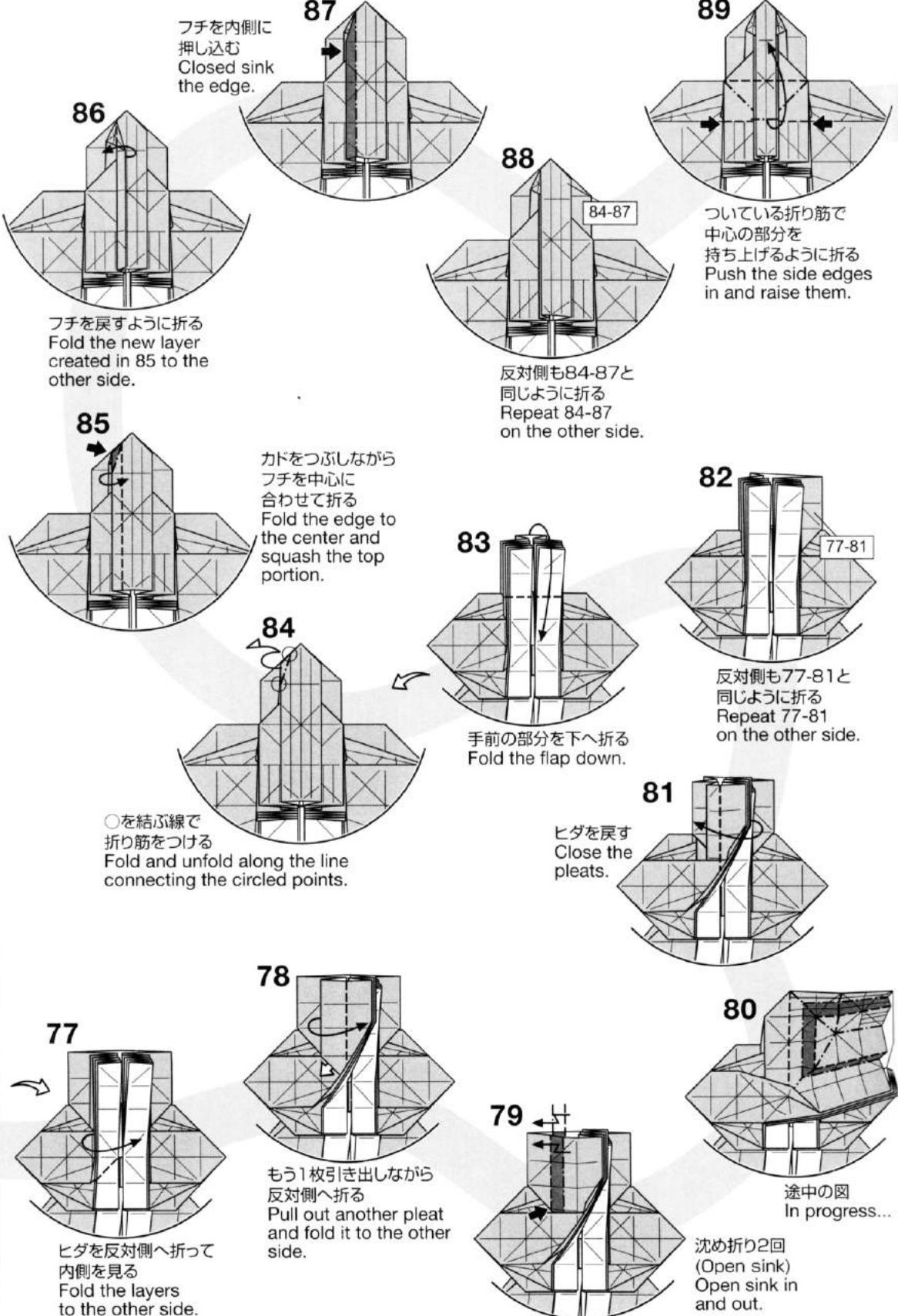
カドを下へ折る
Fold the flap
down.



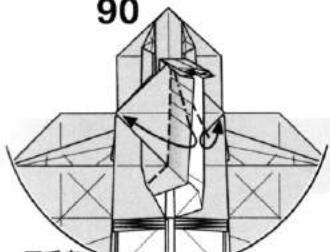
反対側も72-74と
同じように折る
Repeat 72-74
on the other side.



フチを下へ折る
Fold the edges
down.

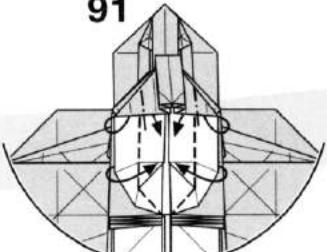


90



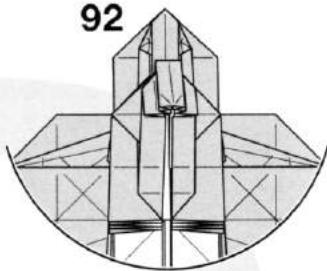
フチを
両側にひろげるように折る
Open and squash.

91

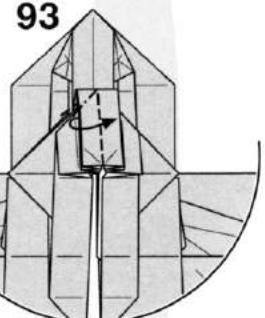


フチを中心に合わせて
平らに折りたたむ
Fold the edges to
the center.
Inside reverse fold
the top portion.

92

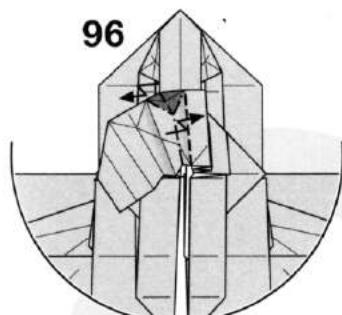


93



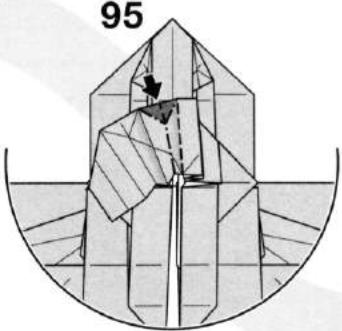
フチを反対側へ折って
上の部分をつぶす
ように折る
Fold the pleats
to the other side
and squash

96



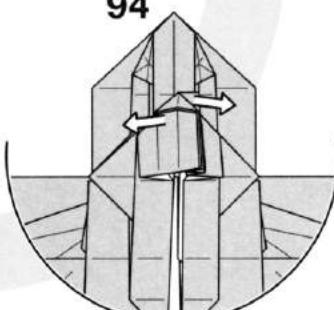
途中の図
In progress...

95



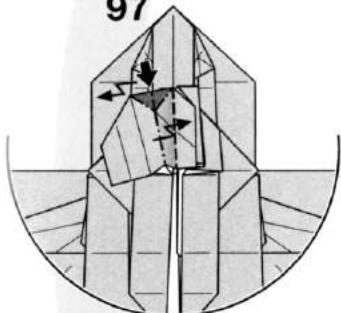
■の部分をつぶして
両側で折りたたむ
Push in the darkened
area and pleat.

94



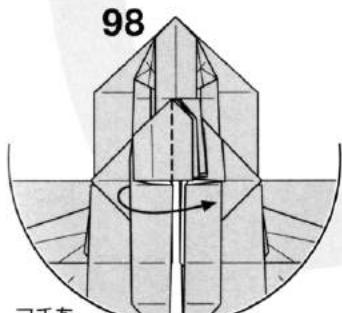
ヒダをひろげる
Open the layers.

97



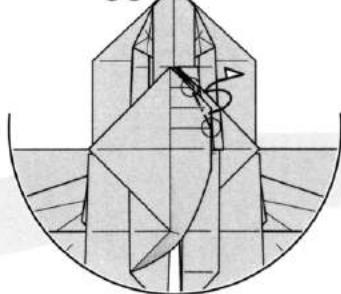
次のヒダも同じように折りたたむ
Repeat on the next pleat.

98



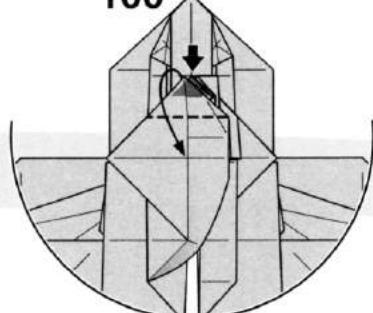
フチを
反対側へ折って内側を見る
Fold the layers to the
other side.

99

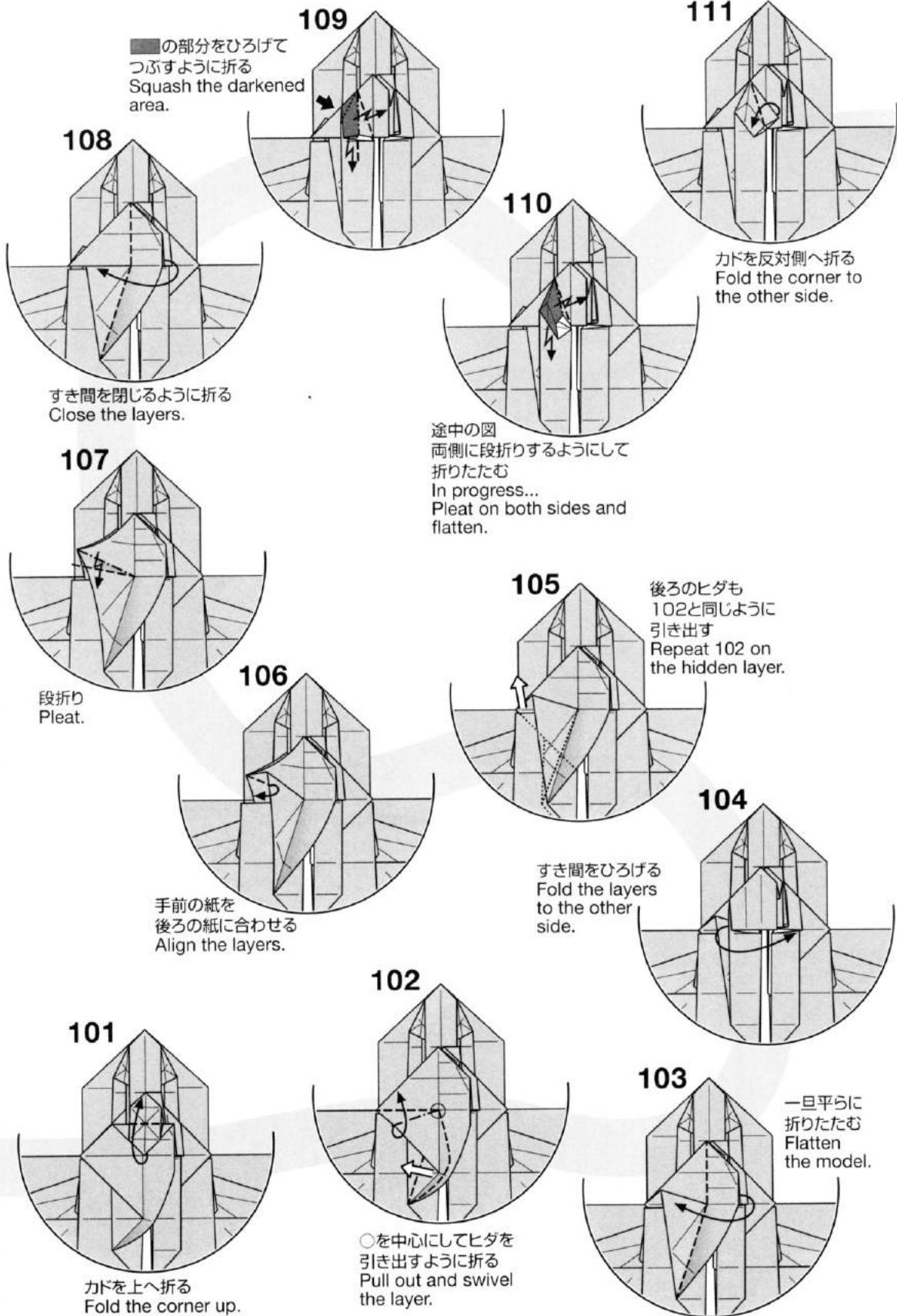


○を結ぶ線で折り筋をつける
Fold and unfold
along the line connecting
the circled points.

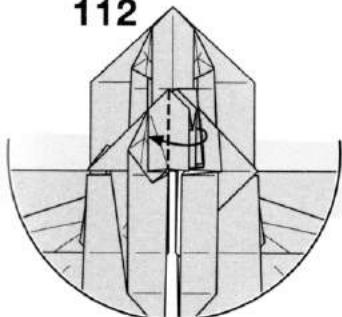
100



二番目のカドをつぶしながら
手前のカドを下へ折る
Spread sink the corner.

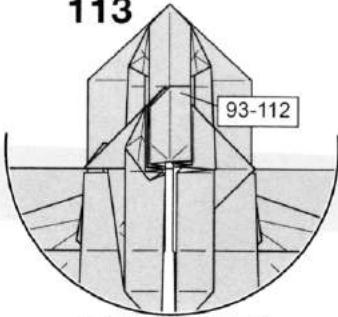


112



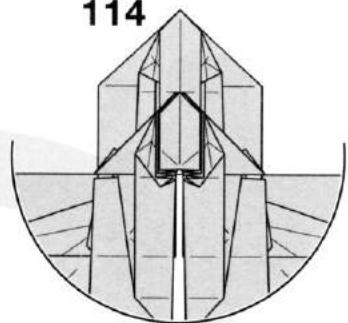
中心のすき間で
反対側へ折る
Fold the flaps
to the other side.

113

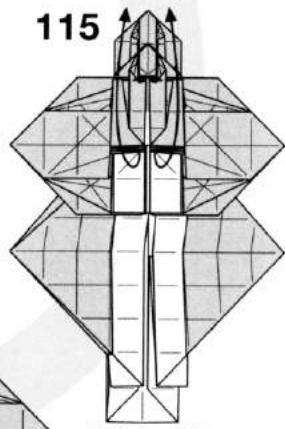


反対側も93-112と
同じように折る
Repeat 93-112
on the other side.

114

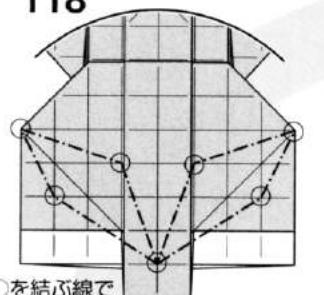


115



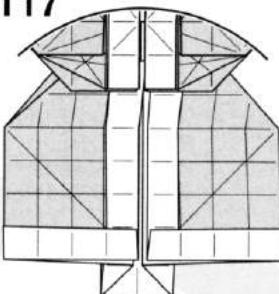
カドを上へ折る
Fold the layers
up.

118

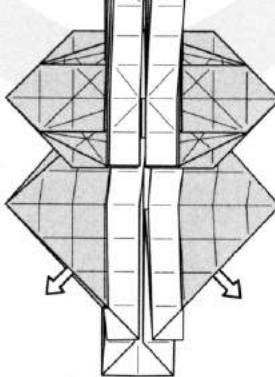


○を結ぶ線で
手前の部分に折り筋をつける
Crease along the lines
connecting the circled points.

117

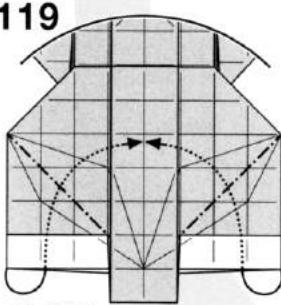


116



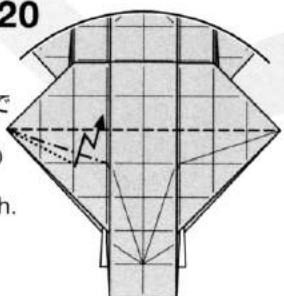
内側のカドを引き出す
Pull out inner layers.

119



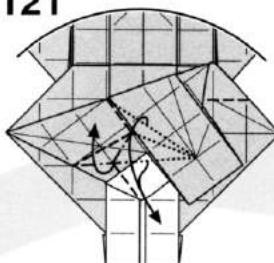
中わり折り
Inside reverse
fold.

120



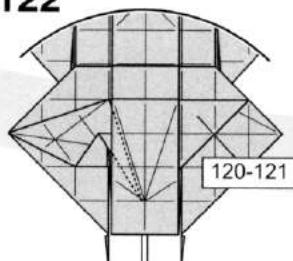
ついている折り筋で
内側をひろげて
ずらすように段折り
Open the layer,
pleat and squash.

121

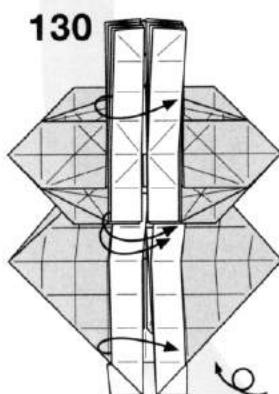
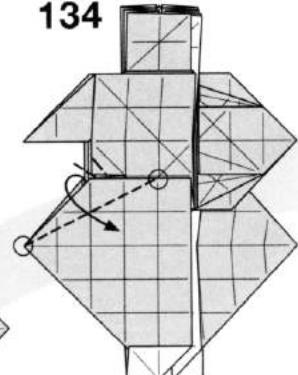
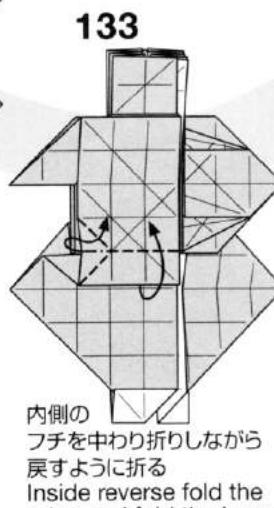
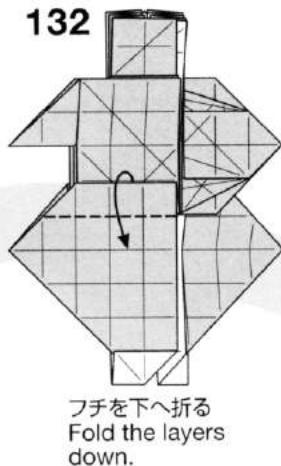
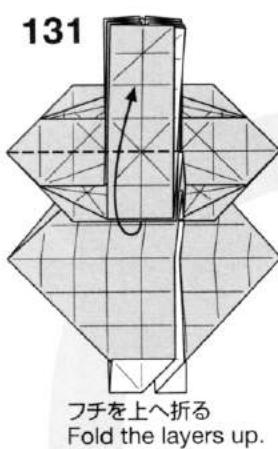


ついている折り筋で
つまむように折りたたむ
Rabbit-ear fold.
The top layer will head
straight down as a result.

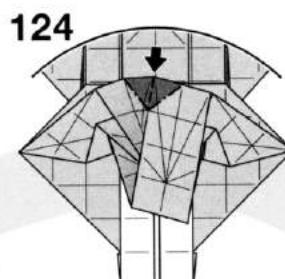
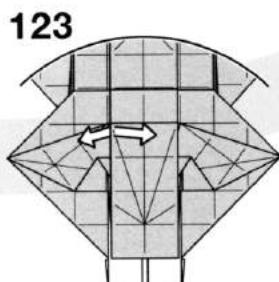
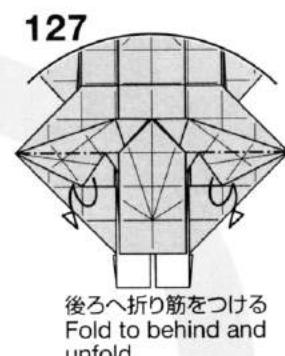
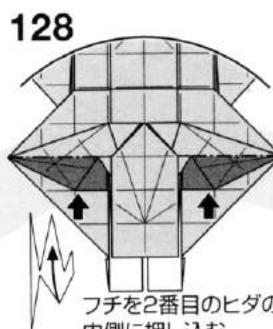
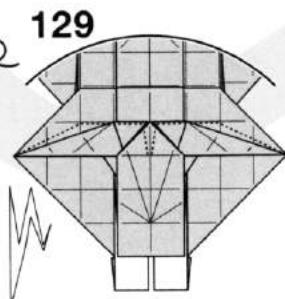
122



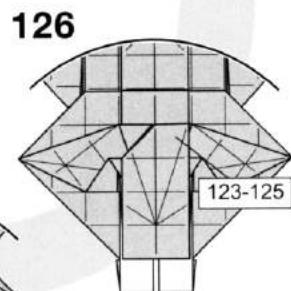
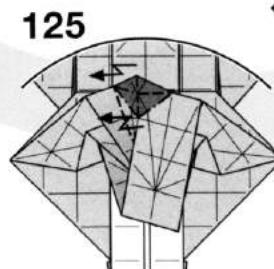
反対側も120-121と
同じように折る
Repeat 120-121
on the other side.

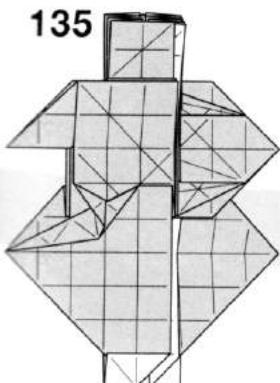


フチをひろげる
山の部分が
破れやすいので
いったんひろげて
行うとよい
Unfold the layers.
Do it by loosening
the cluster of layers.

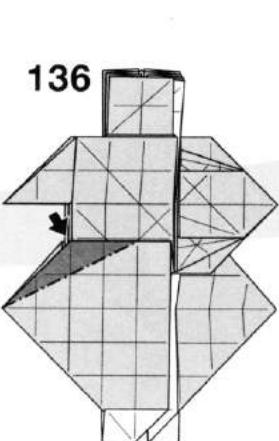


■の部分をつぶして
両側で折りたたむ
Push in the darkened
area.

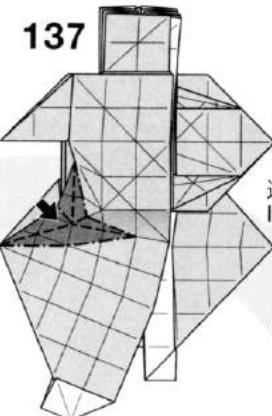




132の形に戻す
Unfold the layers up
to the shape of 132.

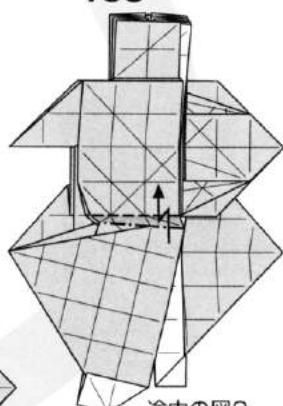


沈め折り
(Open sink)
Open sink.

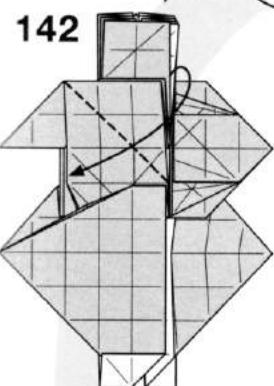


途中の図1
In progress...

138



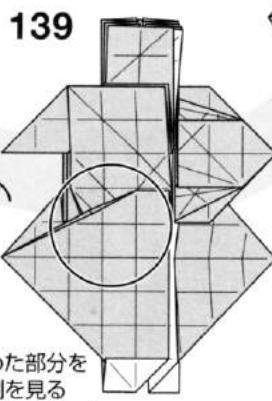
途中の図2
In progress...



まとめて
斜めに折る
Fold the layers
down.

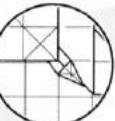


カドをひろげて
つぶすように折る
Squash the
tip and flatten.

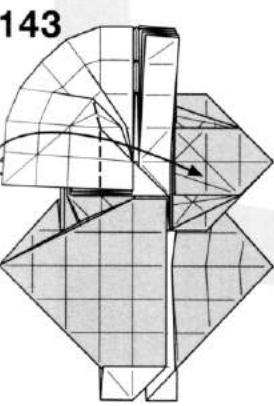


沈めた部分を
内側を見る
The inside view.

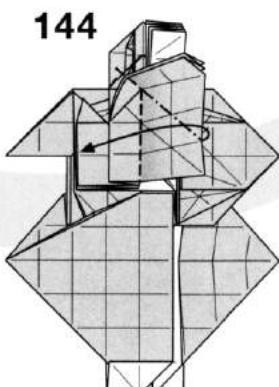
141



カドをひろげて
つぶすように折る
Squash the
tip and flatten.

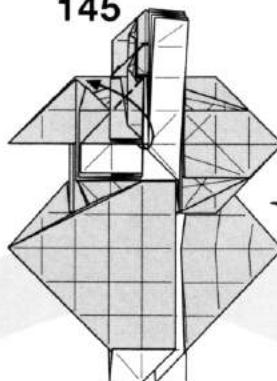


フチを反対側へ折る
Fold the edge to
the other side.



平らに折りたたむ
Flatten the model.

145

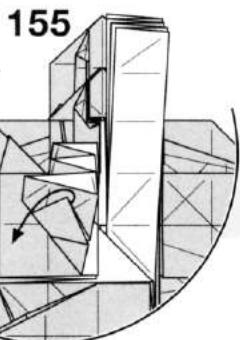


カドを反対側へ折る
Fold the flap to
the other side.

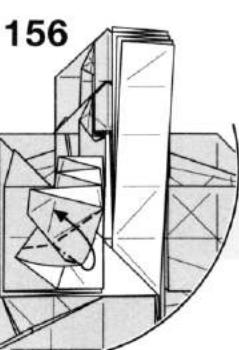
146



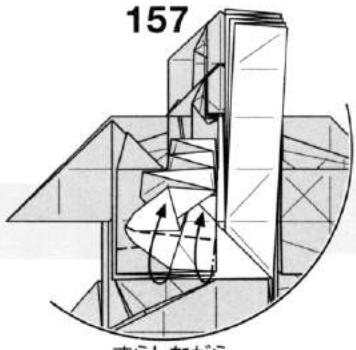
中わり折り
Inside reverse
fold.



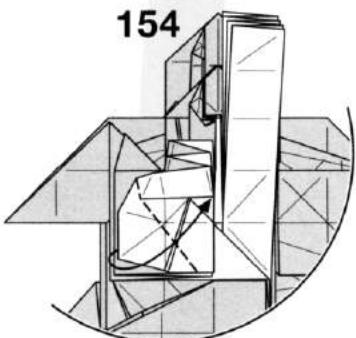
力ドを起こす
Raise the
layers.



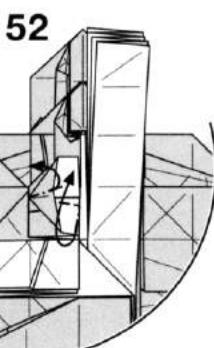
フチを少しづらして
上へ折る
Fold up and swivel.



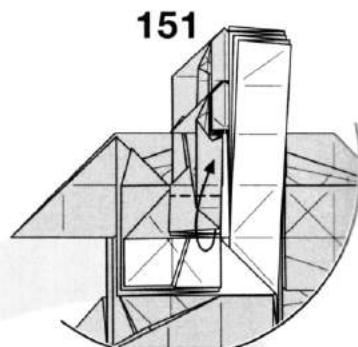
ずらしながら
次のヒダを上へ折る
Fold up.



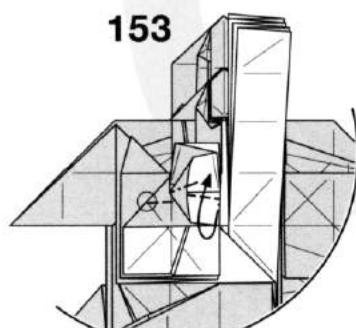
ついている
折り筋を使って
折りたたむ
Fold the layers
up.



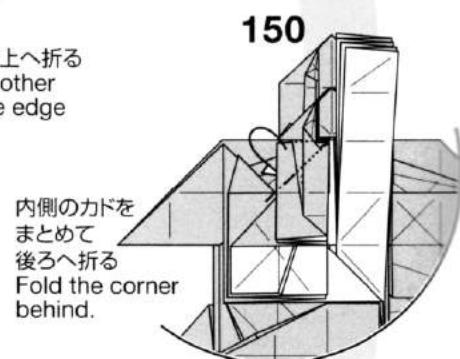
ずらしながら次のヒダを上へ折る
Fold the layer to the other
side while folding the edge
up



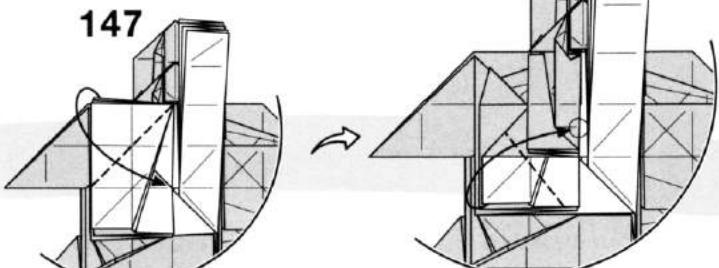
手前の1枚を上へ折る
Fold one layer up.



次のヒダも同じようにして
○を基準に上へ折る
Fold up the next layer
with the circled point
as the reference.

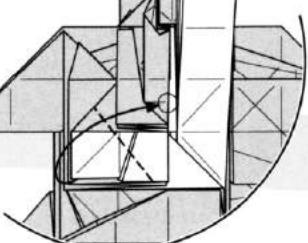


内側の力ドを
まとめて
後ろへ折る
Fold the corner
behind.

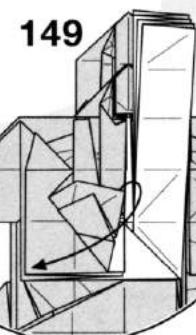


戻すように折る
Fold the corner
down.

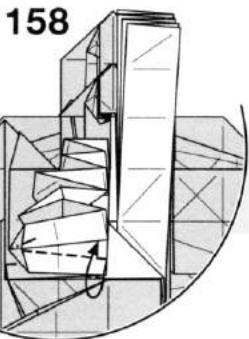
148



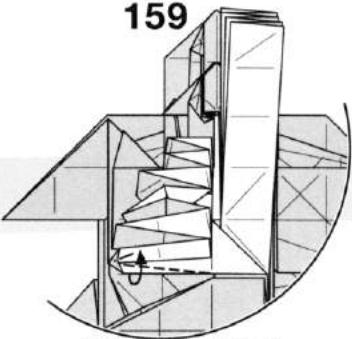
力ドを○に合わせて折る
Fold the corner to the
circled point.



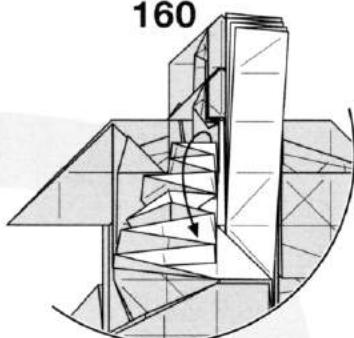
戻す
Unfold.



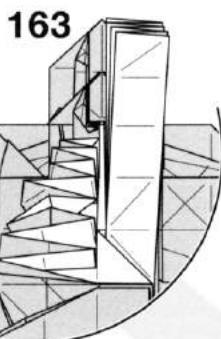
次のヒダも同じように上へ折る
Fold up and swivel.



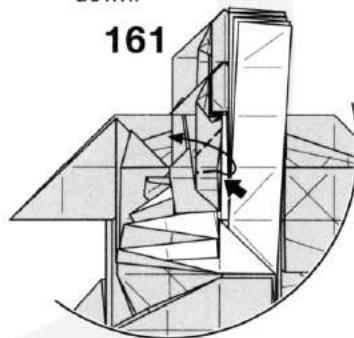
最後も同じように折る
Fold up.



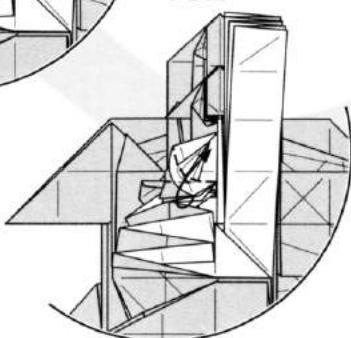
すき間をひろげる
Open the layers down.



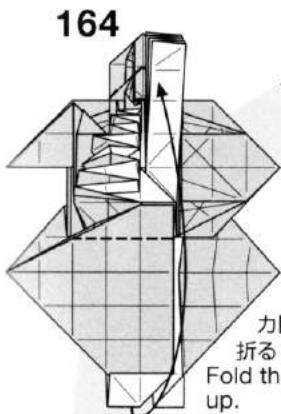
162



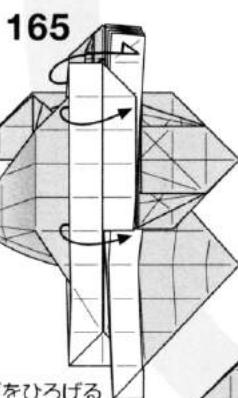
161



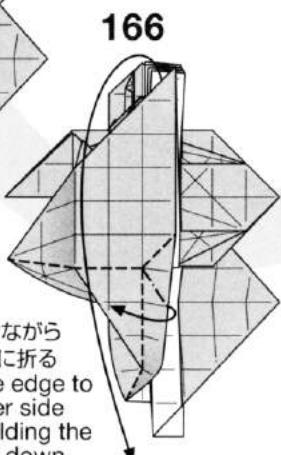
内側の部分を
ひろげてつぶしながら
フチを横へ折る
Fold the top layer
up and raise the
lower part.



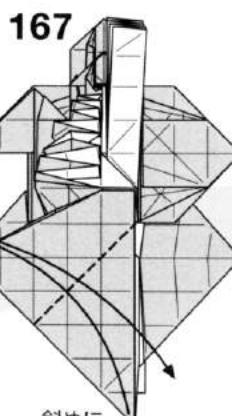
カドを上へ
折る
Fold the flap
up.



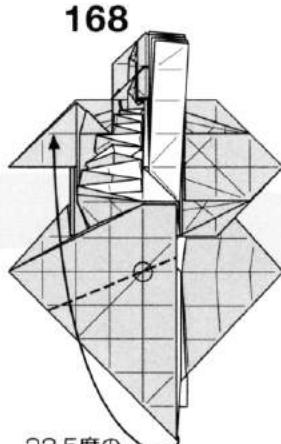
ヒダをひろげる
Open the layer.



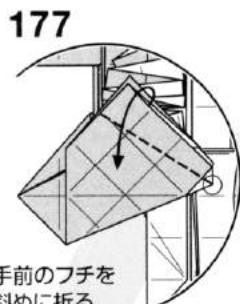
フチを
引き寄せながら
戻すように折る
Fold the edge to
the other side
while folding the
top flap down.



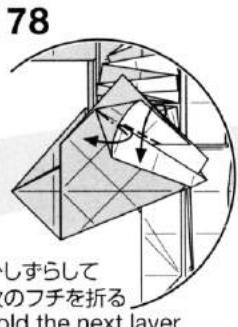
斜めに
折り筋をつける
Crease at the
crosses.



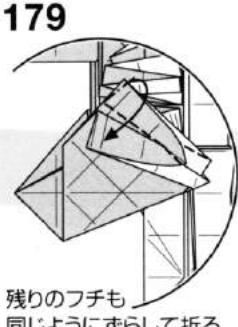
22.5度の
角度で斜めに折る
Crease at 22.5
degree.



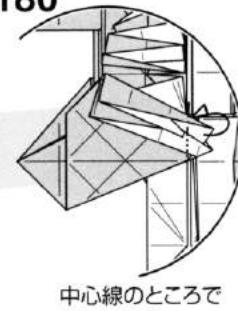
手前のフチを
斜めに折る
Fold the layer down
with the circled point
as the reference.



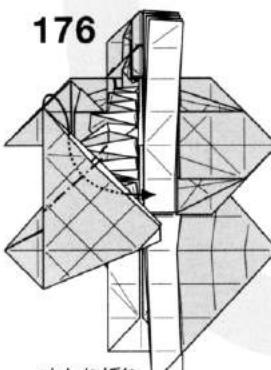
少しずらして
次のフチを折る
Fold the next layer
down along the line
a little above the edge.



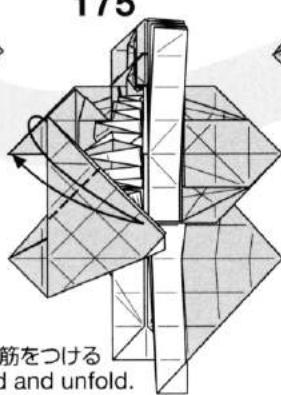
残りのフチも
同じようにずらして折る
Fold the next layer
down in the same way.



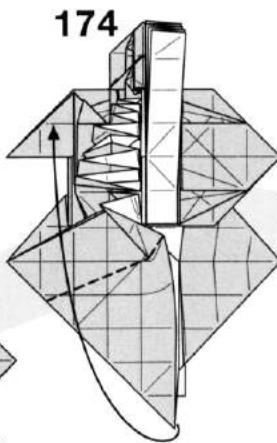
中心線のところで
後ろへ折る
Fold behind along
the center line.



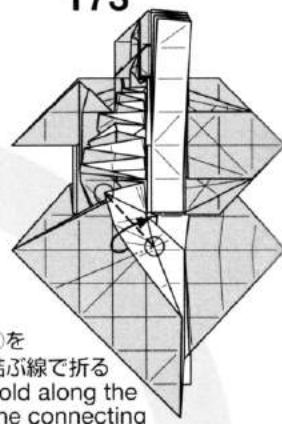
中わり折り
Inside reverse fold.



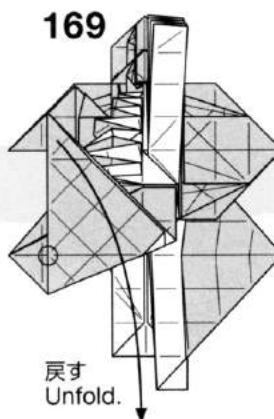
折り筋をつける
Fold and unfold.



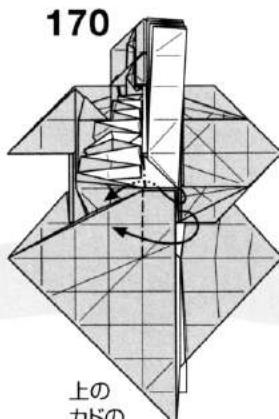
ついている折り筋で
平らに折りたたむ
Fold along the
crease and flatten
the model.



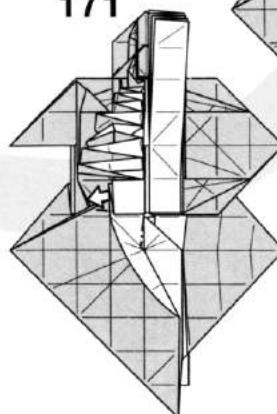
○を
結ぶ線で折る
Fold along the
line connecting
the circled points.



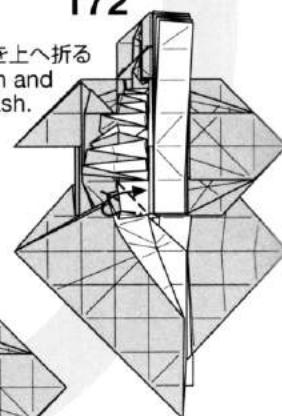
戻す
Unfold.



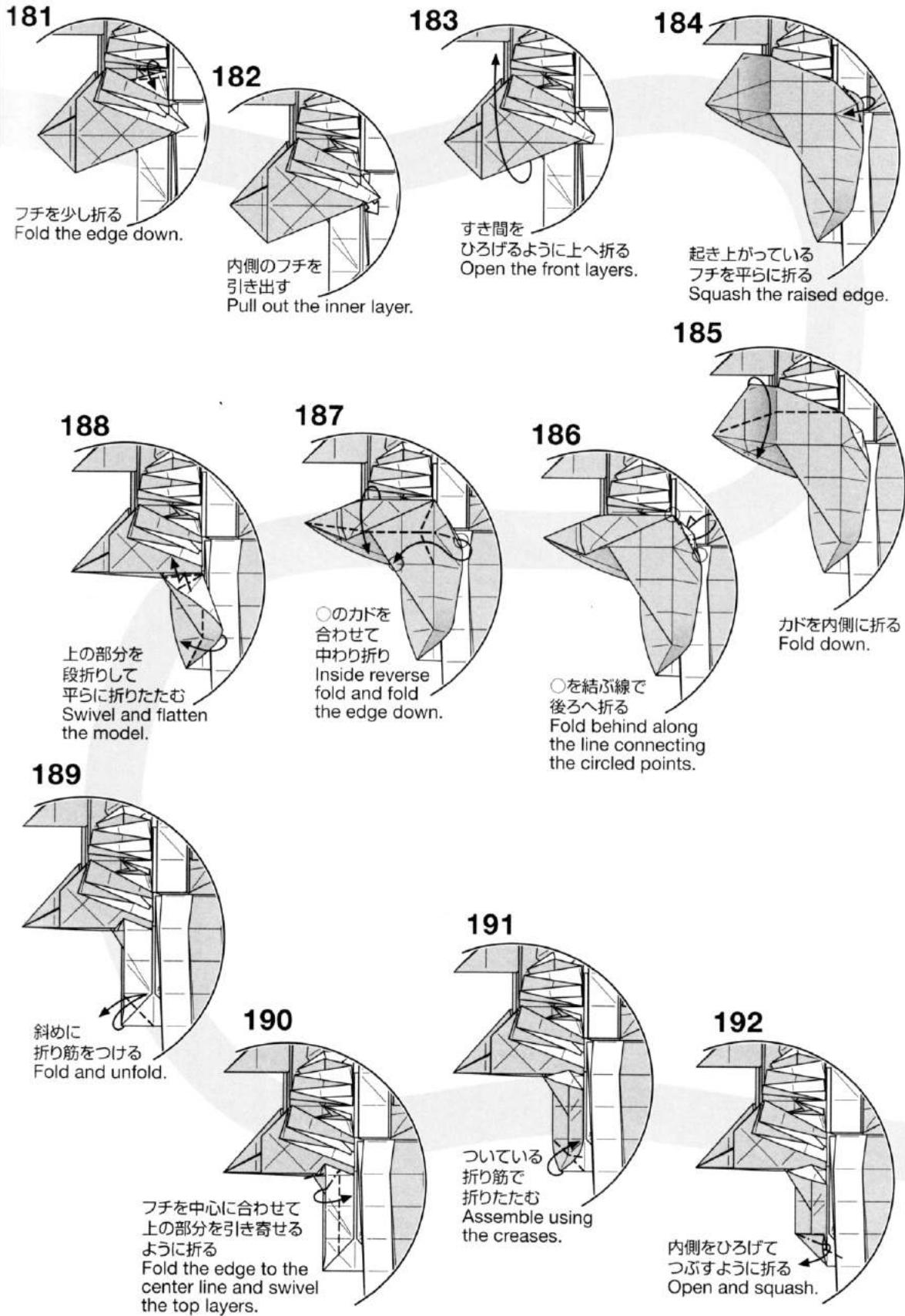
上の
カドの
部分を中わり折り
Inside reverse fold
along the existing
creases.



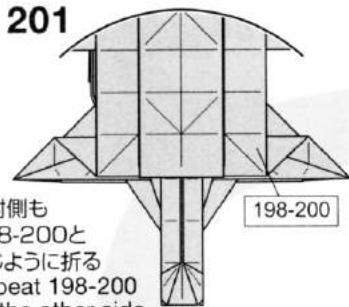
内側の力を
少しずらすように
引き出す
Pull out the
hidden layer.



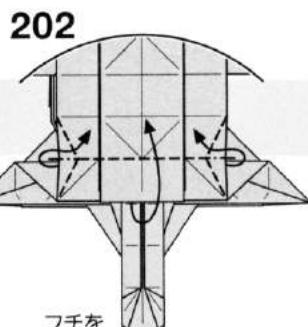
フチを上へ折る
Open and
squash.



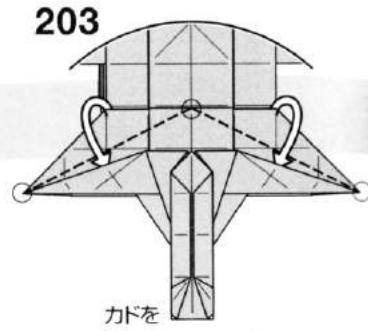
トラ



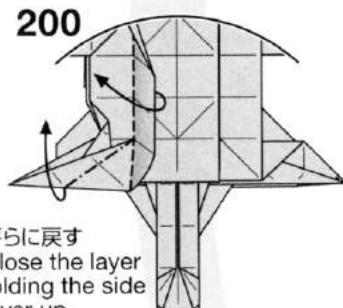
反対側も
198-200と
同じように折る
Repeat 198-200
on the other side.



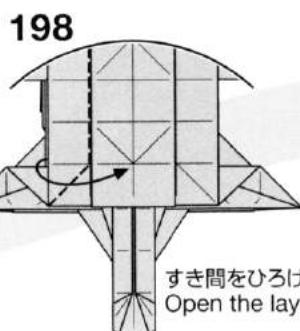
フチを
中わり折りしながら
戻すように折る
Inside reverse fold
on both sides.
The bottom edge
will be raised. Flatten.



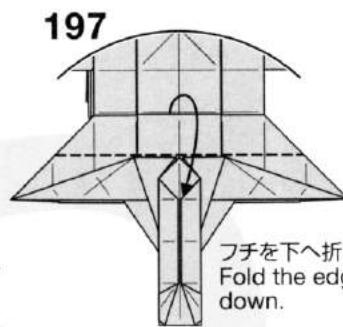
カドを
すき間に折り込む
Fold the corners
to inside.



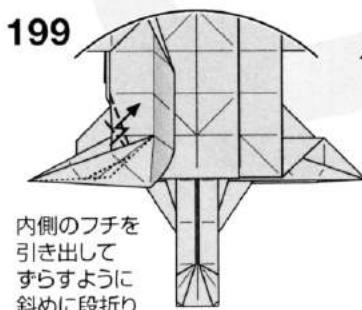
平らに戻す
Close the layer
folding the side
layer up.



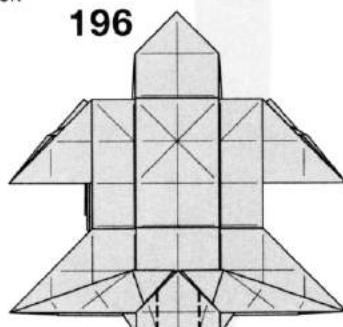
すき間をひろげる
Open the layer.



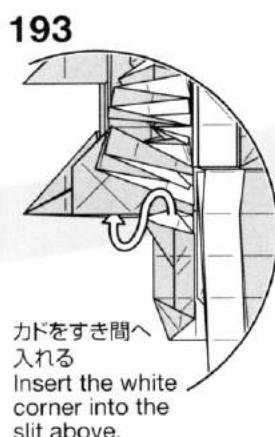
フチを下へ折る
Fold the edge
down.



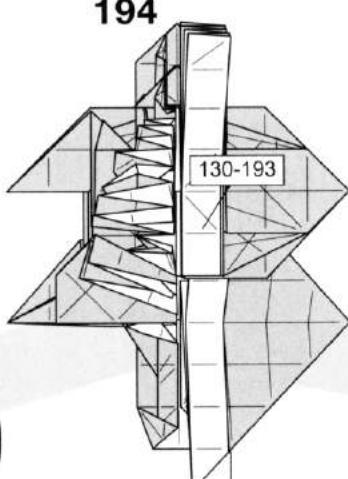
内側のフチを
引き出して
すらすように
斜めに段折り
Pull out and swivel
the layer.



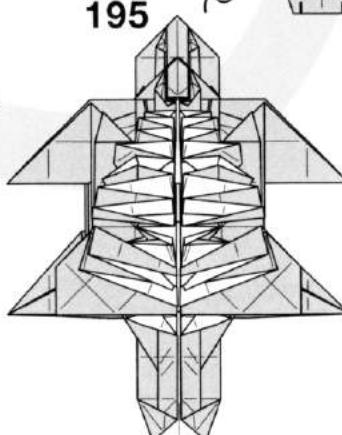
フチを中心
に合わせて折る
Fold the edges
to the center
line.



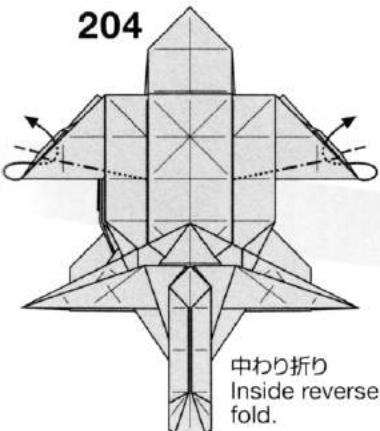
カドをすき間へ
入れる
Insert the white
corner into the
slit above.



反対側も130-193
同じように折る
Repeat 130-193
on the other side.



204



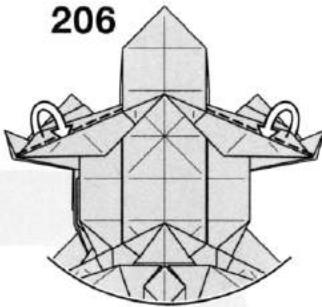
中わり折り
Inside reverse fold.

205



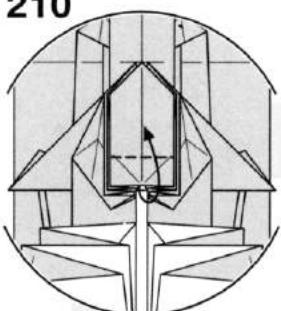
カドを斜めに折る
Fold the corners down.

206



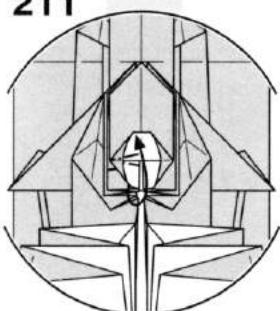
カドをすき間に折り込む
Fold the corners inside.

210



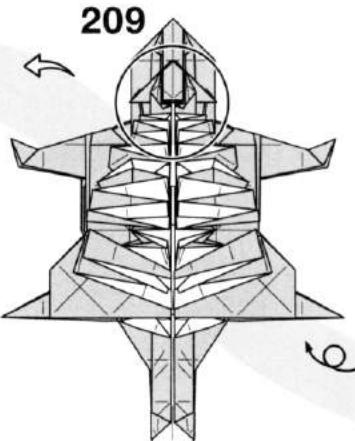
フチを上へ折る
Fold the edge up.

211

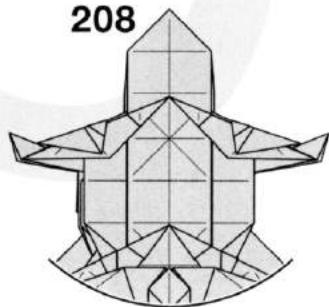


次のヒダを少しづらして折る
Fold the next layer up
along the line
slightly below the edge.

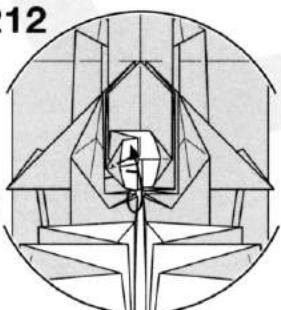
209



208

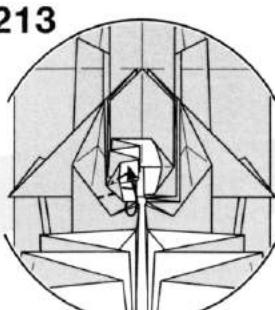


212



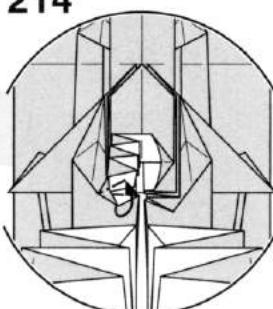
次のヒダも
同じように
少しづらして
折る
Fold the next
layer in the
same way.

213



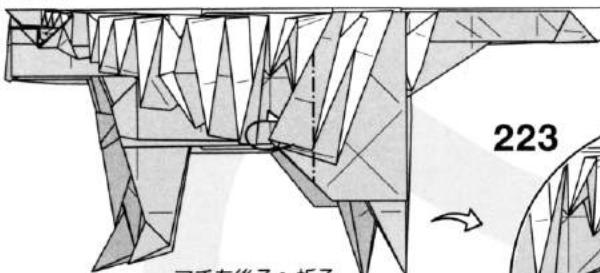
次のヒダも同じように
折る
Fold the next layer
in the same way.

214



最後も同じように
折る
Fold the last layer
in the same way.

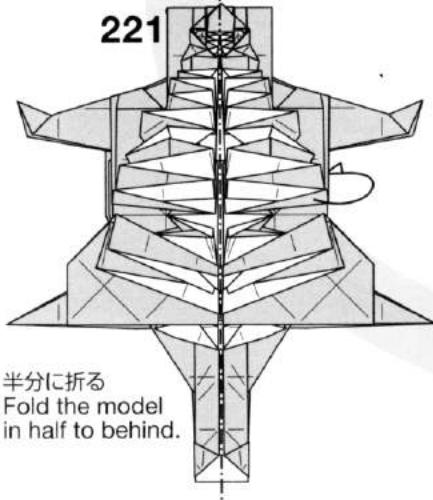
222



フチを後ろへ折る
Fold the corner behind.

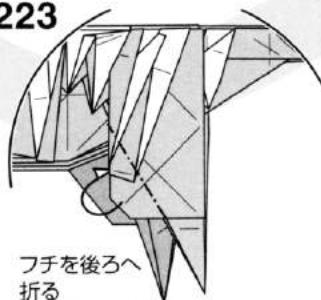


221



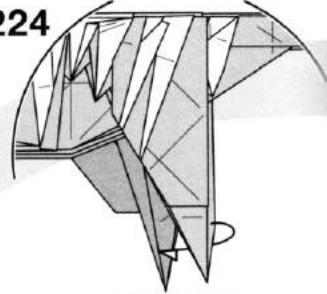
半分に折る
Fold the model in half to behind.

223



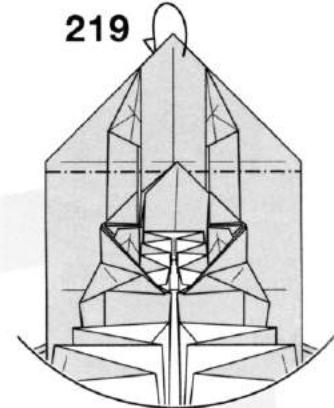
フチを後ろへ
折る
Fold the edge behind.

224



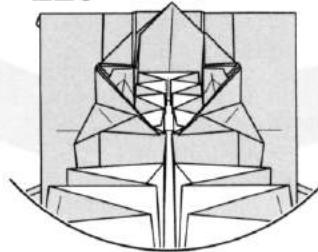
後ろのフチを
かるくひろげる
Show the hidden layer.

219

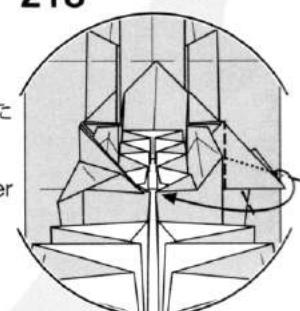


カドを後ろへ折る
Fold the corner behind.

220

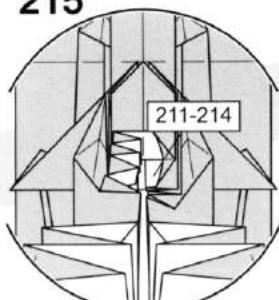


218



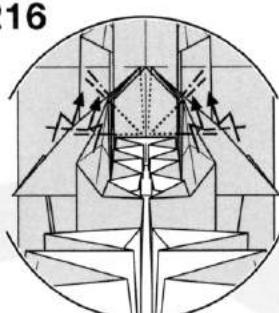
カドを中心には
わせて折って
起き上がってきた
部分をつぶす
ように折る
Fold the corner to the center and squash.

215



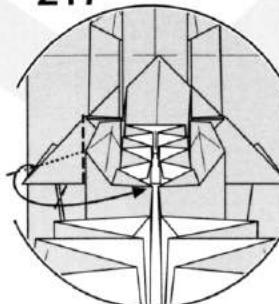
反対側も211-214と
同じように折る
Repeat 211-214
on the other side.

216

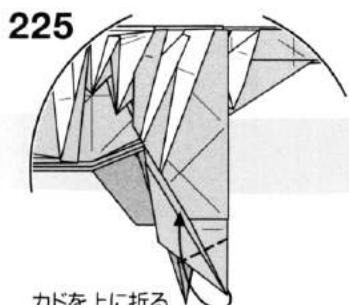


カドを両側で段折り
Crimp on the both sides.

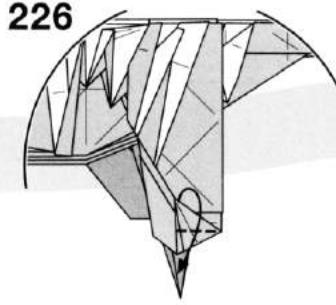
217



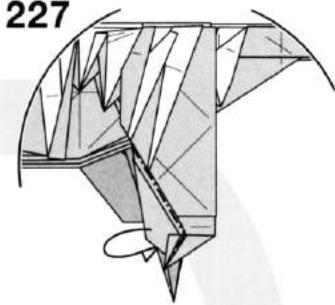
カドを中心には
わせて折って
起き上がってきた
部分をつぶすように
折る
Fold the corner to the center and squash.



カドを上に折る
Fold the corner up.



カドを下へ折る
Fold the corner down.



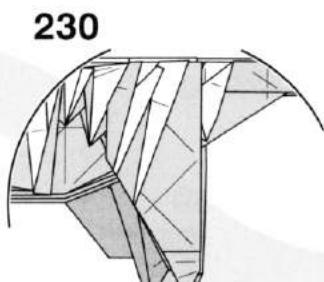
カドをつまむように
フチを後ろへ折る
Fold the edge behind
and pinch the corner.



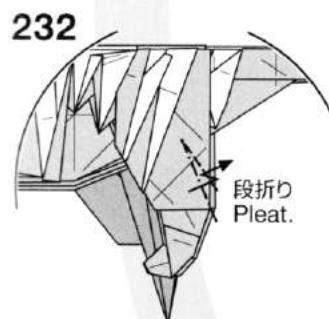
手前の1枚を
引き出す
Pull out the front layer.



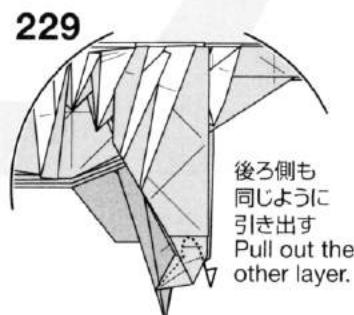
両側で段折り
Crimp.



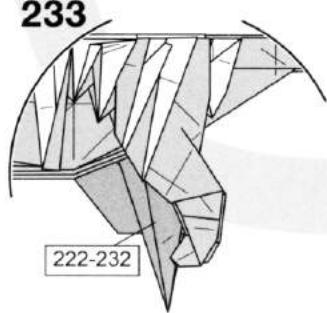
カドの
先を中わり折り
Inside reverse
fold the tip.



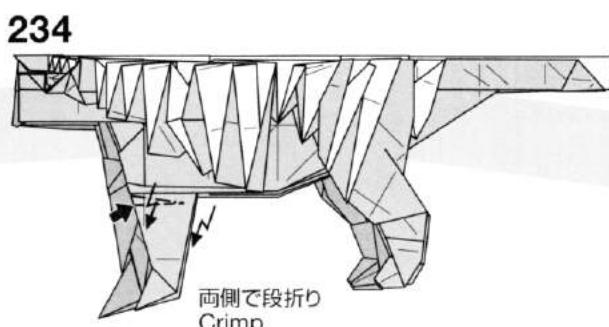
段折り
Pleat.



後ろ側も
同じように
引き出す
Pull out the
other layer.

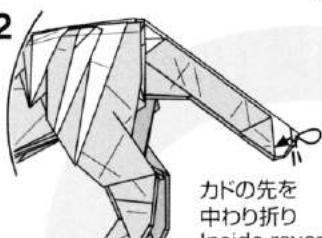


反対側も222-232と
同じように折る
Repeat 222-232
on the other side.



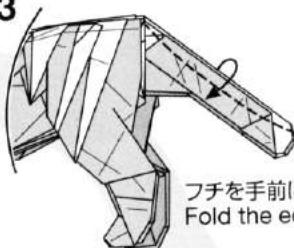
両側で段折り
Crimp.

242



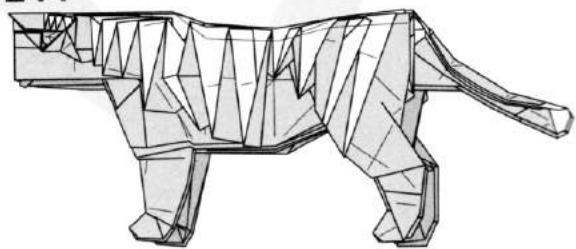
カドの先を
中わり折り
Inside reverse
fold the tip.

243

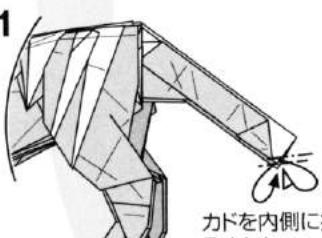


フチを手前に折る
Fold the edge.

244

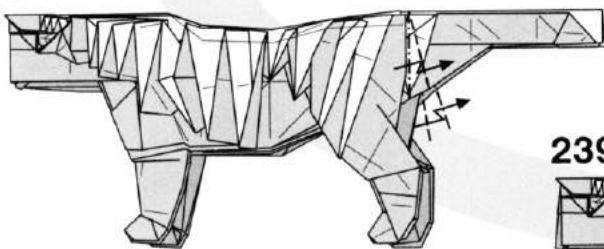


241



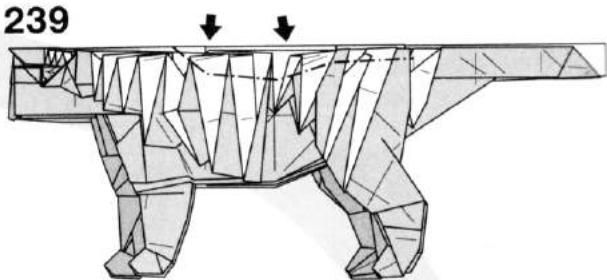
カドを内側に折る
Fold the corner
inside.

240



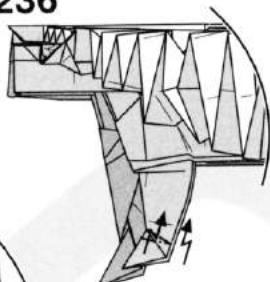
両側で段折り
Crimp.

239



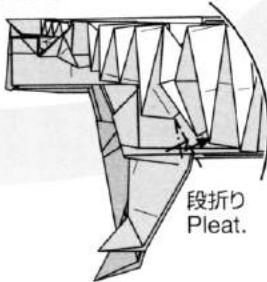
体を立体的にする
Make the body
three-dimensional.

236



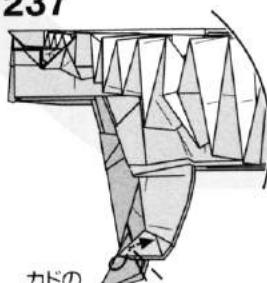
両側で段折り
Crimp.

235



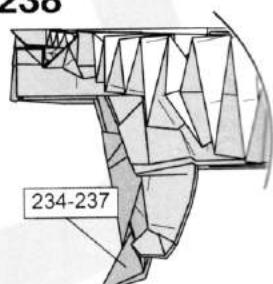
段折り
Pleat.

237



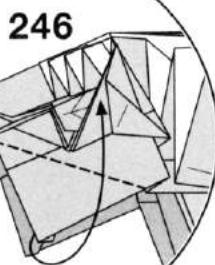
カドの
先を中わり折り
Inside reverse
fold the tip.

238

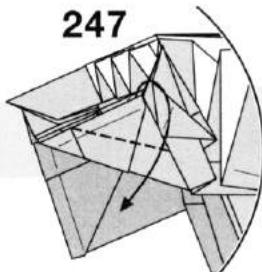


234-237

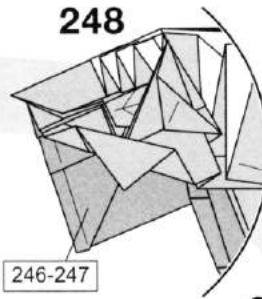
反対側も234-237と
同じように折る
Repeat 234-237
on the other side.



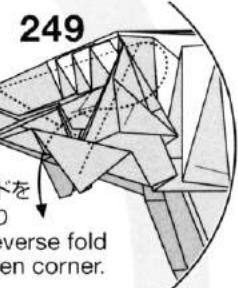
カドを斜めに折る
Fold the corner up.



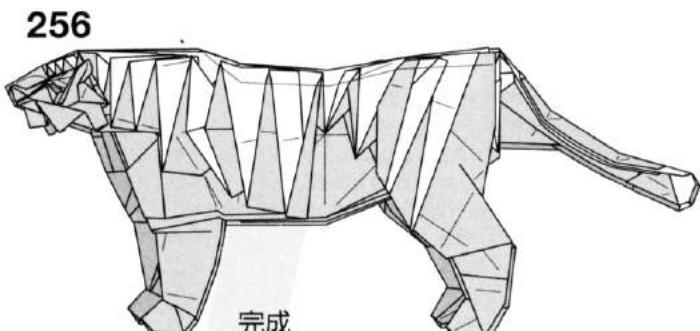
カドを下に折る
Fold the corner down.



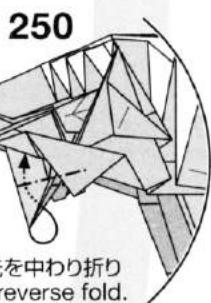
反対側も246-247と同じように折る
Repeat 246-247 on the other side.



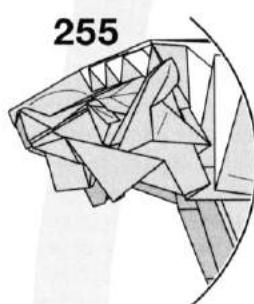
内側のカドを
中わり折り
Inside reverse fold
the hidden corner.



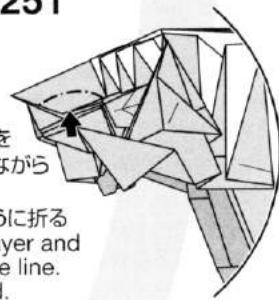
完成
Model completed.



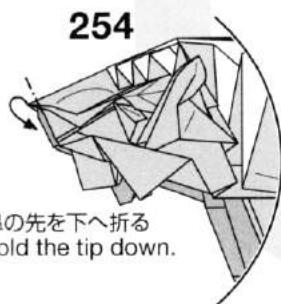
カドの先を中わり折り
Inside reverse fold.



251



鼻から目の部分を
すき間をひろげながら
立体的にする
反対側も同じように折る
Fold the top layer and
shape the nose line.
Repeat behind.



鼻の先を下へ折る
Fold the tip down.



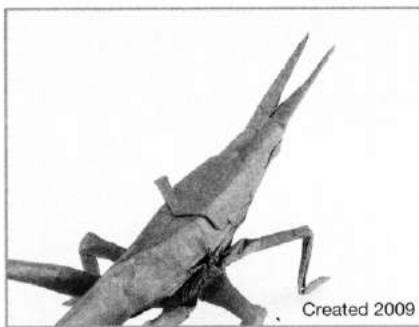
耳をひろげる
ように折る
反対側も同じように折る
Open and shape an ear.
Repeat behind.



カドをひろげて
目を作る
反対側も同じように折る
Open and shape an eye.
Repeat behind.

ショウリョウバッタ

Longheaded Locust

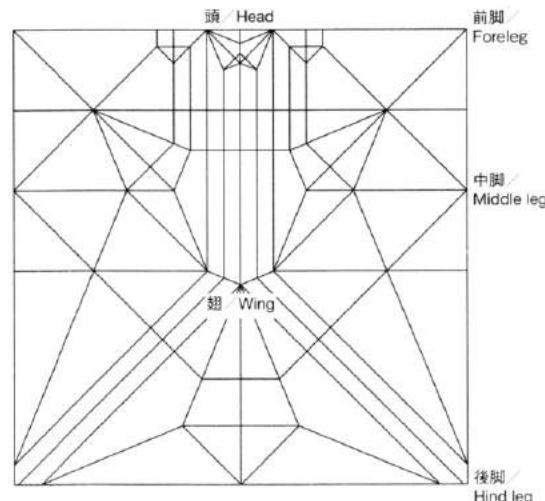


創

作をするとき、題材とアイディアがうまく噛み合った時に新作ができる、そういうことがあります。このアイディアは構造や造形手法に限らず、カド配置や仕上げの形など、なんらかの形で「出来るかも」と思える材料であればいいのです。

このショウリョウバッタは、題材の脚のカドの長さの比率と、構造の組み合わせから生まれた作品です。頭部・前脚・中脚は同じ長さ(1)、長い後脚を22.5度のカド($1 + \sqrt{2} = \text{約}2.41$)の長さで折り出すというアイディアから、前脚と後脚を用紙のカドに配置することで構造がほぼ確定、あとは触角のカドを折り出すために、中心に少しヒダを追加、ついでに後脚も長くなるようにヒダの向きを調整すれば基本構造は完成です。

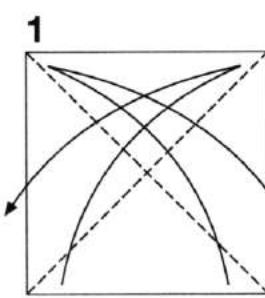
さて、ここまで順調だったのですが、大きめの紙で試作を進めているときに、ヒダの折り目と用紙のカドが少しだけずれることが判明しました。数値にすると約0.89%となります。このような細かいズレは構造を決め打ちした場合にはよくある事です。折りやすさ等を度外視すれば、ヒダの幅を調整することでカドを合わせること自体は可能なのですが、実際に折る手順や他の部分とのまとまりを考え、そのままとする構造を採用しました。これさえなければとてもきれいな展開図なので、非常に残念かつ複雑な思いの残る判断です。



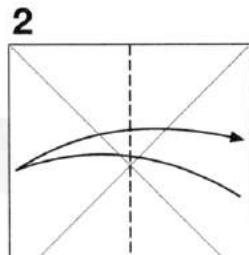
I sometimes feel that I come up with a new model when the motif and some idea go with each other harmoniously. The idea could be anything that makes me feel, "I may be able to fold it using this idea!", such as structures, methods of shaping, distribution of flaps, and so on.

I designed this longheaded locust using combinations of ideas about the base structure and the ideal ratio of lengths of flaps for legs. Flaps for the head, forelegs and middle legs are of the same length, while ones for hind legs are approximately 2.41 times longer ($= 1 + \sqrt{2}$) using the length of the 22.5 degree flap out of the square. I decided on the structure in which flaps for forelegs and hind legs will cross the corners of the square, added pleats in the center of the sheet for antennae, and then adjusted the orientation of flaps for hind legs to guarantee the length.

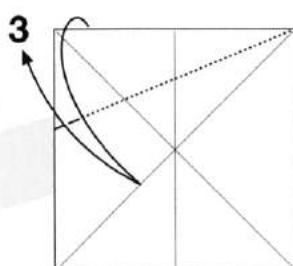
So far so good, but I found out, when I was making a trial model, that the crease lines for pleats for hind legs will be a little beside the corners of the square, for about 0.89% of the length of the edge. This happens when one starts designing with a certain structure in mind in the beginning. It is possible to adjust the crease lines so that it will go through the corners, if I ignore the ease of folding. However, I left it as it is, for the integrity and coherence of folding steps. I regret that I could not have cleaner and clearer crease patterns as it is only a matter of those two crease lines.



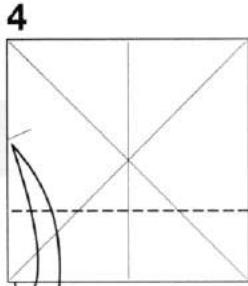
1
三角に折り筋をつける
Fold and unfold.



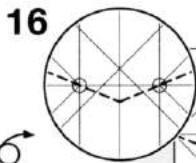
2
半分に折り筋をつける
Fold and unfold.



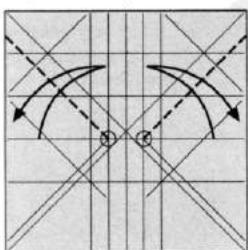
3
チフチを折り筋に合わせて印をつける
Fold the edge to the diagonal, but only mark on the edge. Unfold.



4
カドをつけた印に合わせて折り筋をつける
Fold the corner to the mark and unfold.

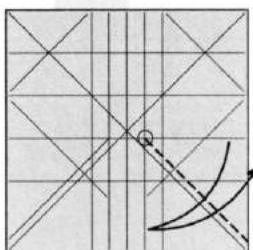


15

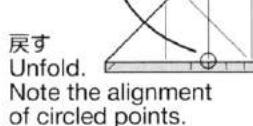


○の交点から折り筋をつける
Fold at the circled points and unfold.

14

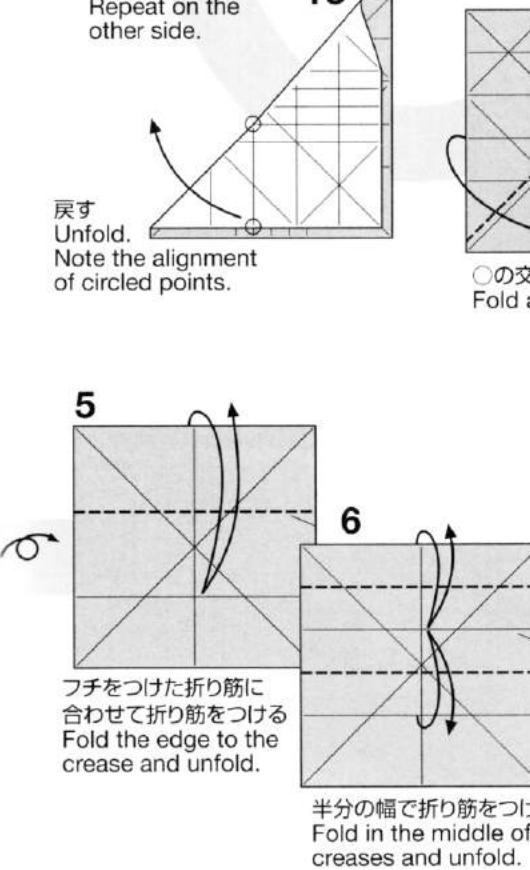


反対側も同じように
折り筋をつける
Repeat on the other side.



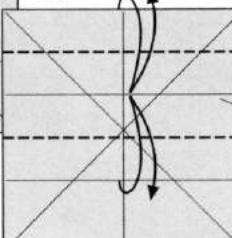
戻す
Unfold.
Note the alignment
of circled points.

13



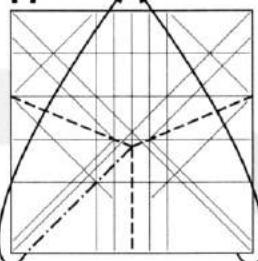
フチをつけた折り筋に
合わせて折り筋をつける
Fold the edge to the
crease and unfold.

6



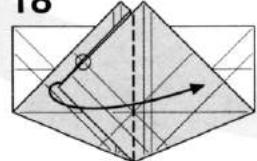
半分の幅で折り筋をつける
Fold in the middle of the
creases and unfold.

17



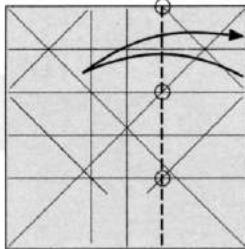
つけた折り筋を使って
つまむように折る
Rabbit ear fold.

18



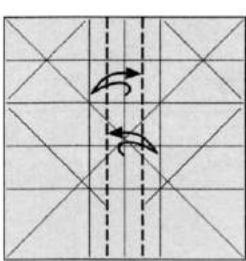
力道を反対側へ折る
Fold the corner
to the other side.

10



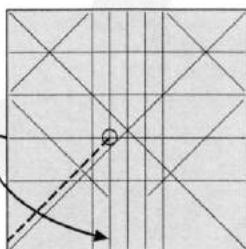
○を結ぶ線で折り筋をつける
Fold the edge along the line
connecting the circled points.
Unfold.

11



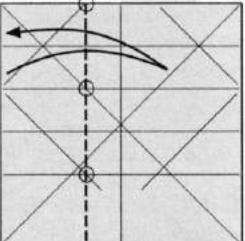
半分の幅で折り筋をつける
Fold in the middle of
the creases and unfold.

12



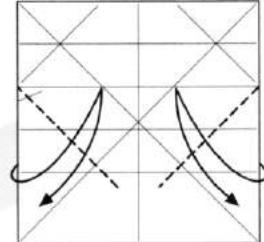
○の交点から斜めに折る
Fold at the circled point.

9

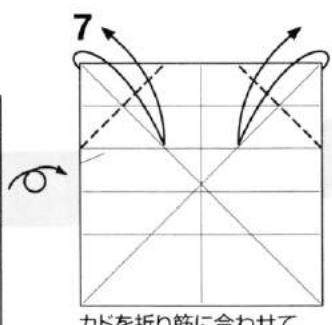


○を結ぶ線で折り筋をつける
Fold the edge along the line
connecting the circled points.
Unfold.

8



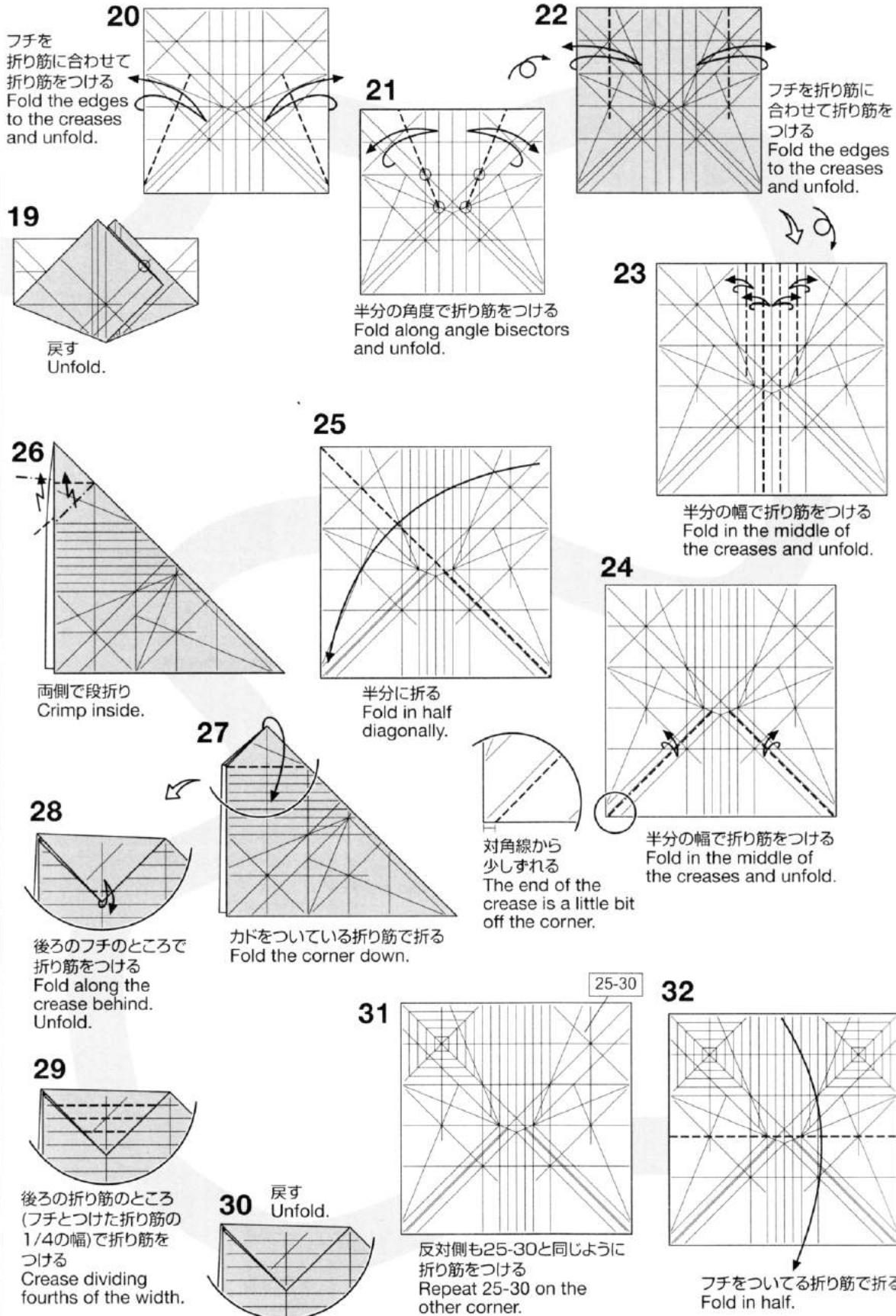
フチを折り筋に合わせて
折り筋をつける
Fold the edges to the
crease and unfold.

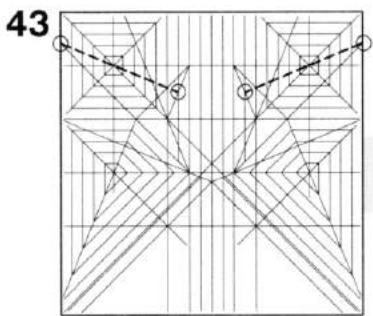


力道を折り筋に合わせて
折り筋をつける
Fold the corners to the
crease and unfold.

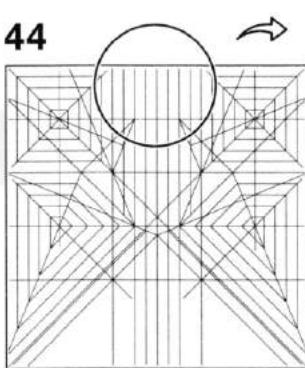
9

ショウリョウバッタ



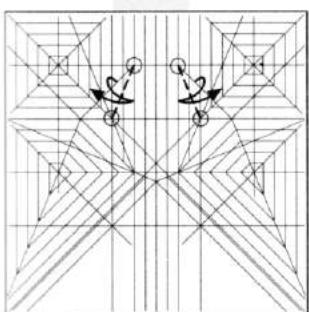


○を結ぶ線で折り筋をつける
Crease along the line connecting the circled points.



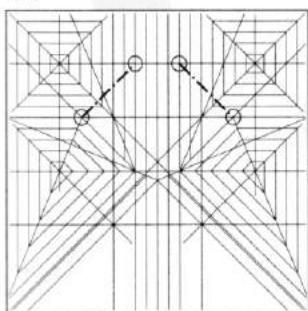
フチを折り筋に合わせて
折り筋をつける
Fold the edge to the
creases and unfold.

42



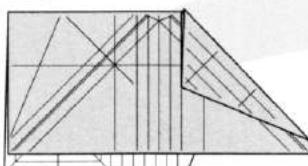
半分の角度で折り筋をつける
Fold along angle bisectors
and unfold.

41

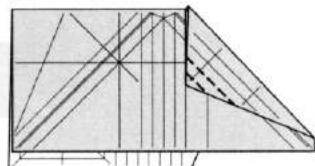


○を結ぶ線で折り筋をつける
Crease along the line connecting the circled points.

39

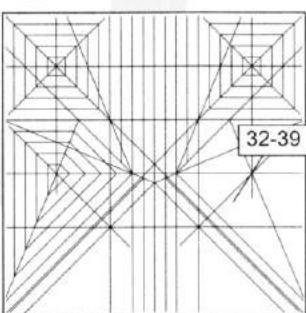


38



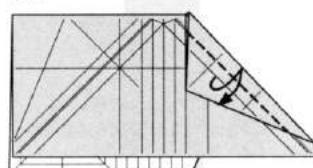
のこりも同じ幅で折り筋をつける
Crease at the same distances.

40



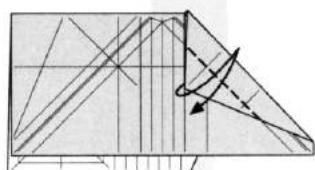
反対側も32-39と同じように
折り筋をつける
Repeat 32-39 on the
other side.

37



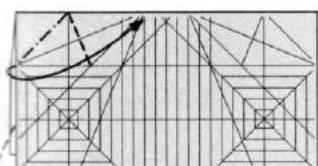
半分の幅で折り筋をつける
Fold in the middle of
the creases and unfold.

36



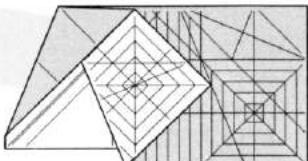
後ろについている折り筋のところで
折り筋をつける
Fold along the crease behind.

33

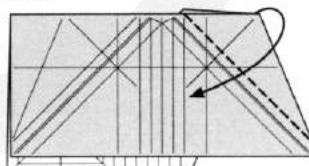


ついている折り筋で
引き寄せるように折る
Open and squash.

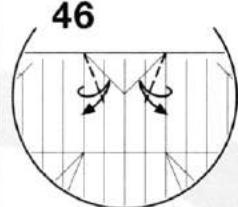
34



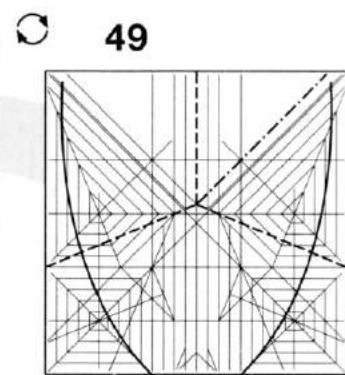
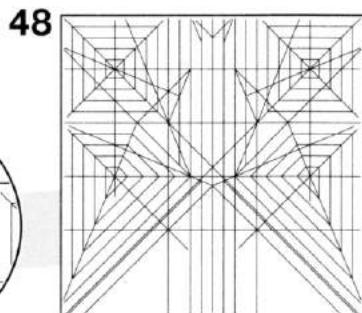
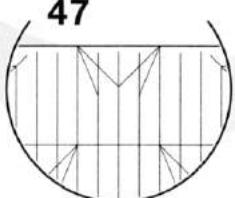
35



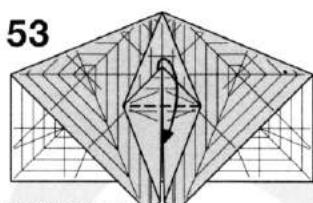
カドをついている折り筋で折る
Fold the corner down
using the crease.



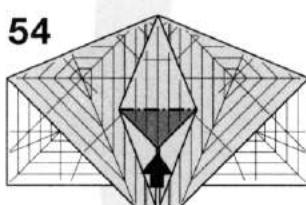
半分の角度で
折り筋をつける
Fold along angle
bisectors and
unfold.



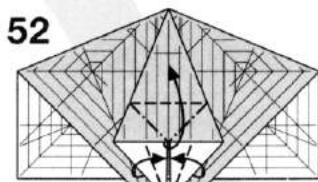
ついている
折り筋で大きくつまみ折り
するように折りたたむ
Rabbit-ear fold.



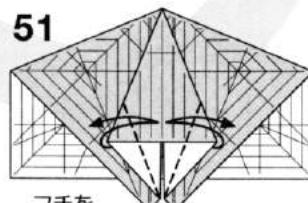
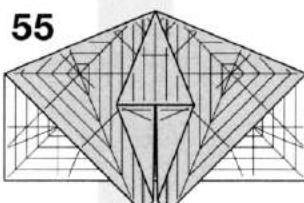
カドを下へ折る
Fold the corner down.



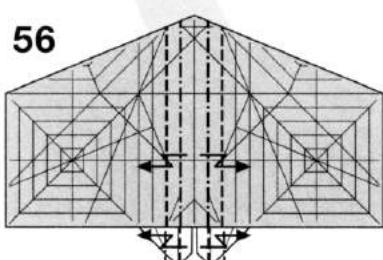
カドを内側へ折り込む
Push the darker area
to inside.



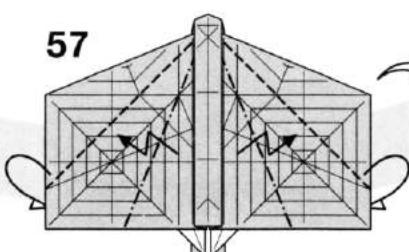
内側をひろげて
つぶすように折る
(花弁折り)
Petal fold.



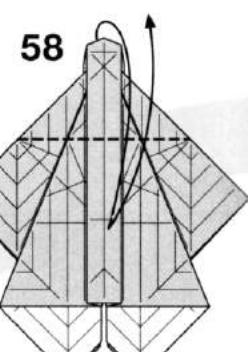
フチを
中心に合わせて折り筋をつける
Fold the edges to the
center line and unfold.



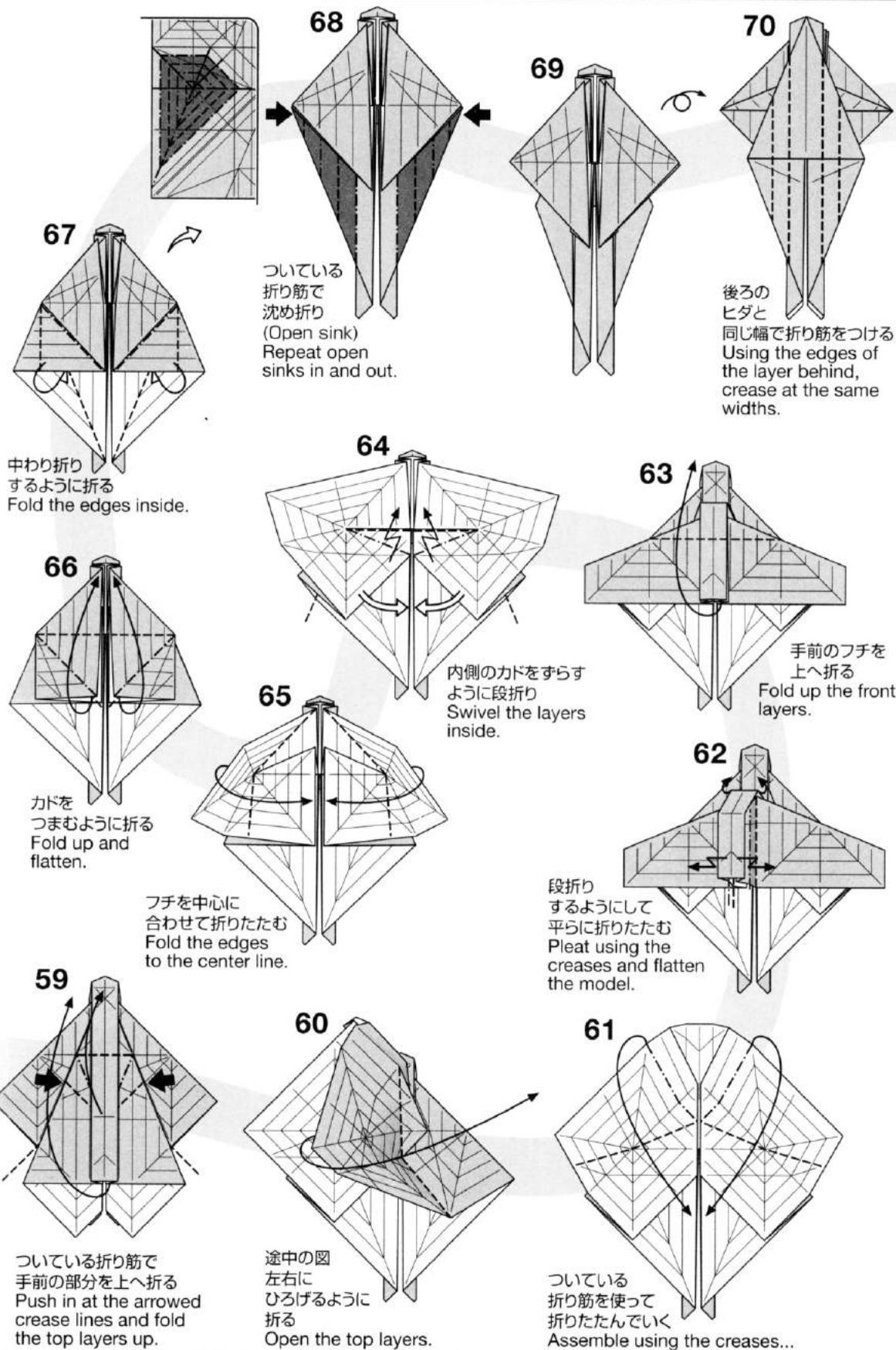
両側で段折り
(中わり折り×2×左右)
Crimp on both sides.

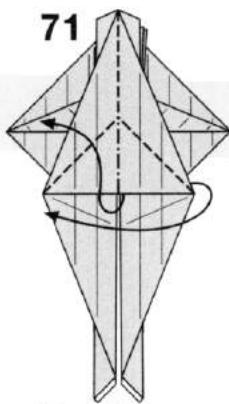


ついている折り筋を使って
ずらすように段折り
Pleat fold inside.

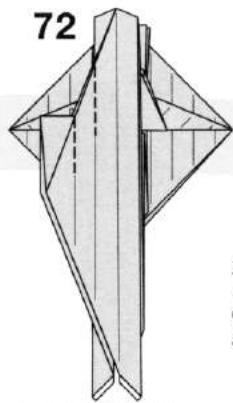


ついている折り筋を使って
折り筋をつける
Fold along the crease
and unfold.

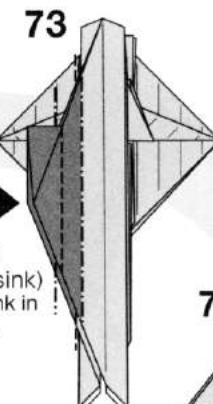




中心の部分を
中わり折りするように
折る
Fold the top layers
in half while
inside reverse folding
the middle layer.

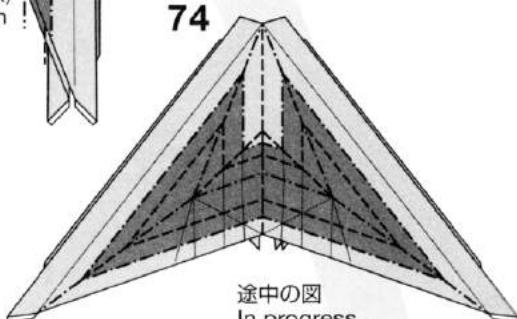


上半分くらいだけ
ついている折り筋の
ところで折り筋をつける
Crease along the
creases but only on
the top.

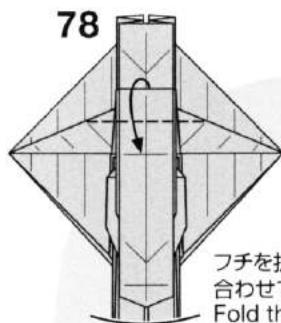


沈め折り
(Open sink)
Open sink in
and out.

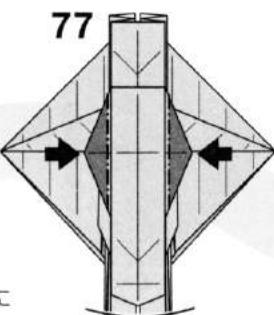
74



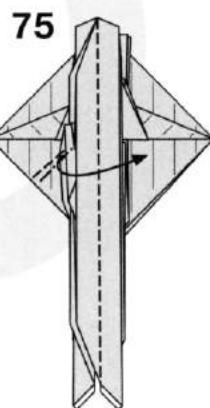
途中の図
In progress...



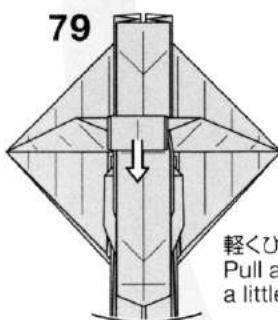
フチを折り筋に
合わせて折る
Fold the edge
to the crease.



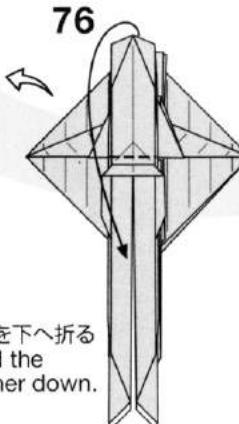
沈め折り
(Open sink)
Open sink.



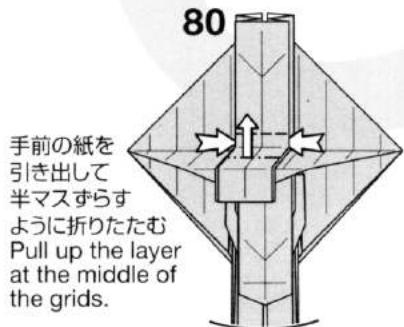
カドを下へ折る
Fold the
corner down.



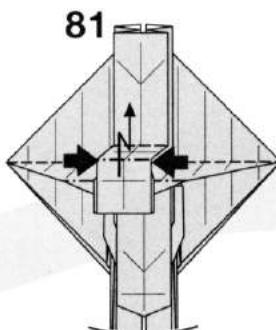
軽くひろげる
Pull and open
a little.



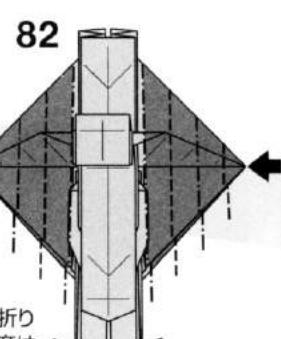
中心でひろげて
つぶすように折る
Open and squash.



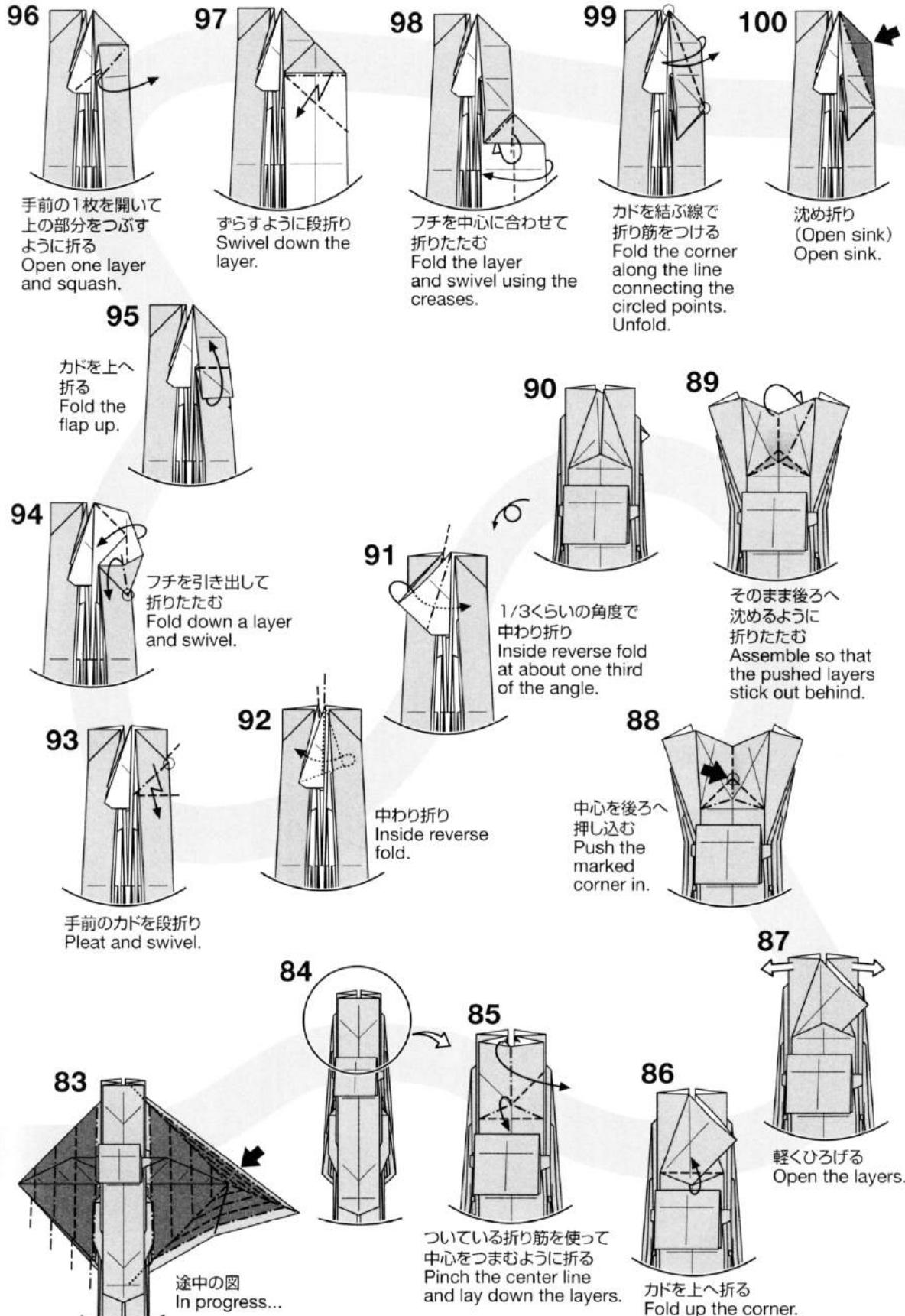
手前の紙を
引き出して
半マスずらす
ように折りたたむ
Pull up the layer
at the middle of
the grids.



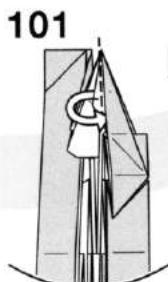
途中の図
内側は適当に折りたたむ
In progress.
Flatten the model.
It does not matter how
layers are folded inside.



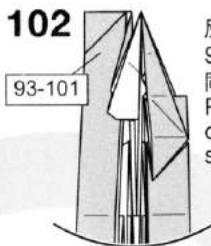
沈め折り
(45度は
Open sink, 22.5度はClosed)
Open sink,
but ignore the layers with
a 22.5 degree corner.



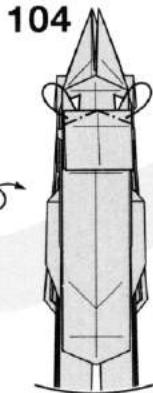
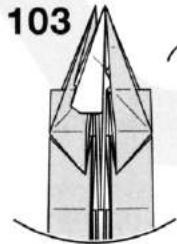
ショウリョウバッタ



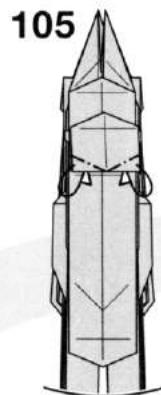
カドをすき間へ
折り込む
Fold the corner
to inside.



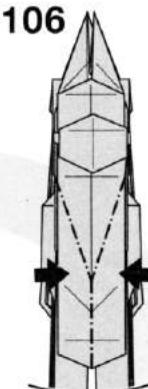
反対側も
93-101と
同じように折る
Repeat 93-101
on the other
side.



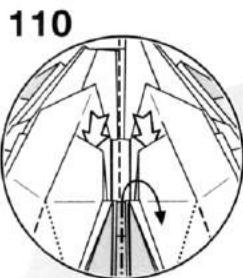
カドを後ろへ折る
Fold the corners
to behind.



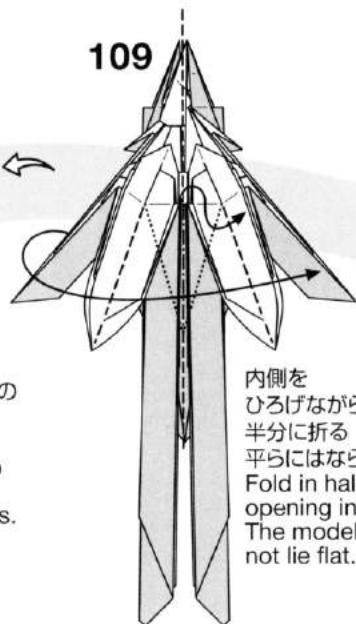
カドを後ろへ折る
Fold the corners
to behind.



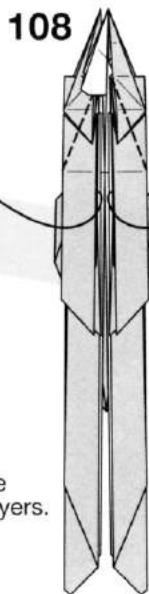
カドをつまむように
折る
Pinch the flap.



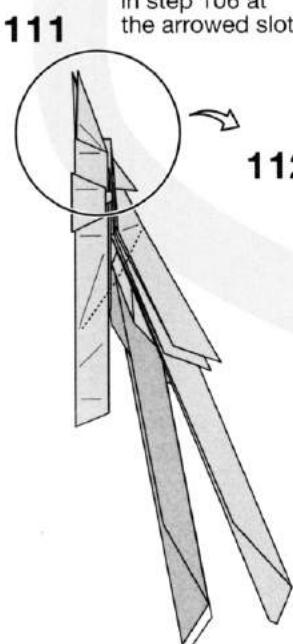
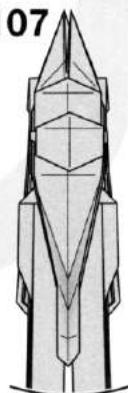
このすき間から
106で折った部分の
内側をひろげる
Push out the
layers of the flap
in step 106 at
the arrowed slots.



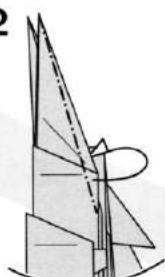
内側を
ひろげながら
半分に折る
平らにはならない
Fold in half while
opening inner layers.
The model will
not lie flat.



内側をひろげる
ように折る
Open the layers.

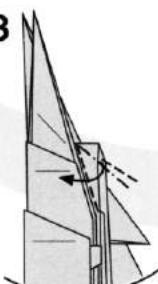


112



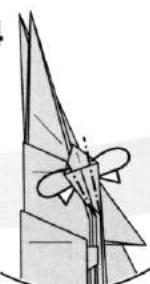
フチを後ろへ折る
Fold the edge
to inside.

113



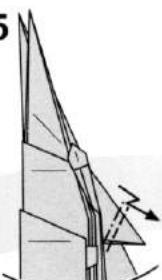
内側をひろげて
つぶすように折る
Open and squash.

114

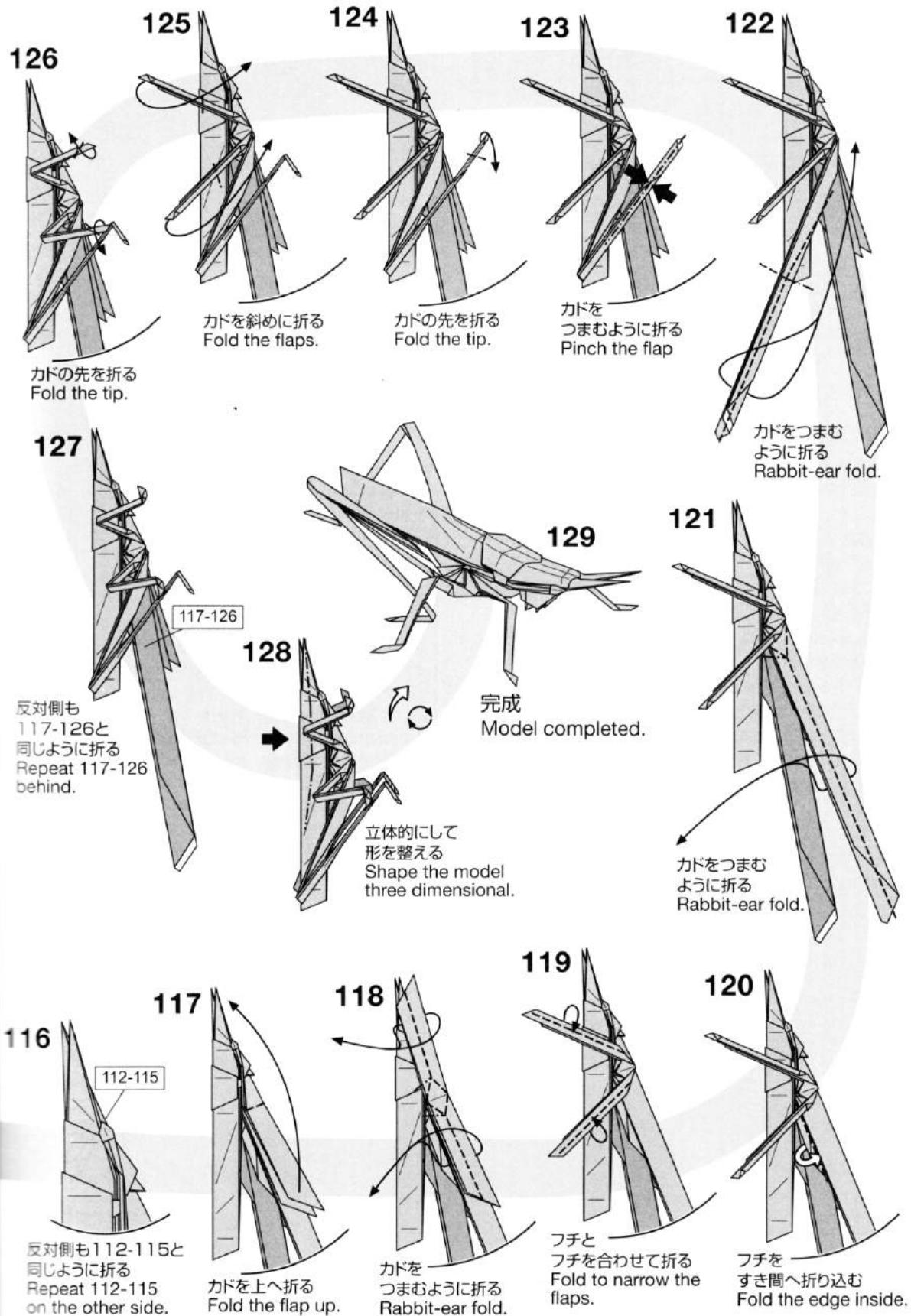


フチを後ろへ折る
Fold the edges
to behind.

115

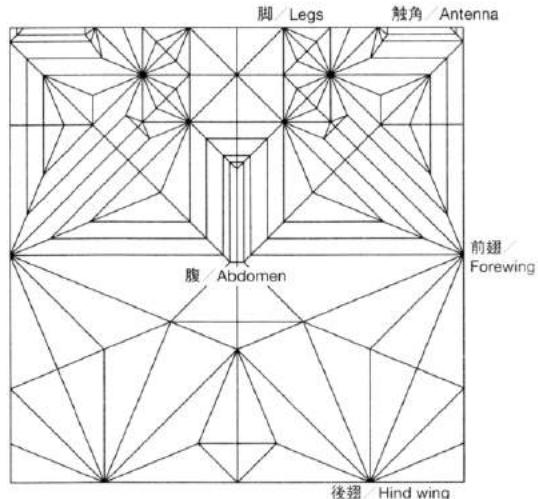
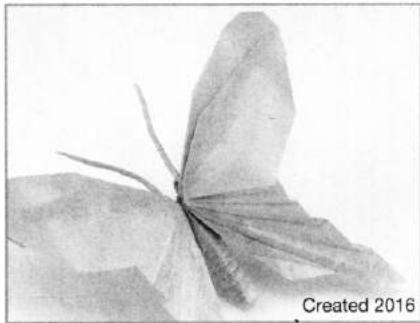


段折り
Pleat.



チョウ

Butterfly



この作品は元々は、2004年に羽のカドの配置のアイディアから創作したものです。その後2010年ごろに手慰み的にいじっていた試作品を経由して、2016年に折り図化する際に構造・造形を整理してバージョンアップしたものが今回の折り図版です。

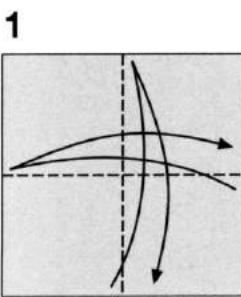
この作品に限らず、折り図を描く時には、まず説明可能な状態になるように構造や折り方を整理しています。この作品の場合は、最初のバージョンと比べると、仕上げでごまかしていた脚の分岐を折り出すため、カドの位置などを調整して明確な手順で説明できるようにしています。ただしその結果、調整のための細いヒダが必要になるなど基本構造が複雑になり、作品としての難度は高くなっています。また、折り図を描く手間も複雑さに比例して増えてしまいます。なるべく正確な構造を目指した結果として、妙に複雑な構造になるのはよくあることですが、痛し痒しいところでしょうか。

脚の部分などが紙の重なりで分厚くなります。薄手の用紙を使い、序盤の折り筋をつける工程は特に丁寧に、正確に折り筋をつけるように気をつけるとよいでしょう。

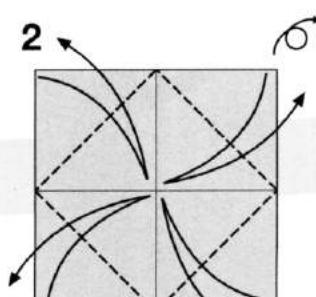
The initial idea that I had with this model was about the distribution of flaps for wings. I had the idea since 2004, with which I made a trial model in 2010. With some adjustment on the structure and shaping, I made a version for diagramming in 2016.

When I draw diagrams for folding, I always rearrange the structure along with folding steps. For this model, I made folding steps for legs more logical and easier by adjusting the placement of necessary flaps. The earlier versions involved more weight on shaping than folding out legs. However, the structure became more complex with more pleated areas, which made the model harder to fold. This also produced more folding steps (and diagrams). Trying to be precise often end up with having a more complex structure.

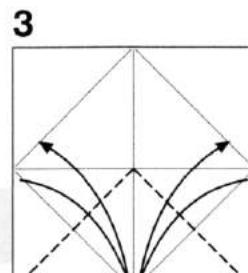
Legs are with thick clusters of paper. Use thin paper, and be precise in the initial creasing steps.



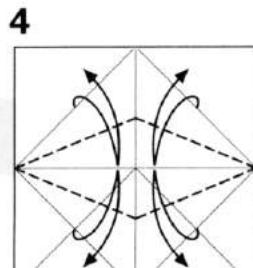
半分に折り筋をつける
Fold in halves and unfold.



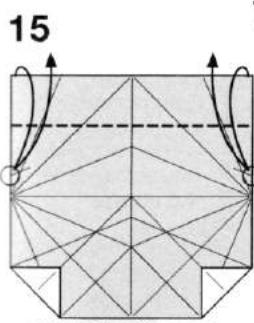
カドを中心に行わせて
折り筋をつける
Fold the corners to the
center and unfold.



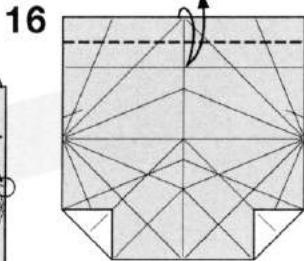
チとチを合わせて
折り筋をつける
Fold edge to edge and
unfold.



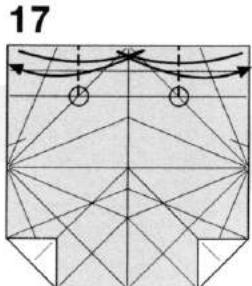
半分の角度で折り筋を
つける
Fold and unfold at
angle bisectors.



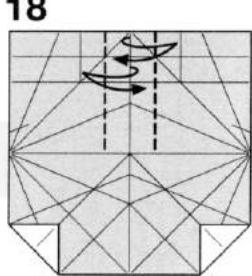
力道を○に合わせて
折り筋をつける
Fold the corners
to the circled points
and unfold.



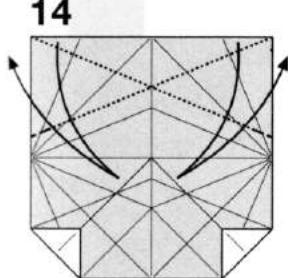
フチを折り筋に合わせて
折り筋をつける
Fold the edge to the
crease and unfold.



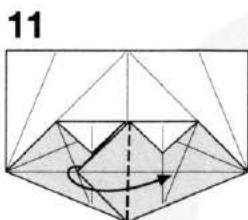
○のところで
折り筋をつける
Fold at the circled
points and unfold.



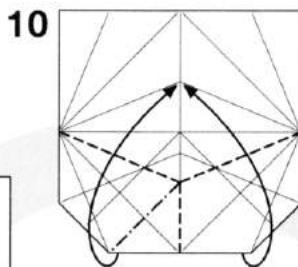
中心線を折り筋に合わせて
折り筋をつける
Fold and unfold
at the half of the widths.



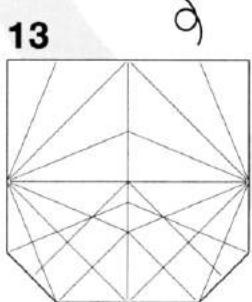
フチを折り筋に合わせて
印をつける
Fold the edges to the
creases, but only make
a marking at the edge.



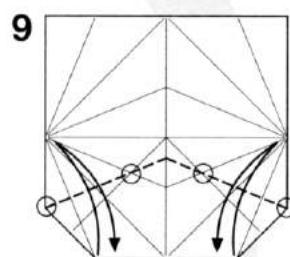
力道を反対側へ折る
Fold the corner
to the other side.



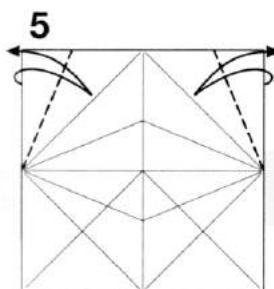
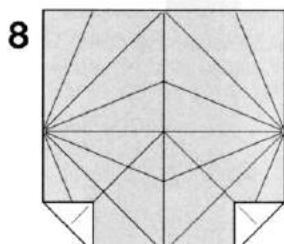
つけた折り筋で
つまむように折る
Rabbit-ear fold.



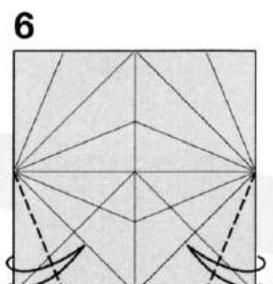
9の形に戻す
Unfold to 9.



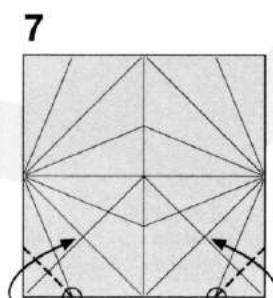
○を通る線で折り筋をつける
Fold at the circled points.
and unfold.



フチを折り筋に合わせて
折り筋をつける
Fold the edges to the
creases and unfold.

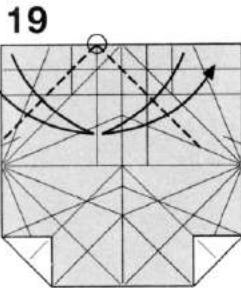


フチを折り筋に合わせて
折り筋をつける
Fold the edges to the
creases and unfold.

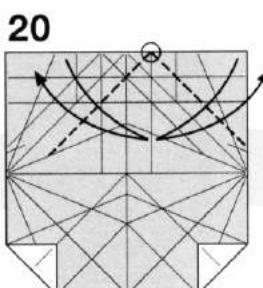


力道を○の
ところで折る
Fold the corners
at the circled
points.

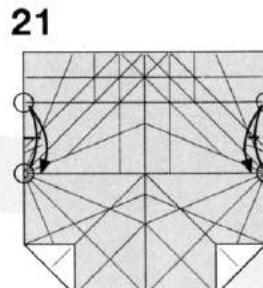
チョウ



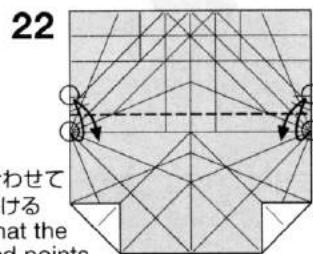
フチを折り筋に合わせて
折り筋をつける
Fold the edges to the
crease and unfold.



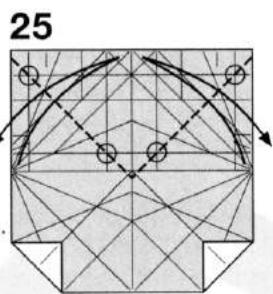
フチを折り筋に合わせて
折り筋をつける
Fold the edges to the
crease and unfold.



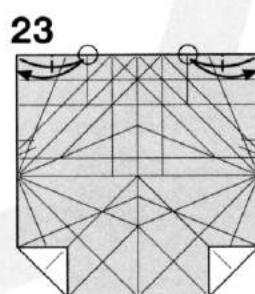
○と○を合わせて
印をつける
Fold and unfold
at the half of the
widths but only
make marks at
the edge.



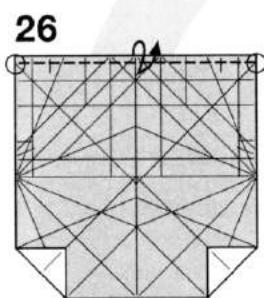
○と○を合わせて
折り筋をつける
Fold so that the
two circled points
will be on top of each other.
Unfold.



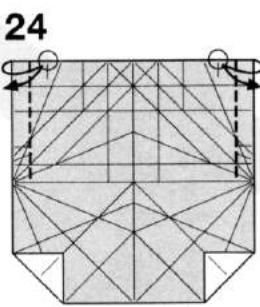
○を結ぶ線で
折り筋をつける
Crease along the
lines connecting
the circled points.



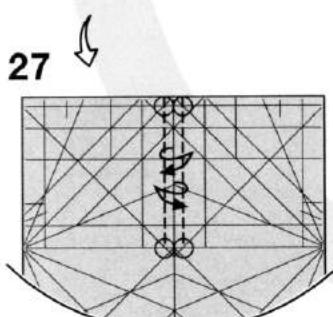
カドを○に合わせて
印をつける
Fold the corners
to the circled points
to make a mark.



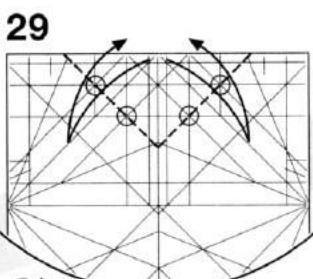
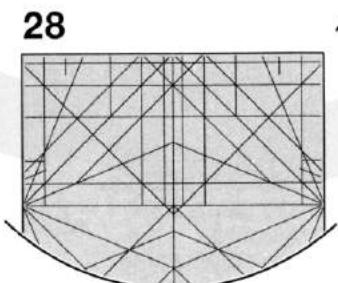
○を結ぶ線で折り筋をつける
Crease along the line
connecting the circled points.



カドを○に合わせて
折り筋をつける
Fold the corners
to the circled points
and unfold.

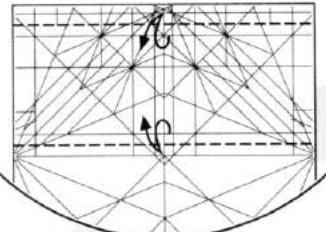


○を結ぶ線で折り筋をつける
Crease along the lines
connecting the circled
points.



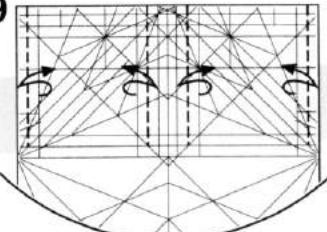
○を
結ぶ線で折り筋をつける
Crease along the lines
connecting the circled
points.

38



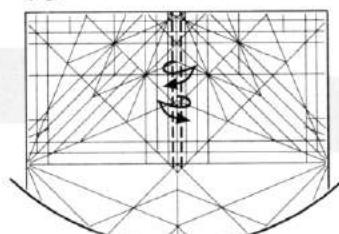
半分の幅で折り筋をつける
Crease at the half of the widths.

39



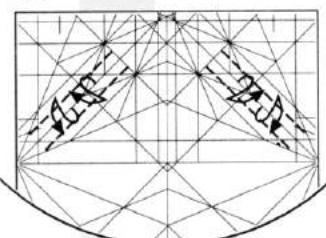
半分の幅で折り筋をつける
Crease at the half of the widths.

40



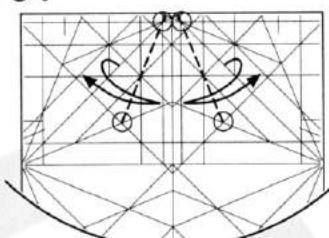
半分の幅で折り筋をつける
Crease at the half of the widths.

37



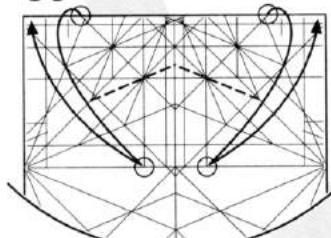
半分の幅で
折り筋をつける
Crease at the
half of the widths.

34



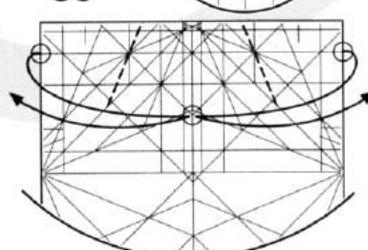
30-32と同じようにして
折り筋をつける
Repeat 30-32 on the
other angles.

36



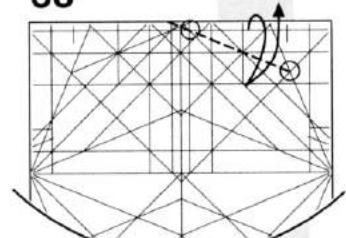
○と○を合わせて折り筋をつける
Fold so that the two circled points
will be on top of each other.
Unfold.

35



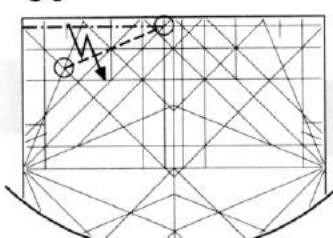
○と○を合わせて
折り筋をつける
Fold so that the two circled points
will be on top of each other.
Unfold.

33



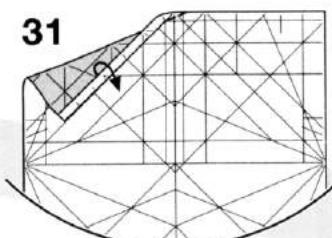
反対側も30-32と同じように
折り筋をつける
Repeat 30-32 on the other
side.

30



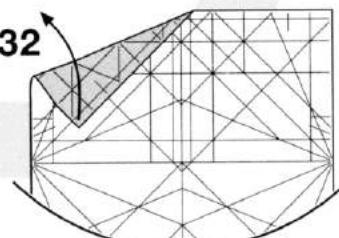
折り筋と折り筋を合わせて段折り
Pleat along angle bisectors.

31



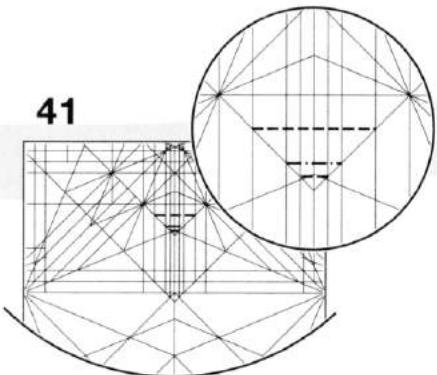
下半分の折り筋をのばすようにして
平らに折りたたむ
Fold the layer to the other side
and flatten the model.

32



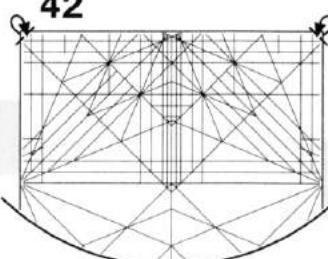
戻す
Unfold.

41



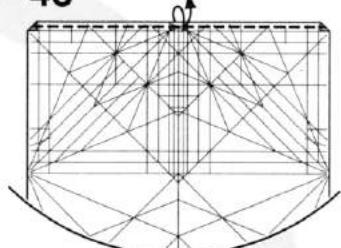
図のように
折り筋をつける
Crease as shown.

42



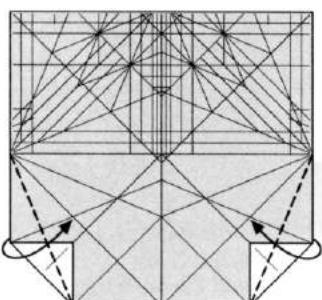
カドを折り筋に合わせて折る
Fold the corners to the
crease.

43



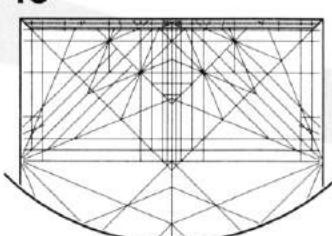
半分の幅で折り筋をつける
Crease at the half of
the width.

44

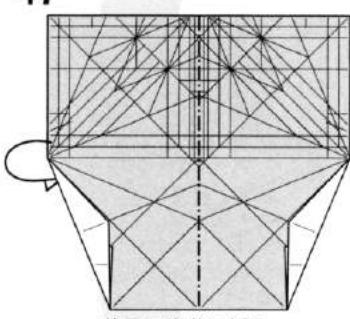


カドをついている折り筋で折る
Fold along the crease.

45

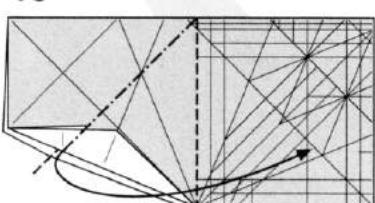


47



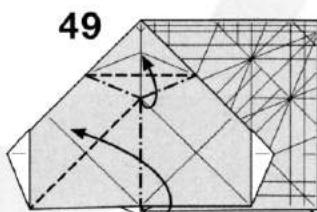
後ろへ半分に折る
Fold in half behind.

48



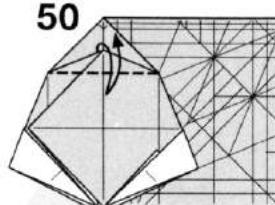
内側をひろげてつぶすように折る
Open and squash.

49



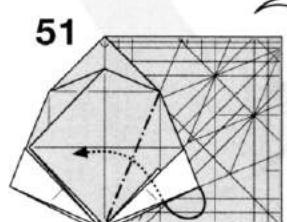
ついている折り筋を使って
中心線をつまむように折る
Raise the edge
and rabbit-ear.

50

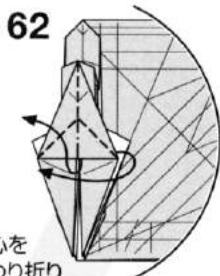


カドを下へ折って
折り筋をつける
Fold the flap down
and unfold.

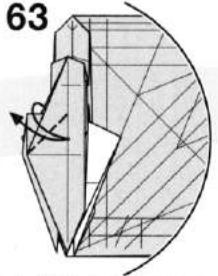
51



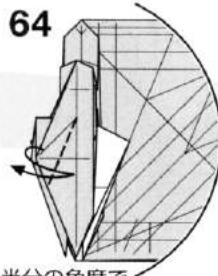
中わり折り
Inside reverse fold.



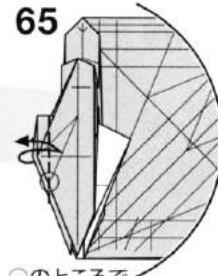
中心を
中わり折り
しながらカドを反対側へ折る
Fold the layer to the other
side while inside reverse
folding the middle edge.



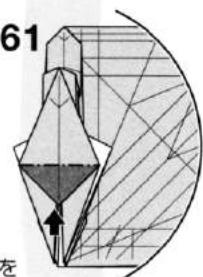
中わり折りしたところで
折り筋をつける
Fold and unfold
along the hidden edge.



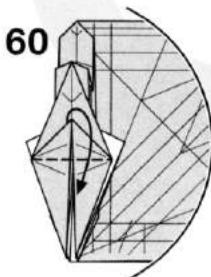
半分の角度で
折り筋をつける
Fold and unfold
at an angle bisector.



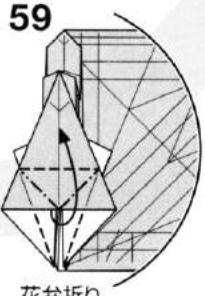
○のところで
折り筋をつける
Fold at the circled
point and unfold.



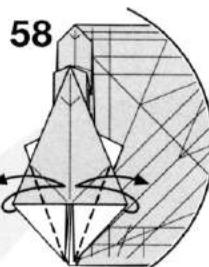
カドを
内側へ折り込む
Fold the layer to inside.



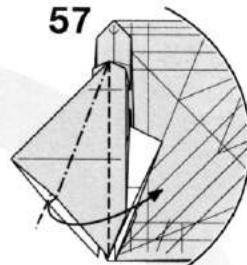
カドを下へ折る
Fold the corner
down.



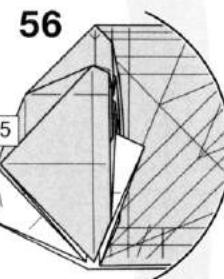
花弁折り
Petal fold.



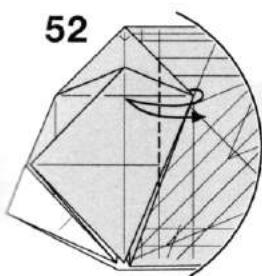
フチを中心
合わせて折り筋をつける
Fold the edges to the
center line.
Unfold.



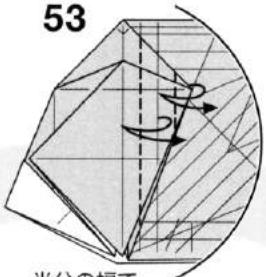
内側をひろげて
つぶすように折る
Open and squash.



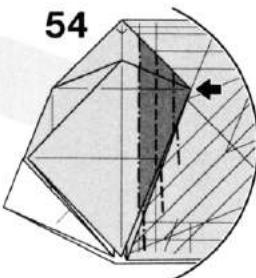
反対側も51-55と
同じように折る
Repeat 51-55
on the other side.



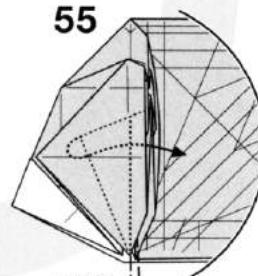
カドを中心
合わせて
折り筋をつける
Fold the corner to the
crease line and unfold.



半分の幅で
折り筋をつける
Crease at the
half of the widths.

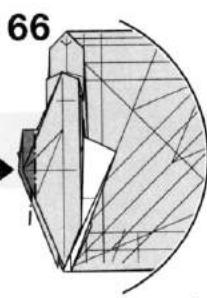


沈め段折り(Open sink)
Open sink in and out.

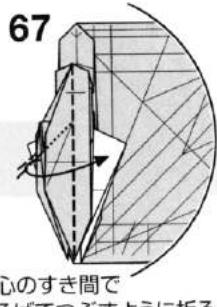


内側の
カドを中わり折り
Inside reverse fold
the hidden corner.

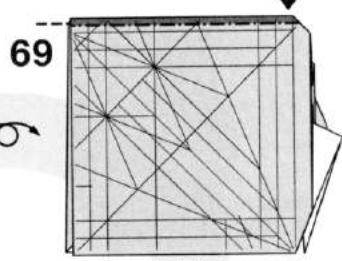
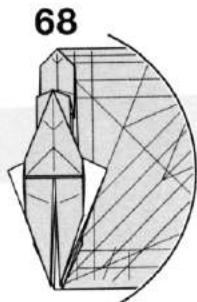
チョウ



沈め折り(Open sink)
Open sink.

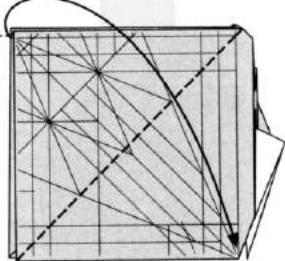


中心のすき間で
ひろげてつぶすように折る
Open and squash.

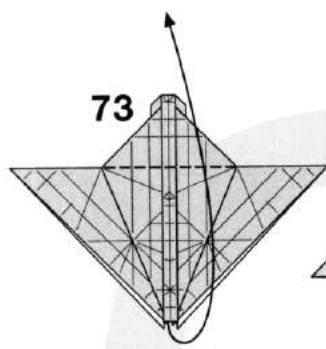


沈め折り(Open sink)
Open sink.

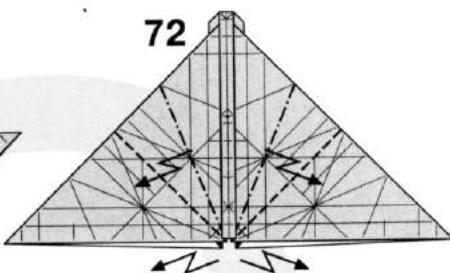
70



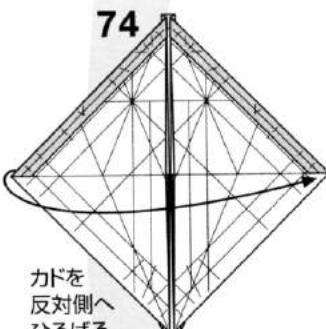
ついている折り筋で折って
中心の沈めた部分を
ひろげてつぶすように折る
Fold the layer and
squash the sunken layers.



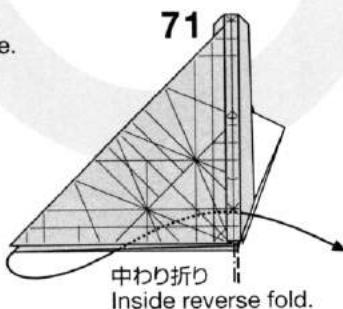
カドを上へ折る
Fold the layer up.



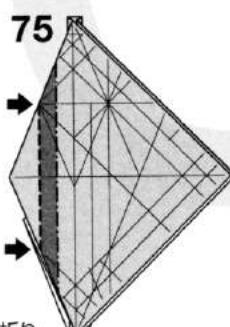
両側で段折り
Crimp inside.



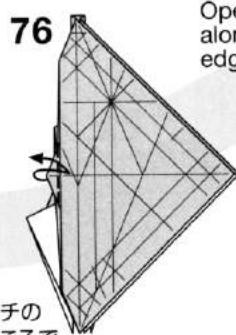
カドを
反対側へ
ひろげる
Fold the layer
to the other side.



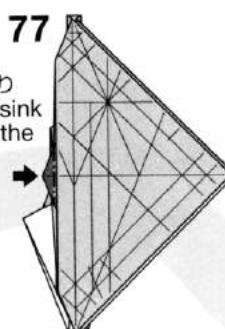
中わり折り
Inside reverse fold.



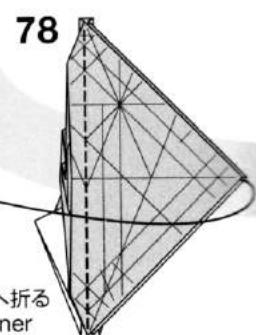
沈め段折り
Open sink in and out.



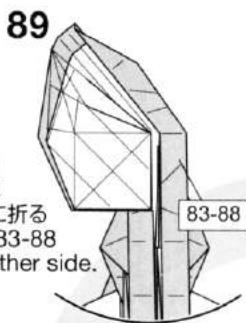
フチの
ところで
折り筋をつける
Fold and unfold
along the edge.



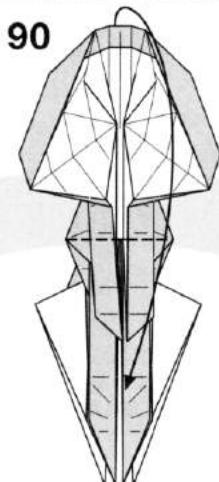
沈め折り
Open sink
along the edge.



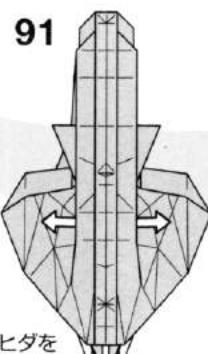
カドを反対側へ折る
Fold the corner
to the other side.



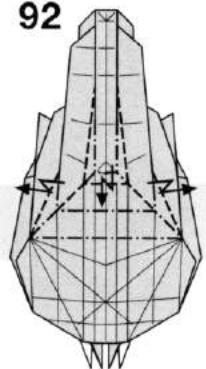
反対側も
83-88と
同じように折る
Repeat 83-88
on the other side.



83-88

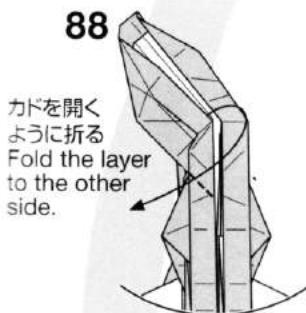


91



92

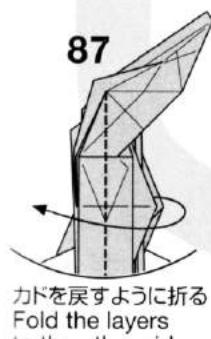
蛇腹状に折りたたむ
Fold with pleat-like
crease lines.



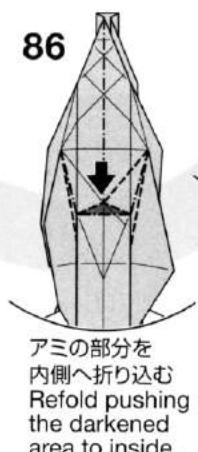
カドを開く
ように折る
Fold the layer
to the other
side.

ひろがっている部分を
そのまま下へ折る
Fold down.

ヒダを
ひろげて
内側のカドを引き出す
Pull out the inner layers.

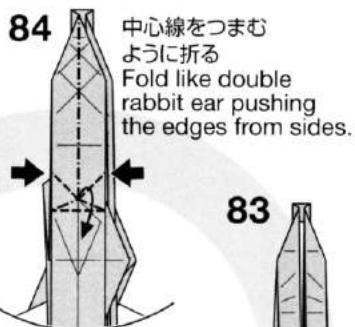


カドを戻すように折る
Fold the layers
to the other side.

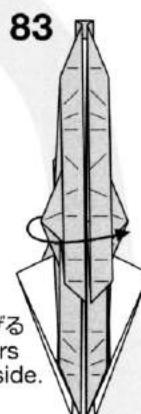


アミの部分を
内側へ折り込む
Refold pushing
the darkened
area to inside.

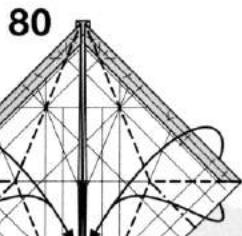
85



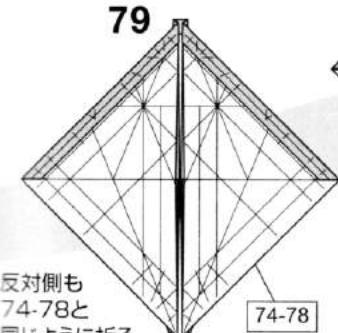
中心線をつまむ
ように折る
Fold like double
rabbit ear pushing
the edges from sides.



すき間をひろげる
Fold the layers
to the other side.

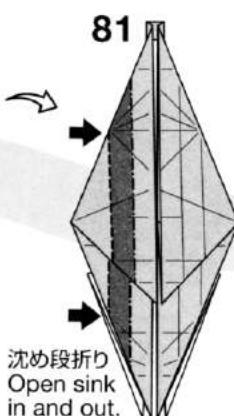


つまみ折り
Rabbit-ear fold.

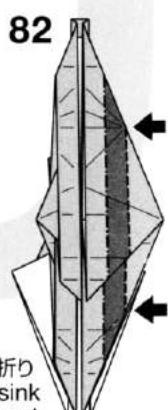


反対側も
74-78と
同じように折る
Repeat 74-78
on the other side.

74-78

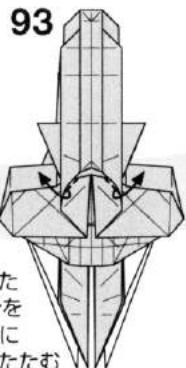


沈め段折り
Open sink
in and out.

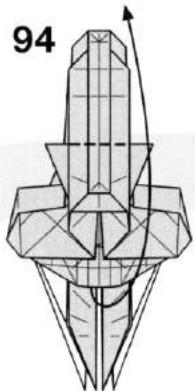


沈め段折り
Open sink
in and out.

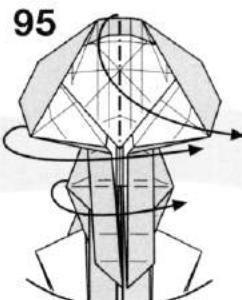
チョウ



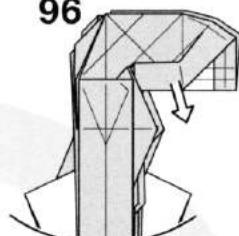
折った部分を
平らに
折りたたむ
後ろの部分は
平らにならない
Flatten the folded layers.
The model will
not be flat behind.



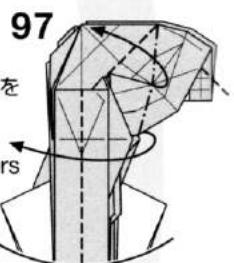
上へ折る
Fold the flap up.



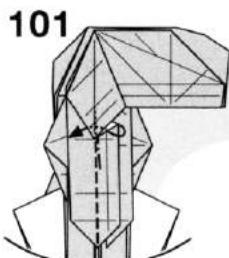
中心線で折って
横へ倒す
Fold to the other side.



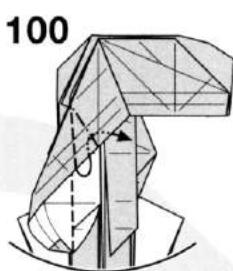
ヒダをひろげる
Open the layer.



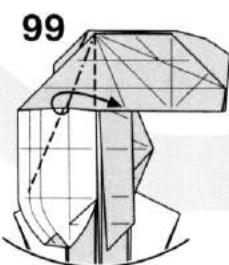
引き出したカドを
左上に折って
折りたたむ
Fold the layers
to the other
side and
swivel.



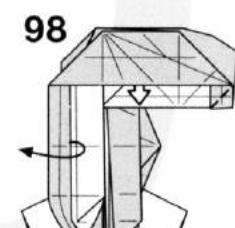
中わり折り
Inside reverse
fold.



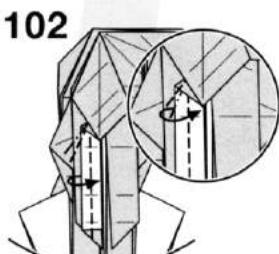
ついている折り筋を
使って中わり折りする
ように折る
Swivel inside using
the creases.



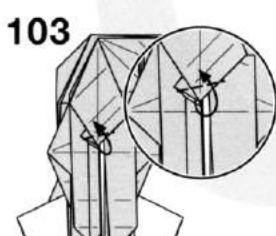
内側をひろげて
つぶすように折る
Open and squash.



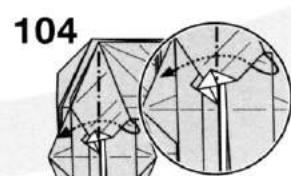
フチを引き出す
Unfold and pull
out the layer.



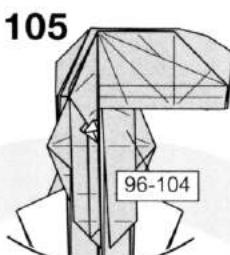
ついてる折り筋を
使って折る
Fold edge to edge
and swivel.



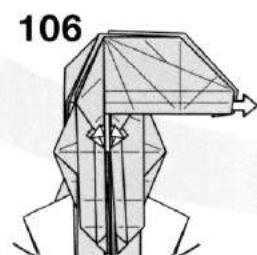
カドを少し折る
Fold the tip.



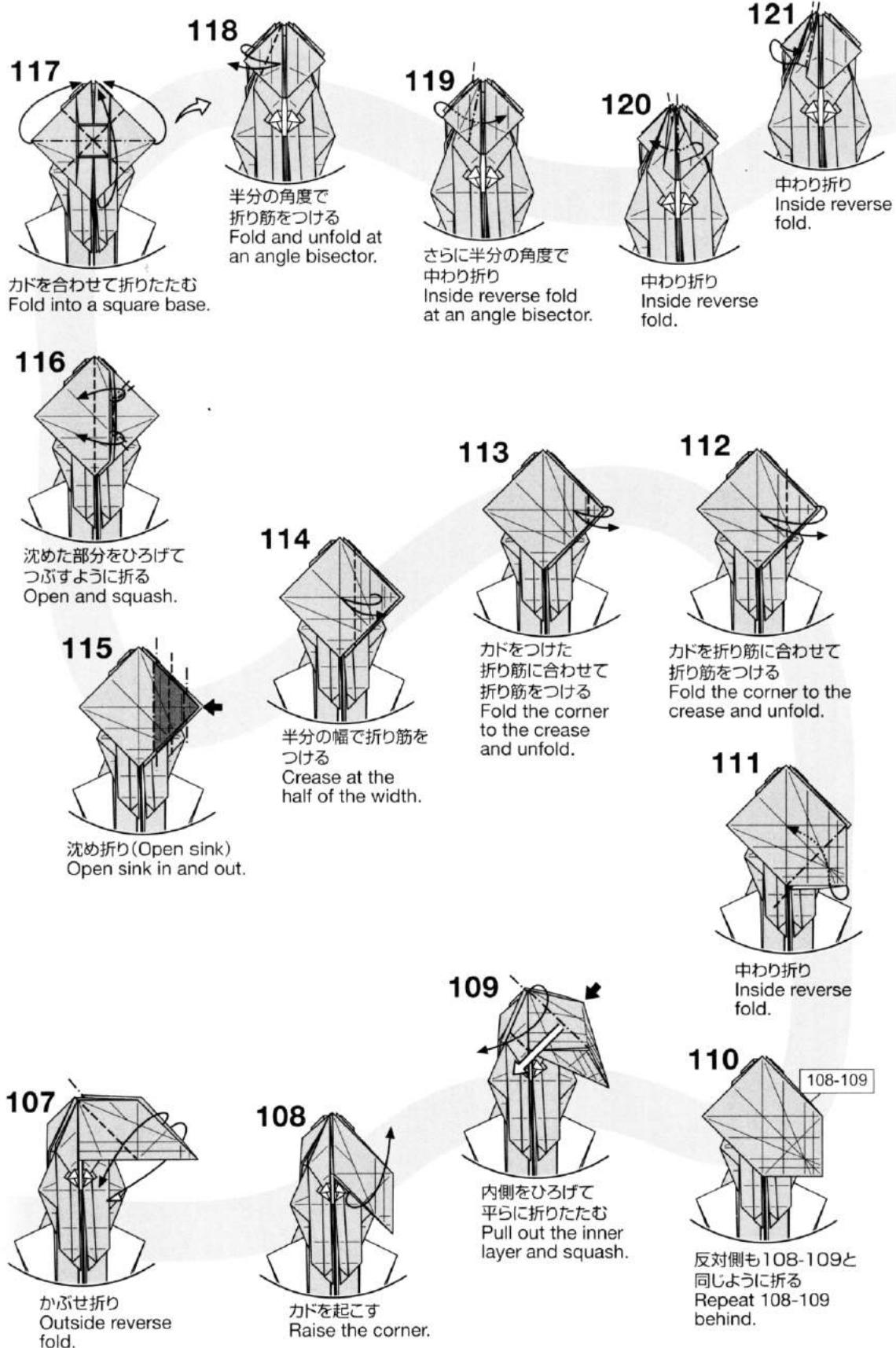
カドを内側へ折り込む
Fold the layer inside.

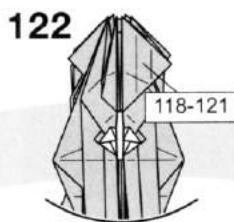


反対側も96-104と
同じように折る
Repeat 96-104
on the other side.

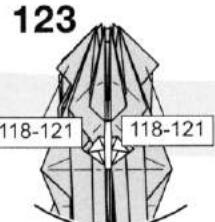


カドをひろげて出す
ように折りたたみ直す
Pull out the hidden
layer.

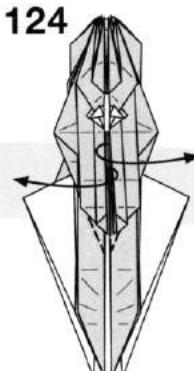




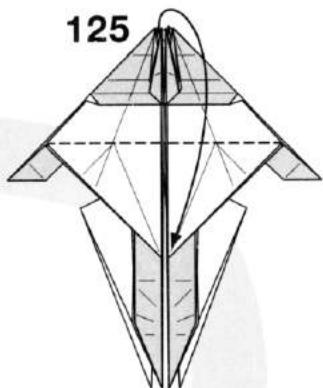
反対側も118-121と同じように折る
Repeat 118-121 on the other side.



後ろの2カ所も
118-121と同じように折る
Repeat 118-121 on the other layers.

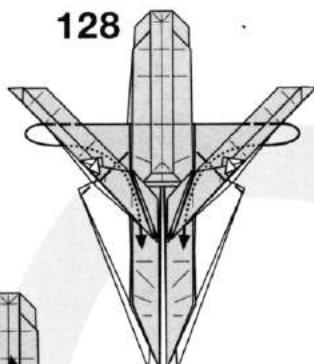


ひろげるように
折る
Open the layers.



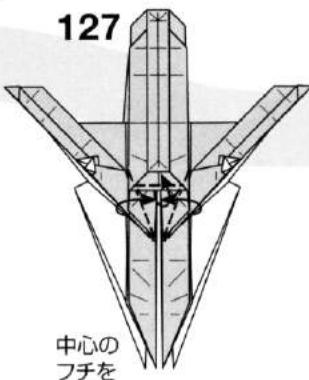
カドを下へ折る
Fold the layer down.

128



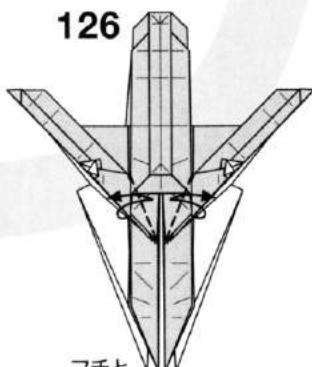
中わり折り
Inside reverse fold.

127



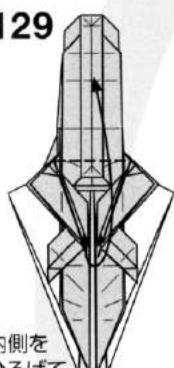
中心の
フチを
引き寄せるように折る
Fold the edge up
and swivel on sides.

126



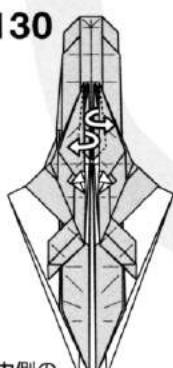
フチと
フチを合わせて
折り筋をつける
Fold edge to edge
and unfold.

129



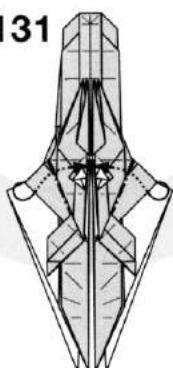
内側を
ひろげて
つぶすように折る
Petal fold.

130



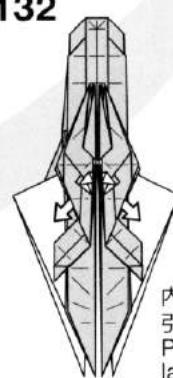
内側の
部分を外へ出す
Show hidden
layers.

131



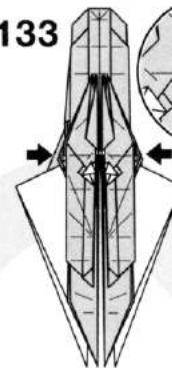
中わり折り
Inside reverse
fold.

132



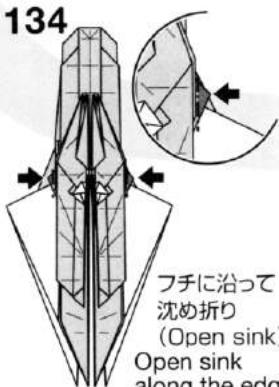
内側の部分を
引き出す
Pull out the
layers.

133

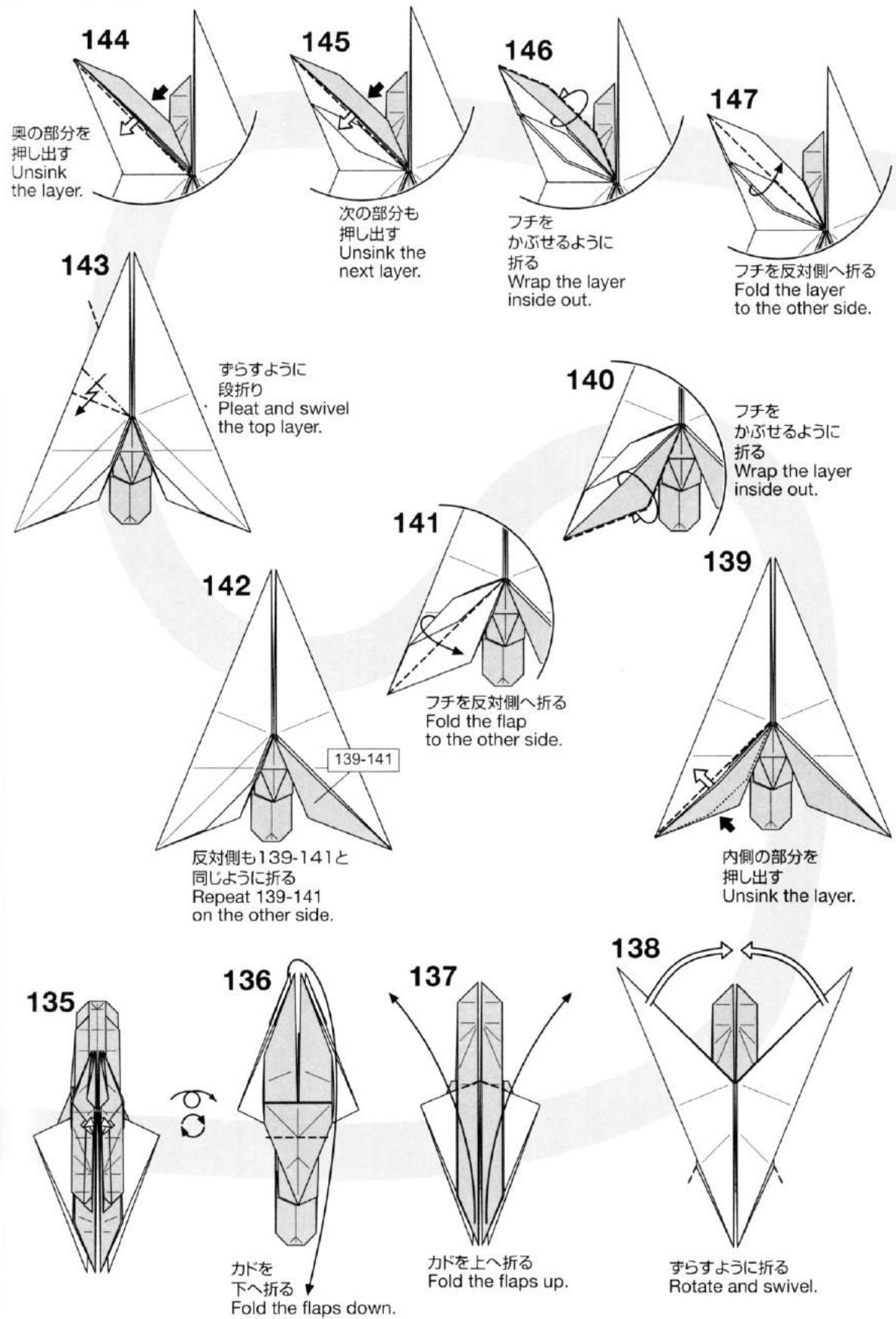


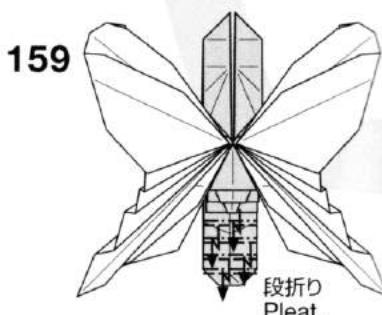
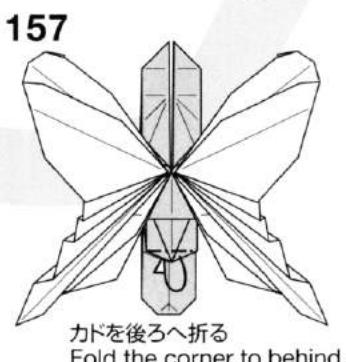
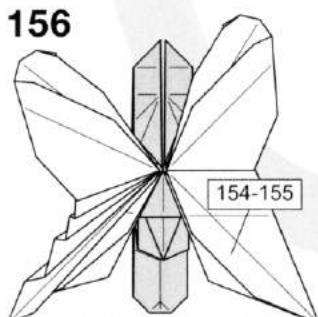
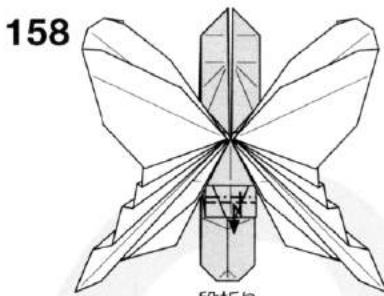
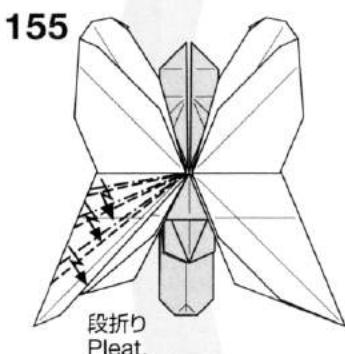
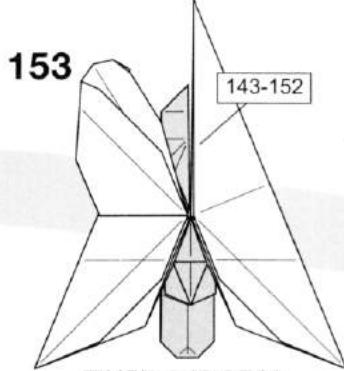
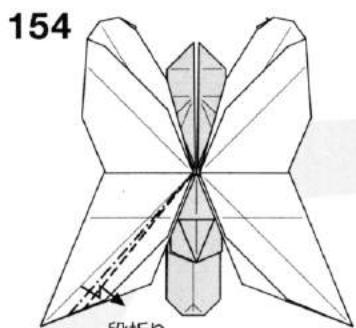
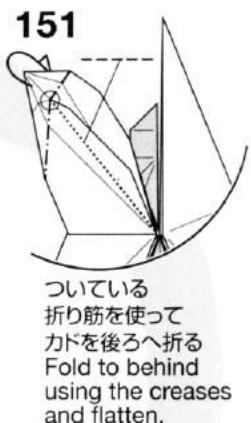
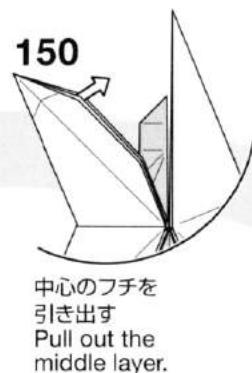
フチに沿って
沈め折り
(Open sink)
Open sink
along the edge.

134

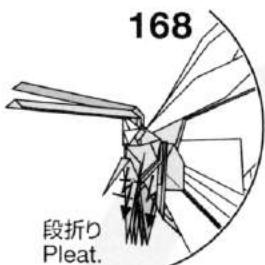


フチに沿って
沈め折り
(Open sink)
Open sink
along the edge.

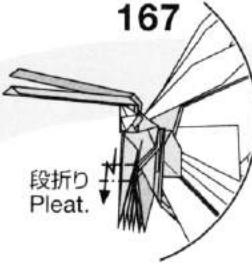




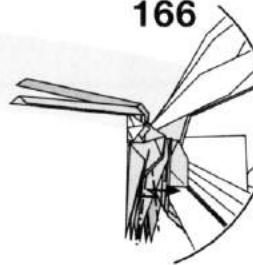
168

段折り
Pleat.

167

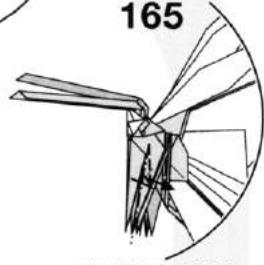
段折り
Pleat.

166



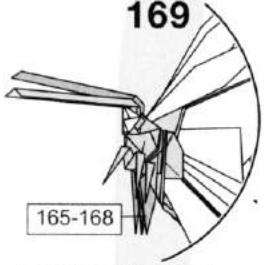
すき間に
折り込む
ように段折り
Pleat between
the layers.

165



すき間に
折り込む
ように段折り
Pleat between
the layers.

169



165-168

反対側も165-168と
同じように折る
Repeat 165-168 behind.

170

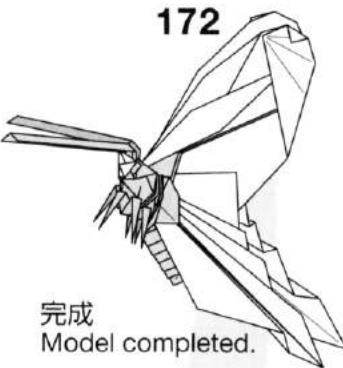


腹の部分を
かぶせるように折る
Outside reverse fold
the pleated flap.

完成

Model completed.

172

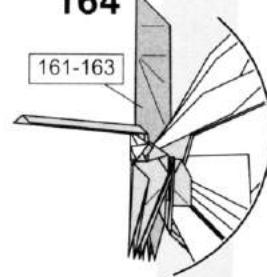


171



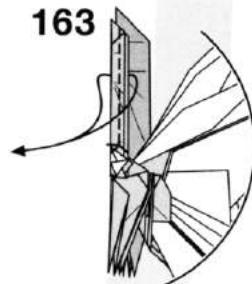
腹部を折り込む
Narrow the flap.

164



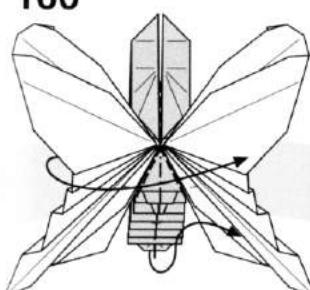
反対側も161-163と
同じように折る
Repeat 161-163
on the other side.

163



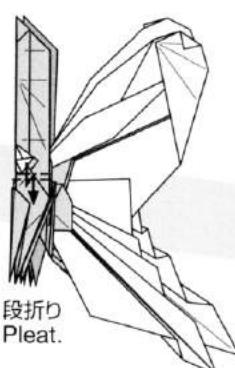
カドを
つまむように折る
Rabbit-ear fold.

160

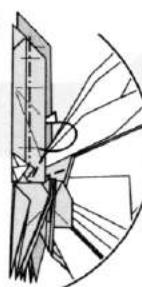


腹の部分を中わり折り
しながら半分に折る
Fold the pleated flap
in half while inside
reverse folding it.

161

段折り
Pleat.

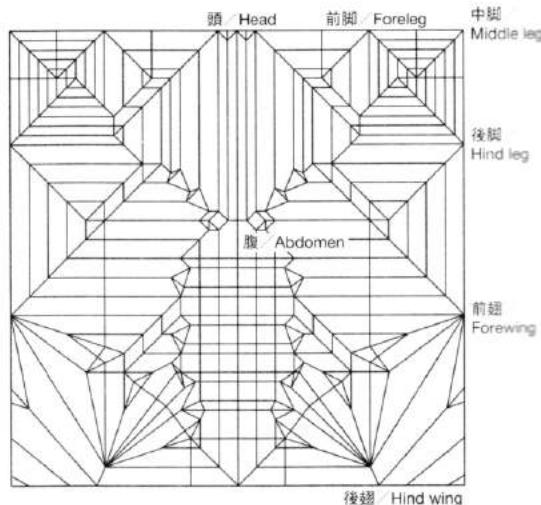
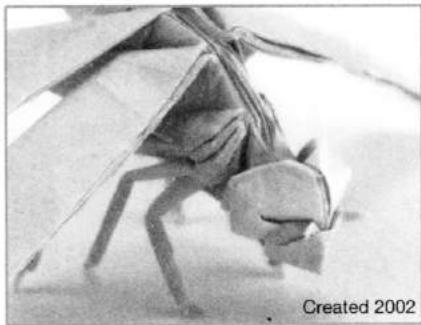
162



フチとフチを
合わせて後ろへ
折る
Fold edge to
edge to behind.

トンボ

Dragonfly



トンボというと、どのような形を思い浮かべるでしょうか？棒の先にとまっているような、横から見た形が私のイメージで、それこそが折りたい形でした。題材をどの視点から捉えるかによって、折るべき形は変わります。この作品を創作した当時は、横から見た形を重視したトンボの作品はあまりなく、折り紙としてどのような形に折るのが良いかを考え、それを実現するために試行錯誤しながら創作を進めていくのは、大変ながら楽しい作業でした。それ以外にも、体の下から折り出された長さの違う脚、前後の翅の位置など、この題材でやってみたかったことを全部詰め込んだのがこの作品です。結果的には、神谷作品中でもトップクラスの試作回数を記録し、同時に作者の満足度が最も高い作品の一つとなりました。

また、構造側から見ても大変ユニークな作品で、基本的には幅の違う蛇腹を組み合わせた構造なのですが、3:4:5の直角三角形を使った構造、いわゆる神谷パターンを利用して翅のカドを効率よく折り出しています。元々はもう少しわかりやすい構造だったのですが、蛇腹を1マスでも減らすため限界まで効率化を進めた結果、神谷パターン同士がお互いに干渉して絡み合い、非常に複雑な形に組み合わされた構造となっています。

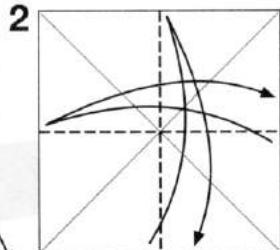
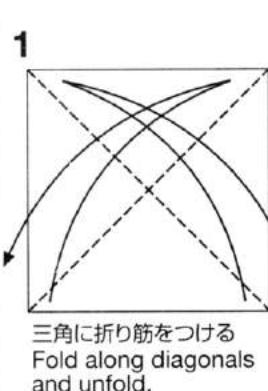
手順の数こそ200以下ではあるものの、本書のなかでも屈指の難度と密度の高い作品です。じっくりお楽しみください。

What is your prototypical posture of a dragonfly? I had in mind a dragonfly settling on the tip of a rod or a stick, and, in my images, I was looking at it from the side. So, I designed "that" dragonfly.

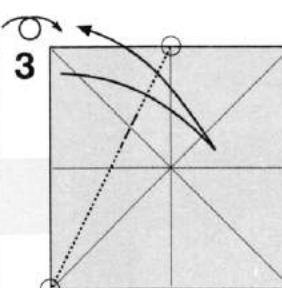
Scopes and angles will change the output model to be designed. When I designed this model, I did not know of a model of a "side-view" dragonfly, so it was truly fun for me to do trials and errors designing this model with the optimal shape in mind. Also, I wanted to express legs with different lengths and real-life distribution of the four wings, all of which I incorporated in this model. This model underwent trials and errors the most number of times ever, but at the same time this model is the one that I am most satisfied with.

This dragonfly is peculiar structurally as well. This is based on pleats with different widths, but I also succeeded in folding out flaps for wings using the "Kamiya pattern", structures with 3:4:5 right triangles. In earlier versions of the model, the structure was simpler, but, as I tried to reduce the number of pleats to the extreme, the "Kamiya pattern" got overlapped with each other in complex ways, making the final model more complex to fold.

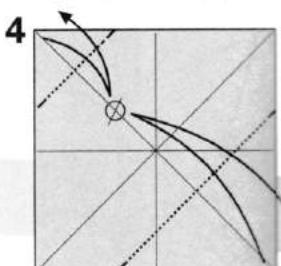
Although the number of steps is less than 200, this model is the most difficult and intriguing one. Enjoy folding!



半分に折り筋をつける
Fold in halves and unfold.

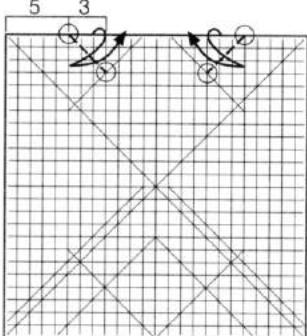


○を結ぶ線で印をつける
Fold along the line connecting the marks but only on the crossing point. Unfold.



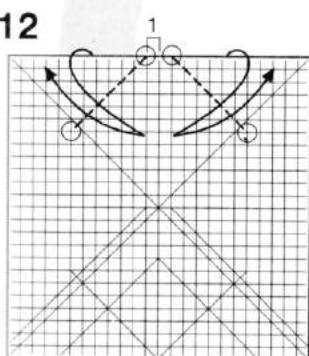
カドを○に合わせて印をつける
Fold so that the corners reach the mark but only fold on the edges. Unfold.

13



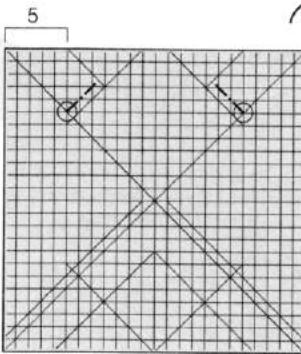
○を結ぶ線で
折り筋をつける
Fold and unfold
along the lines
connecting the
circled points.

12



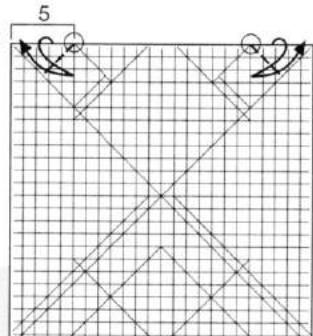
○を結ぶ線で
折り筋をつける
Fold and unfold
along the lines
connecting the
circled points.

14



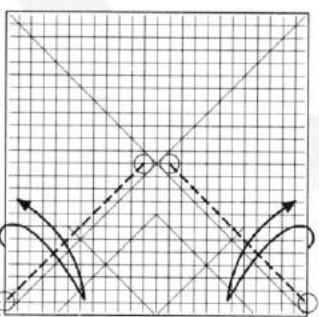
○のところから折り筋をつける
Fold and unfold as shown
starting from the circled
points.

15



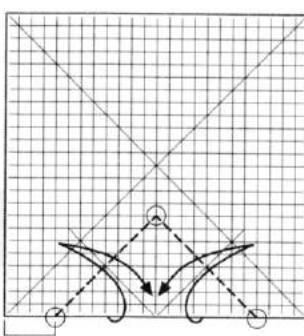
○のところから折り筋をつける
Fold and unfold as shown
starting from the circled
points.

11



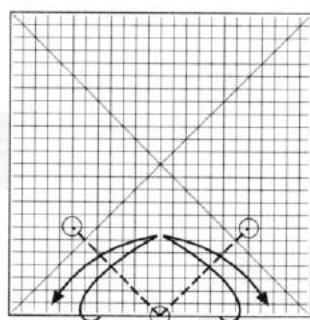
○を結ぶ線で折り筋をつける
Fold and unfold along the
lines connecting the circled
points.

10



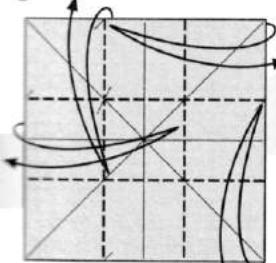
○を結ぶ線で折り筋をつける
Fold and unfold along the
lines connecting the circled
points.

9



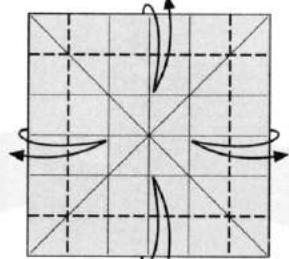
○を結ぶ線で折り筋をつける
Fold and unfold along the
lines connecting the circled
points.

5



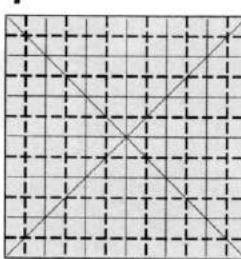
1/3の折り筋をつける
Fold and unfold along
the lines that dissect
the square in thirds.

6



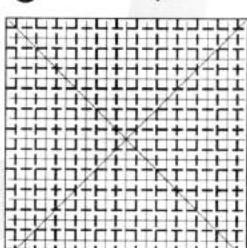
フチを折り筋に合わせて
1/6の折り筋をつける
Fold so that the
square is divided
into sixths. Unfold.

7

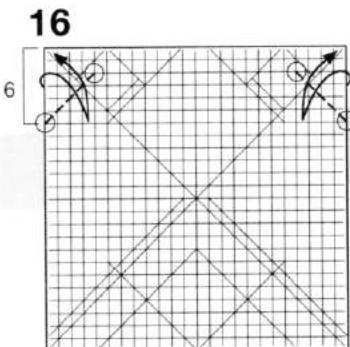


1/12の折り筋をつける
Fold so that the
square is divided
into twelfths. Unfold.

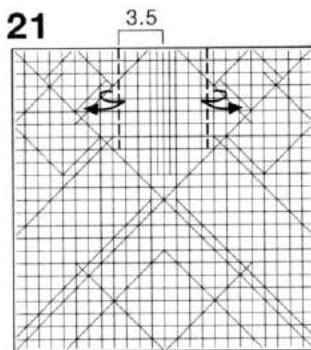
8



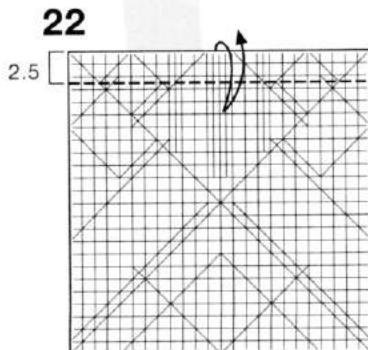
1/24の折り筋を
つける
Fold so that the
square is divided
into twenty-fourths.
Unfold.



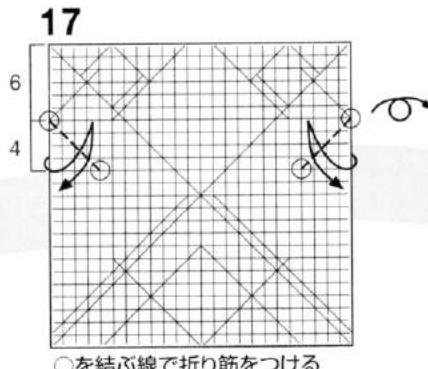
○を結ぶ線で折り筋をつける
Fold and unfold along the lines connecting the circled points.



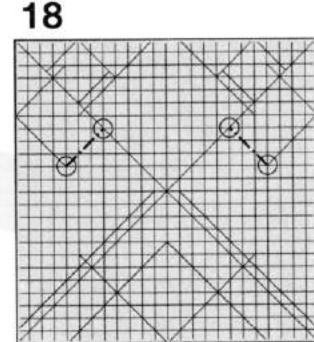
半分の幅で折り筋をつける
Fold and unfold dividing the pleats in half.



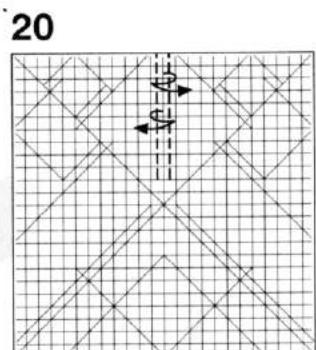
チフチを折り筋に合わせて
折り筋をつける
Fold so that the edge aligns with the crease.
Unfold.



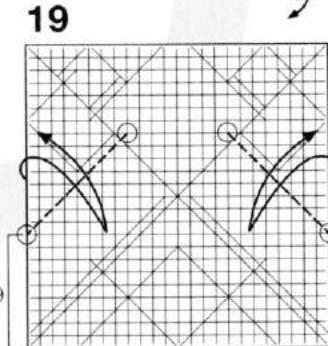
○を結ぶ線で折り筋をつける
Fold and unfold along the lines connecting the circled points.



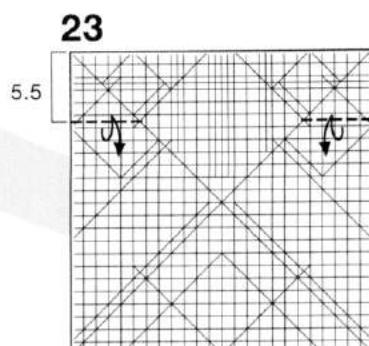
○を結ぶ線で折り筋をつける
Fold and unfold along the lines connecting the circled points.



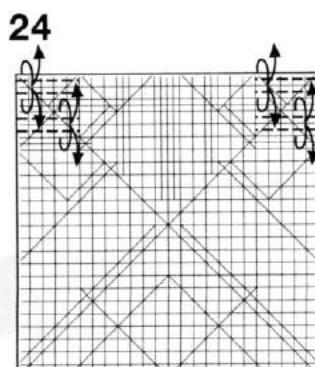
半分の幅で折り筋をつける
Fold and unfold dividing the pleats in half.



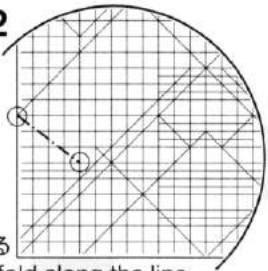
○を結ぶ線で折り筋をつける
Fold and unfold along the lines connecting the circled points.



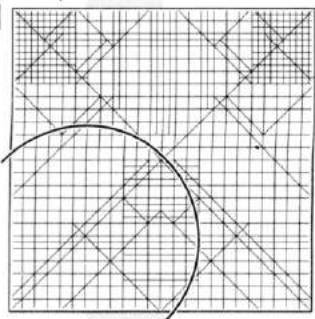
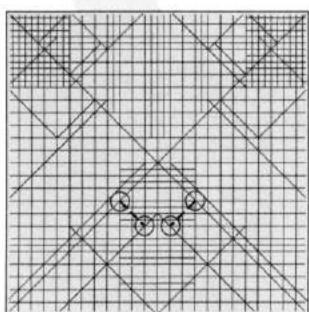
半分の幅で折り筋をつける
Fold and unfold dividing the pleat in half.



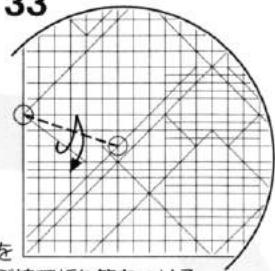
半分の幅で折り筋をつける
Fold and unfold dividing the pleat in half.

32

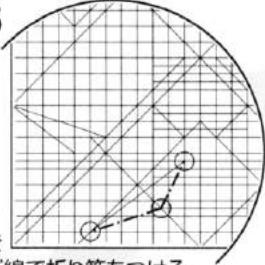
○を結ぶ線で折り筋をつける
Fold and unfold along the line connecting the circled points.

31**30**

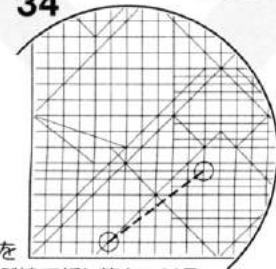
○を結ぶ線で折り筋をつける
Fold and unfold along the lines connecting the circled points.

33

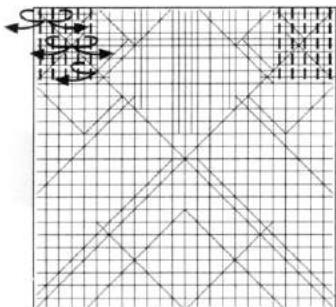
○を
結ぶ線で折り筋をつける
Fold and unfold along the line connecting the circled points.

35

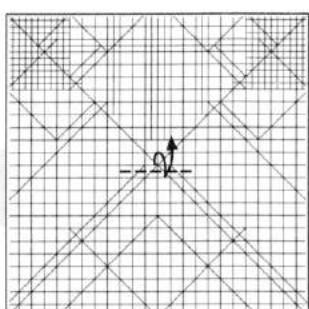
○を
結ぶ線で折り筋をつける
Fold and unfold along the lines connecting the circled points.

34

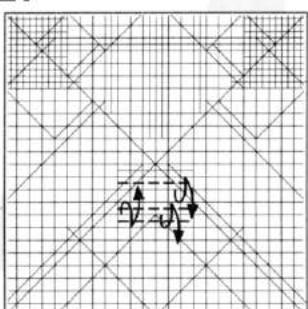
○を
結ぶ線で折り筋をつける
Fold and unfold along the line connecting the circled points.

25

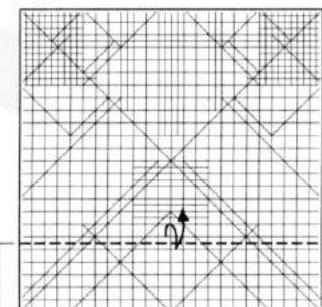
半分の幅で折り筋をつける
Fold and unfold dividing the pleats in half.

26

半分の幅で折り筋をつける
Fold and unfold dividing the pleat in half.

27

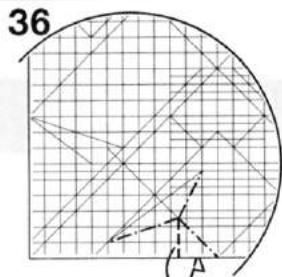
半分の幅で折り筋をつける
Fold and unfold dividing the pleats in half.

28

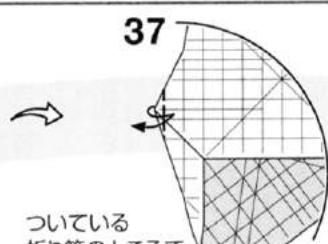
5.5

半分の幅で折り筋をつける
Fold and unfold dividing the pleat in half.

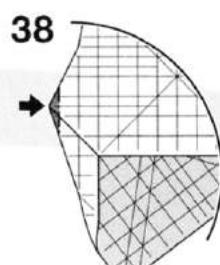
トンボ



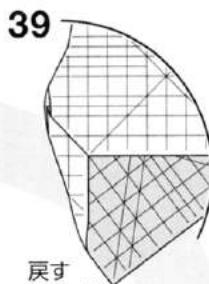
つけた折り筋を使って折りたたむ
Assemble using the crease.



ついている
折り筋のところで
折り筋をつける
Fold along the crease.
Unfold.

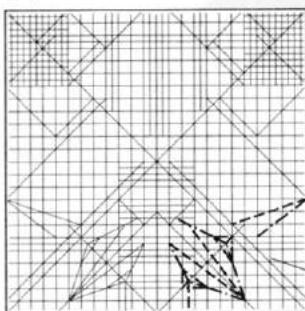


沈め折り
(Open sink)
Open sink.



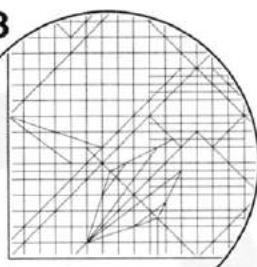
戻す
Unfold.

44



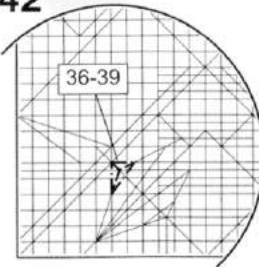
反対側も32-42と同じように
折り筋をつける
Repeat 32-42 on the
other side.

43



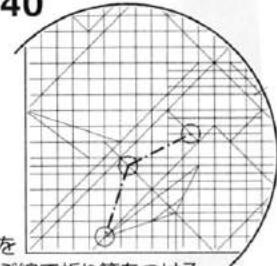
32-42

42



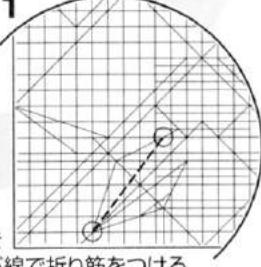
36-39と同じように
折り筋をつける
Repeat 36-39
on the other side.

40



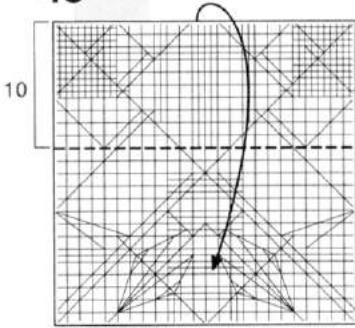
○を
結ぶ線で折り筋をつける
Fold and unfold along
the lines connecting
the circled points.

41



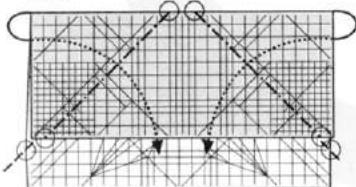
○を
結ぶ線で折り筋をつける
Fold and unfold along
the line connecting
the circled points.

45



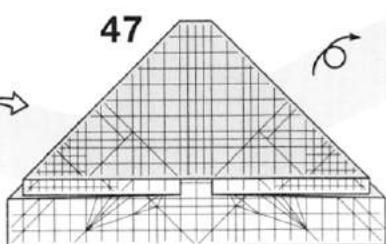
チフチを10/24のところで折る
Fold the edge down
along the 10/24 line.

46



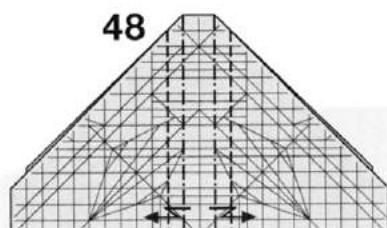
○を結ぶ線で中わり折り
Inside reverse fold along
the lines connecting the
circled points.

47

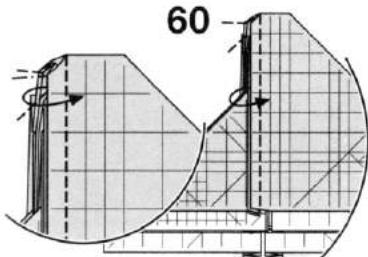


6

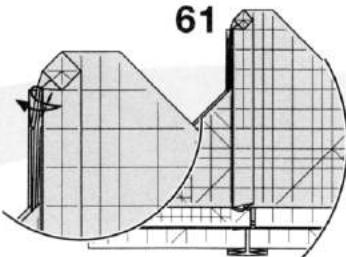
48



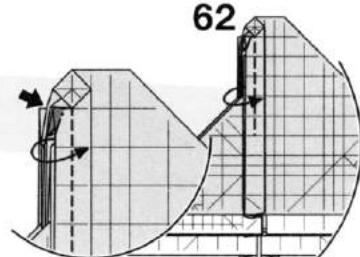
両側で段折り
Pleat on both sides.



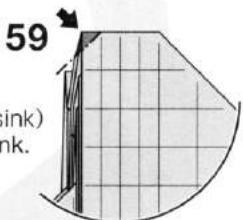
フチを反対側へ折って上の沈めた部分をつぶすように折る
Fold the edge to the other side.
Flatten the top part.



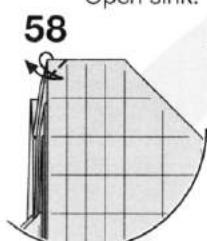
フチを折り筋に合わせて折り筋をつける
Fold to the crease.
Unfold.



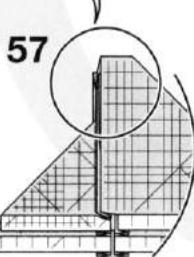
フチを反対側へ折って■の部分をひろげてつぶすように折る
Fold the edge to the other side, flattening the darkened part.



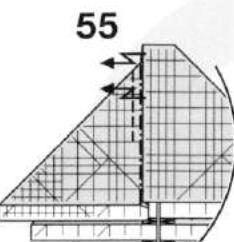
沈め折り
(Open sink)
Open sink.



カドを折り筋に合わせて折り筋をつける
Fold the edge to the vertical crease.

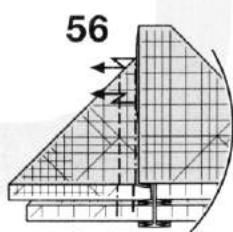


57



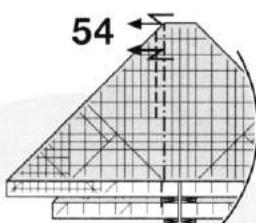
55

上半分だけ両側で段折り
Crimp on the upper portion.



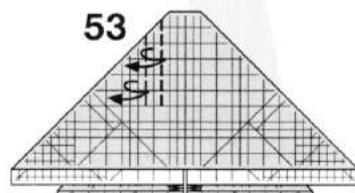
56

両側で段折り
Crimp.



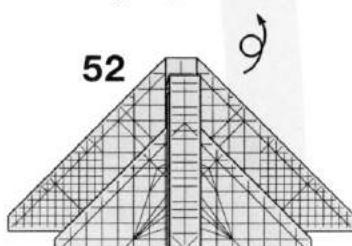
54

上半分だけ両側で段折り
Crimp on the upper portion.

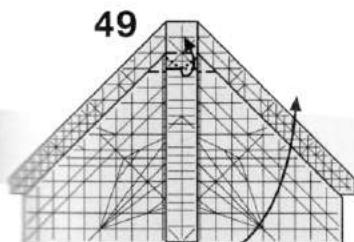


53

半分の幅で折り筋をつける
Fold and unfold
dividing the pleats in half.

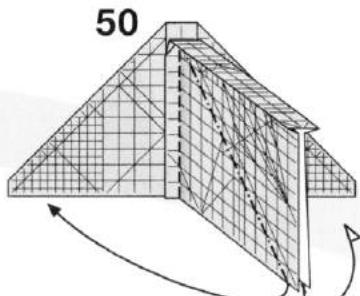


52



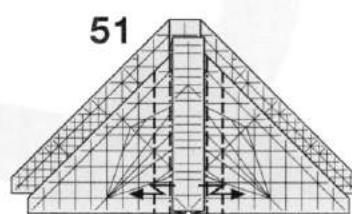
49

ついている折り筋で中心の部分を持ち上げるように折る
Raise the flap at the center along the creases.



内側をひろげてつぶすように折る
Open and flatten.

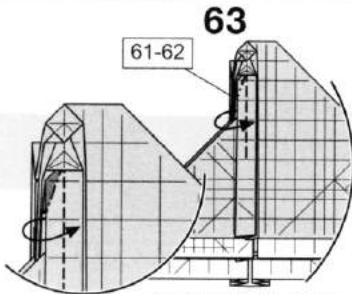
50



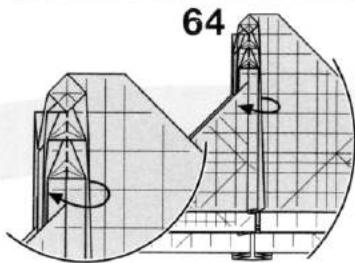
51

両側で段折り
Crimp on both sides.

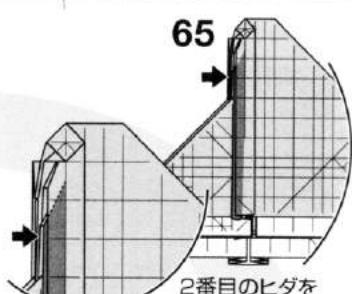
トンボ



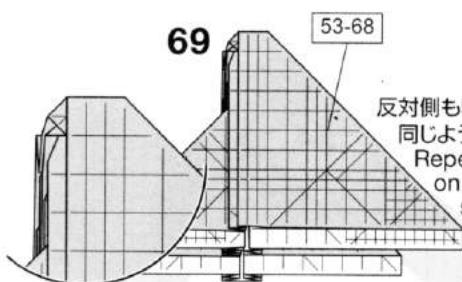
次のヒダも61-62と同じように折る
Repeat 61-62 on the next layer.



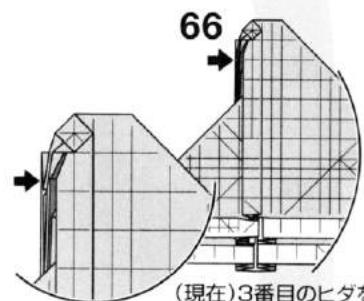
上の2枚を反対側へ戻すように折る
Fold two layers back.



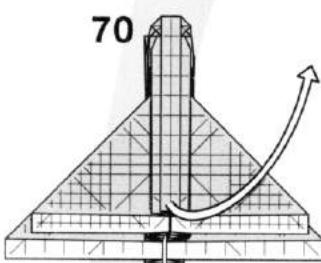
2番目のヒダを内側へ押し込む
Push the second layer inside.



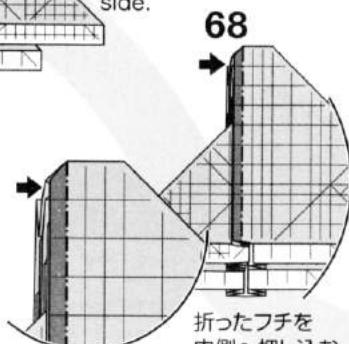
反対側も53-68と同じように折る
Repeat 53-68 on the other side.



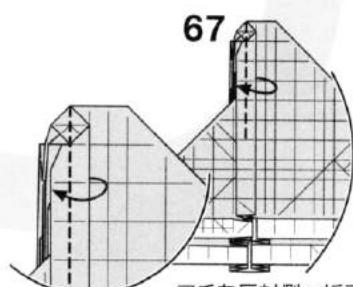
(現在)3番目のヒダを内側へ押し込む
Push the third layer inside.



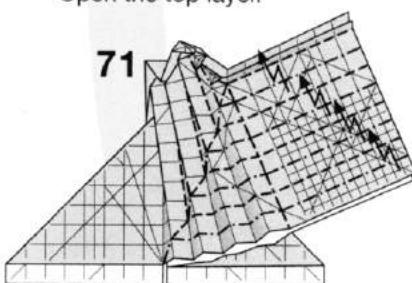
手前半分を軽くひろげる
Open the top layer.



折ったフチを内側へ押し込む
Push the layer inside.

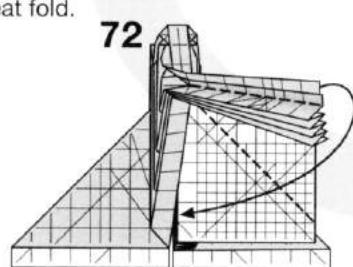


フチを反対側へ折る
Fold the layer to the other side.

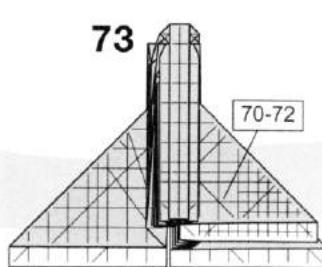


ついている折り筋で蛇腹状に折りたたむ
Pleat fold.

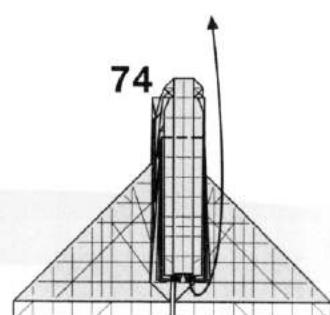
※以下、ひろげて折りたたむ工程が続きます。
主要な折り筋はついているはずなので、
必ず「可能な限りついている折り筋を使って」
折りたたんで下さい。
In what follows, use the existing creases
unless otherwise noted.



途中の図 平らに折りたたむ
Flatten the model.



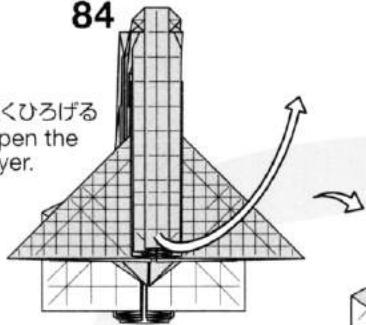
反対側も70-72と同じように折る
Repeat 70-72 on the other side.



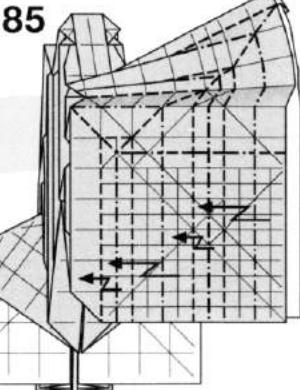
カドを上へ折る
Raise the flap.

84

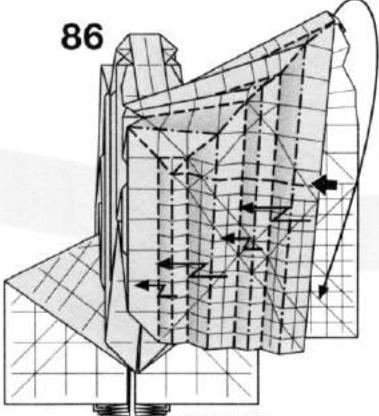
軽くひろげる
Open the layer.



85

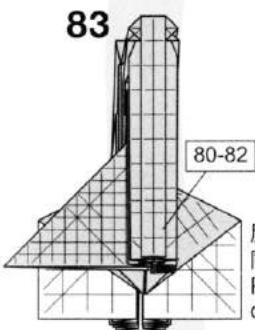


86



83

ついている折り筋で
蛇腹状に折りたたむ
Pleat using the
creases.



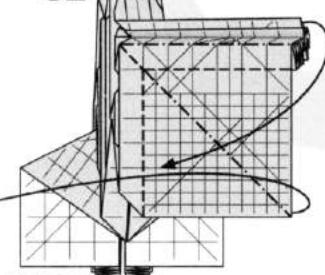
80-82

反対側も80-82と
同じように折る
Repeat 80-82
on the other side.

80

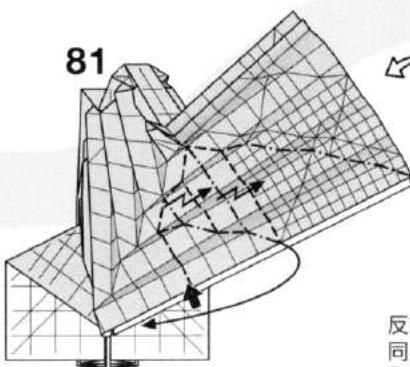
軽くひろげる
Open the layers.

82



途中の図
平らに折りたたむ
Flatten the model,
assembling along
the creases.

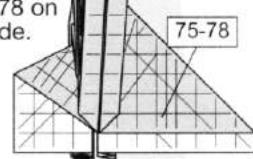
81



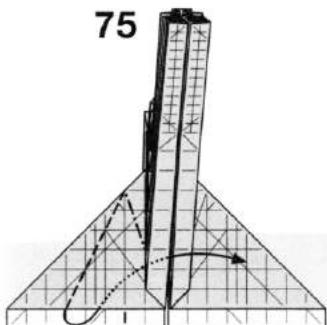
ついている折り筋で
蛇腹状に折りたたむ
Assemble using
the creases.

79

反対側も75-78と
同じように折る
Repeat 75-78 on
the other side.

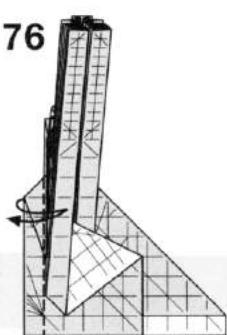


75



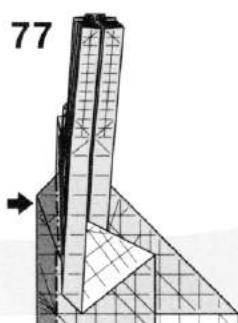
ついている折り筋を使って
中わり折りするように折る
Inside reverse fold.

76



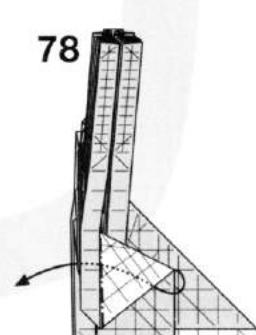
ついている折り筋のところで
折り筋をつける
Fold along the crease.

77



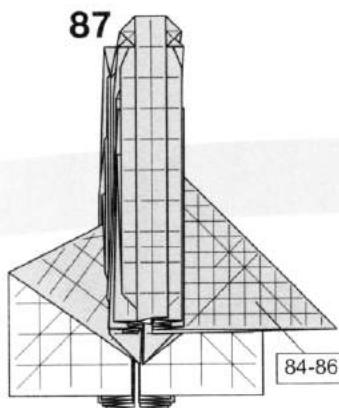
沈め折り
(Open Sink)
Open sink.

78

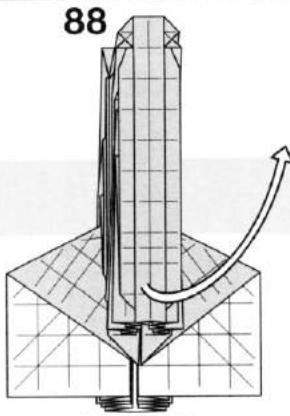


中わり折り
Inside reverse fold.

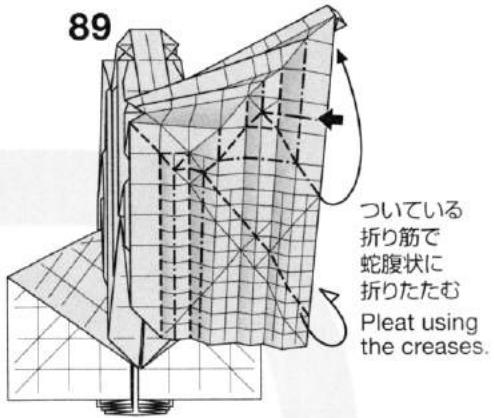
トンボ



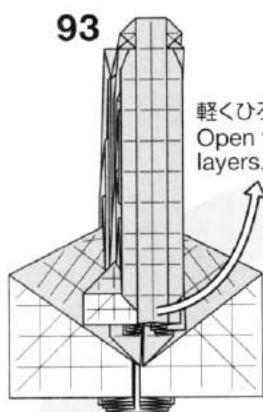
反対側も84-86と同じように折る
Repeat 84-86 on the other side.



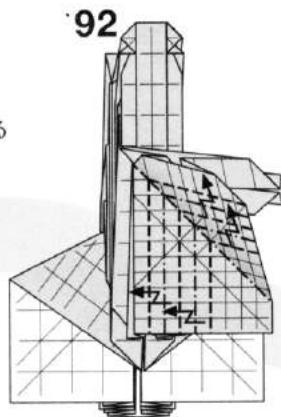
軽くひろげる
Open the layer.



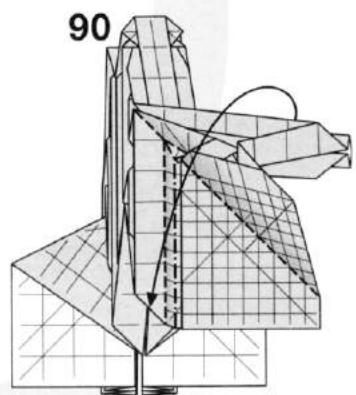
ついている
折り筋で
蛇腹状に
折りたたむ
Pleat using
the creases.



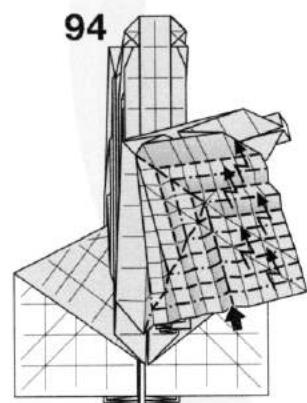
軽くひろげる
Open the
layers.



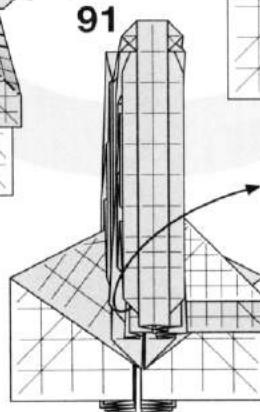
ついている折り筋で
蛇腹状に折りたたむ
Pleat fold.



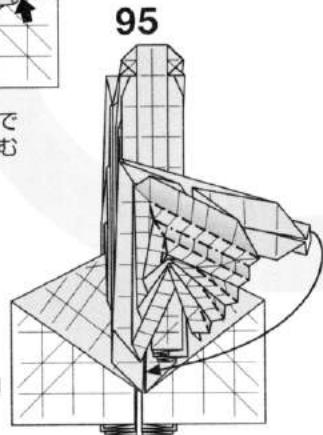
途中の図
平らに折りたたむ
Flatten the model
assembling along
the creases.



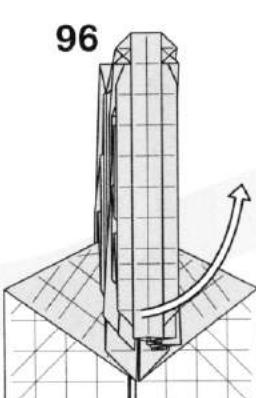
ついている折り筋で
蛇腹状に折りたたむ
Pleat fold.



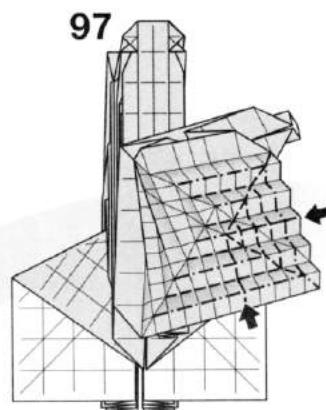
用紙のカドの
部分をひろげる
Open the layers.



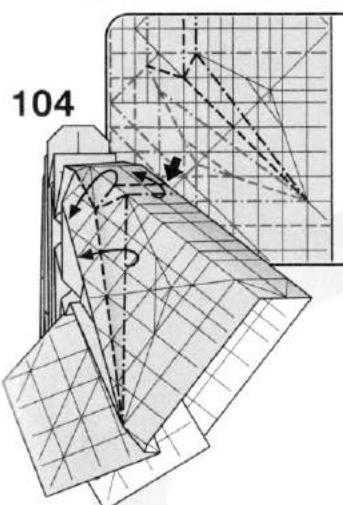
途中の図
平らに折りたたむ
Assemble using
the creases.



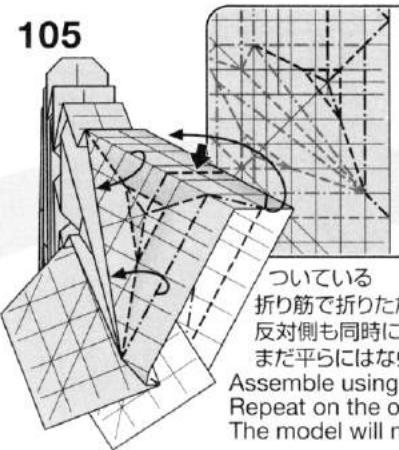
軽くひろげる
Open the layers.



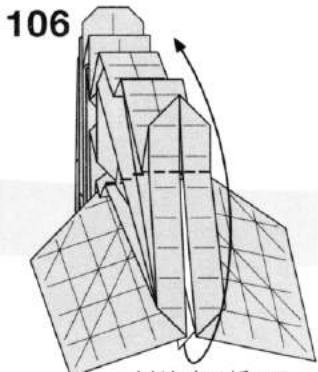
ついている折り筋で用紙の
カドをつまむようにして
蛇腹状に折りたたむ
Pleat fold using
the creases.



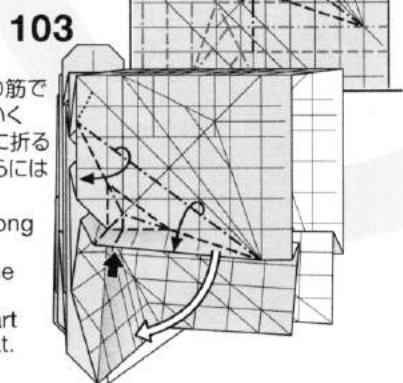
上の2本の斜めの折り筋を、
新しくつけて折りたたむ
反対側も同時に折る
Assemble the model
adding two creases.



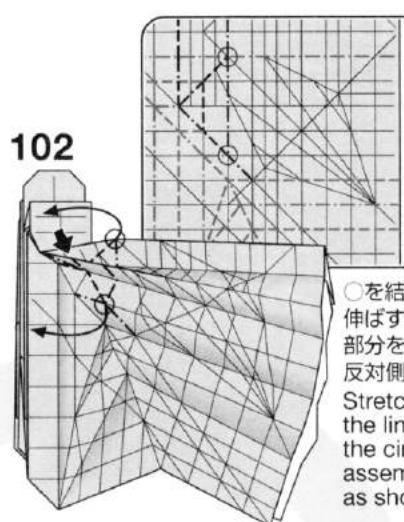
ついている
折り筋で折りたたむ
反対側も同時に折る
まだ平らにはならない
Assemble using the creases.
Repeat on the other side.
The model will not lie flat yet.



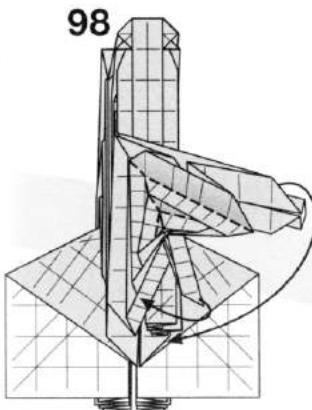
カドを上へ折って
平らに折りたたむ
Fold up the
bottom layers.



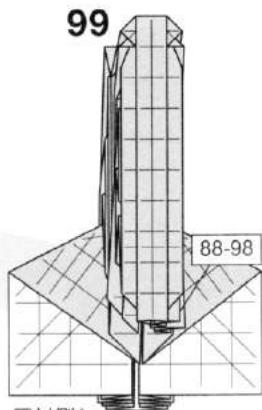
ついている折り筋で
折りたたんでいく
反対側も同時に折る
下の部分は平らには
ならない
Assemble along
the creases.
Repeat on the
other side.
The lower part
will not lie flat.



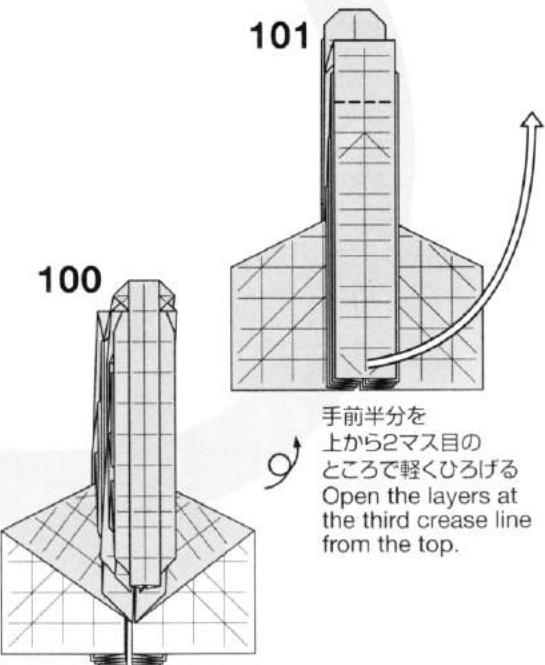
○を結ぶ折り筋を
伸ばすように付け根の
部分を折りたたむ
反対側も同時に折る
Stretch layers along
the line connecting
the circled points and
assemble the model
as shown in 103.



途中の図
平らに折りたたむ
Flatten the model.



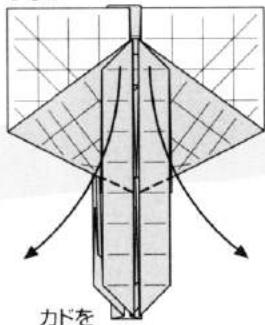
反対側も
88-98と同じように折る
Repeat 88-98 on the
other side.



手前半分を
上から2マス目の
ところで軽くひろげる
Open the layers at
the third crease line
from the top.

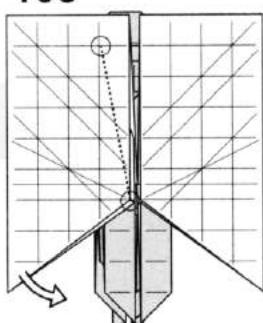
トンボ

107



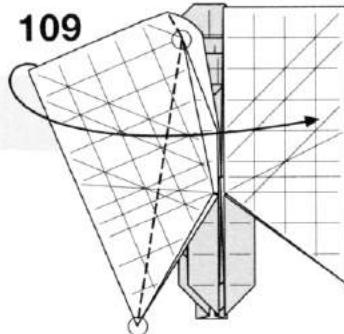
カドをひろげるようすに折る
Fold the layers down.

108



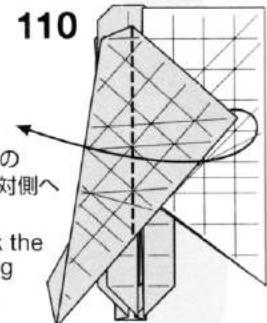
○を結ぶ線で下らすように折る
Slide the layer down using the line connecting the circled points.

109



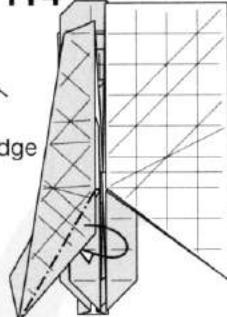
○を結ぶ線で反対側へ折る
Fold the layer to the other side along the line connecting the circled points.

110



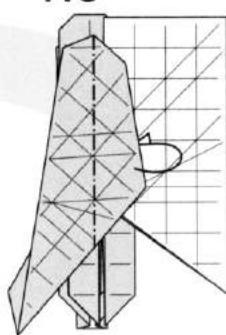
後ろのフチのところで反対側へ折る
Fold back the layer along the edge.

114



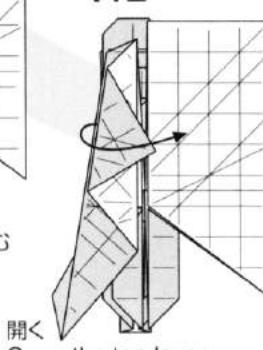
カドを内側へ折り込む
Fold the edge to inside.

113



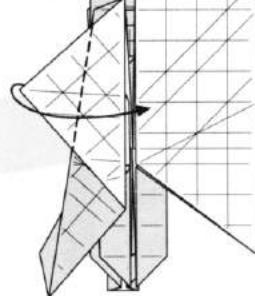
フチを内側へ折り込む
Fold the edge to inside.

112



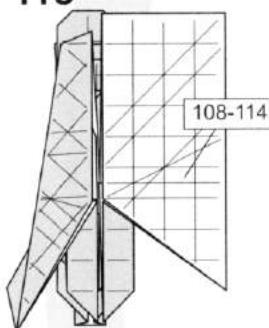
開く
Open the top layer to the other side.

111



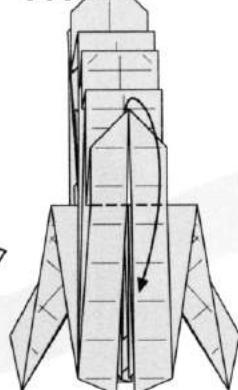
後ろのフチのところで反対側へ折る
Fold the layer along the edge.

115



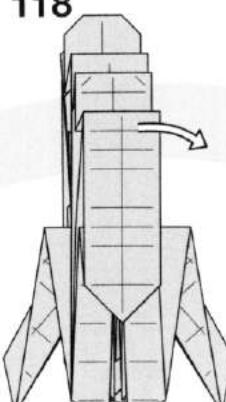
反対側も108-114と同じように折る
Repeat 108-114 on the other side.

117



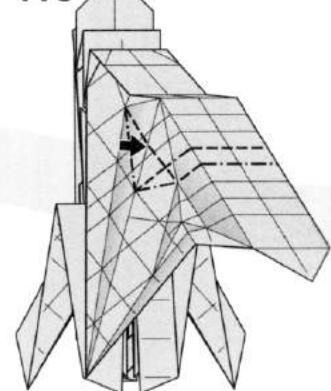
カドを下へ折る
Fold the layer down.

118

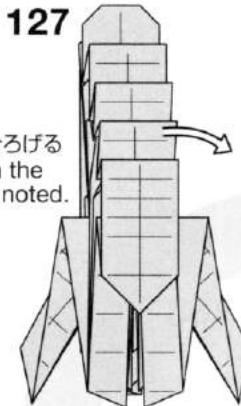


軽くひろげる
Open the top layer.

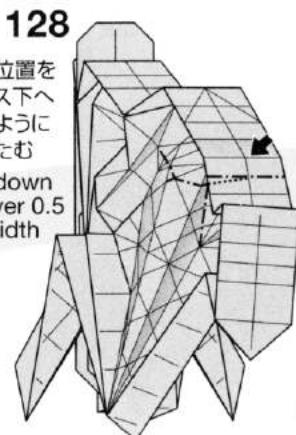
119



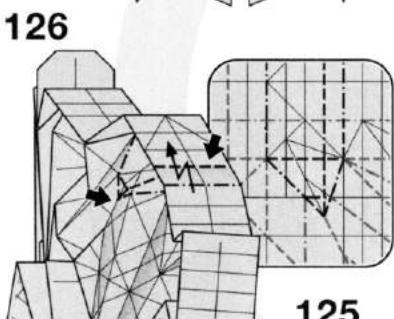
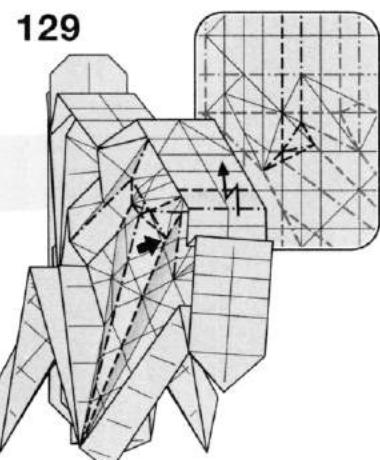
ヒダの位置をずらすように折りたたみ直す
Slide down the layer using the creases.



軽くひろげる
Open the layer noted.

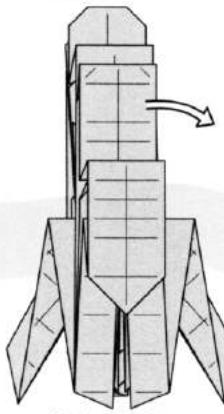


ヒダの位置を
0.5マス下へ
ずらすように
折りたたむ
Slide down
the layer 0.5
grid width
lower.

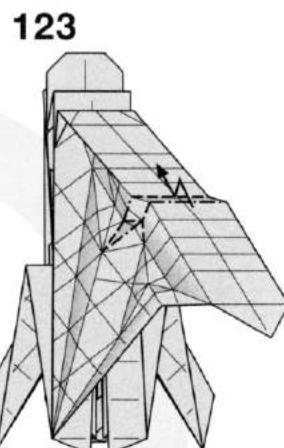


上は1、下は0.5に
なるように折りたたむ
Assemble as shown.
The ratio of the
width of the crimp
will be 1 (upper)
by 0.5 (lower).

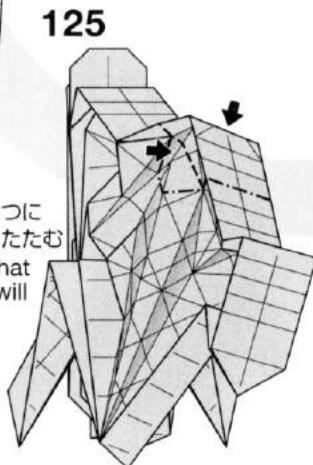
124



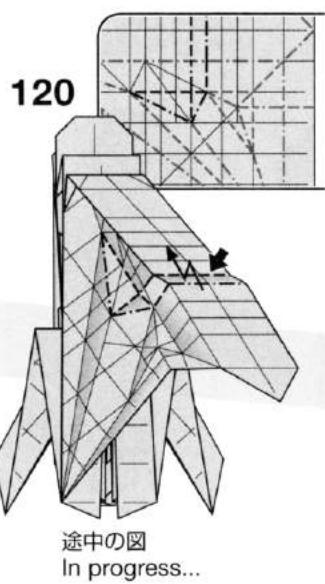
軽くひろげる
Open the layer.



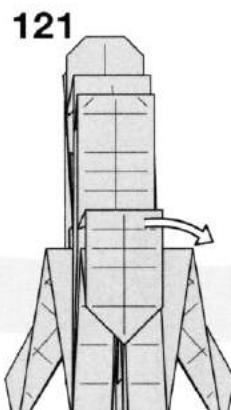
途中の図
In progress...



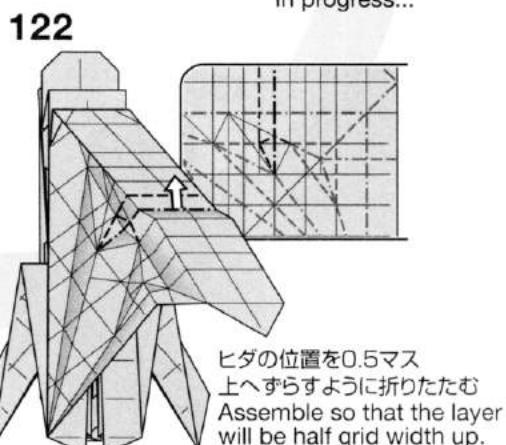
ヒダをひろげて2つに
分けるように折りたたむ
Assemble so that
the new layer will
be created.



途中の図
In progress...

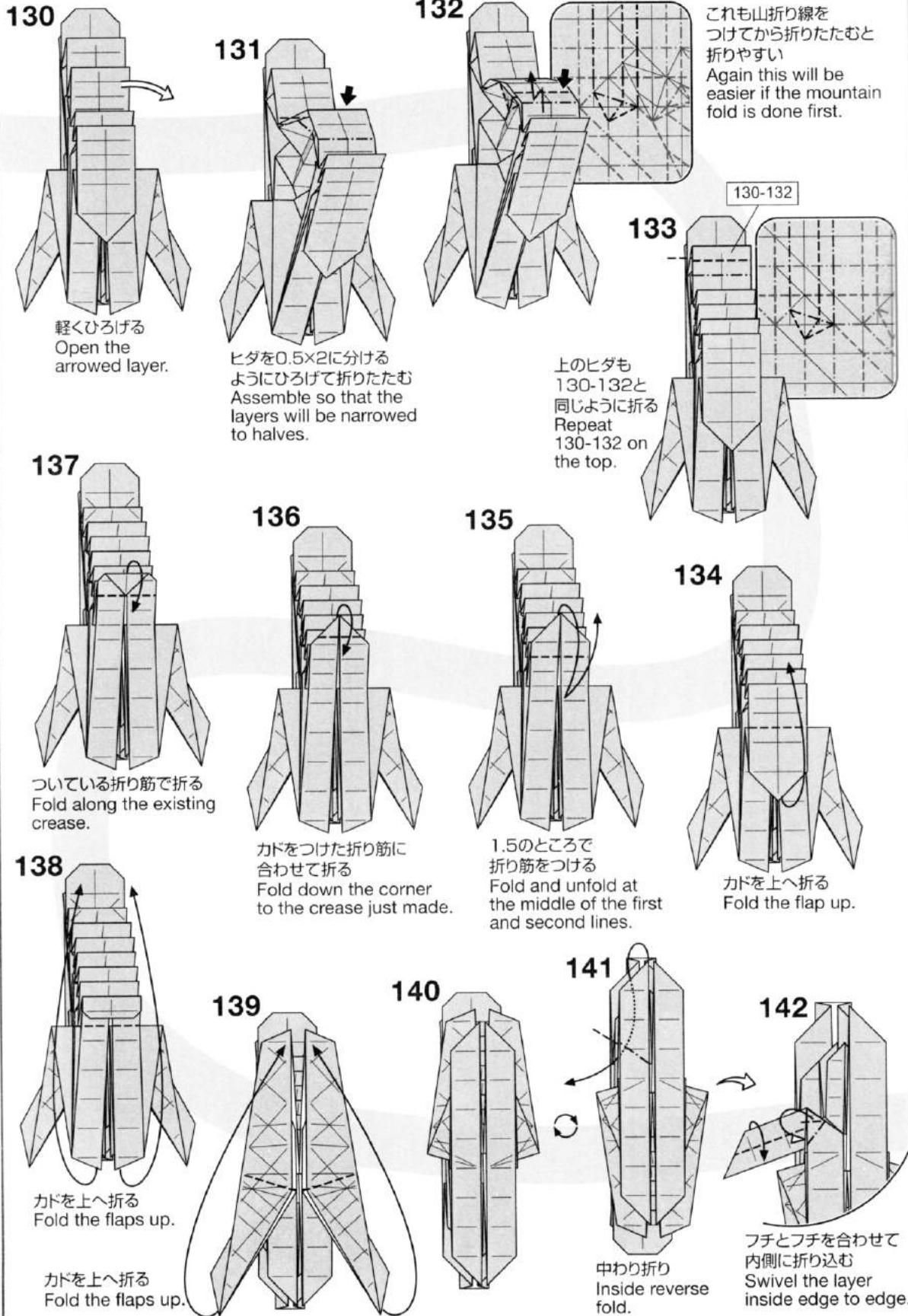


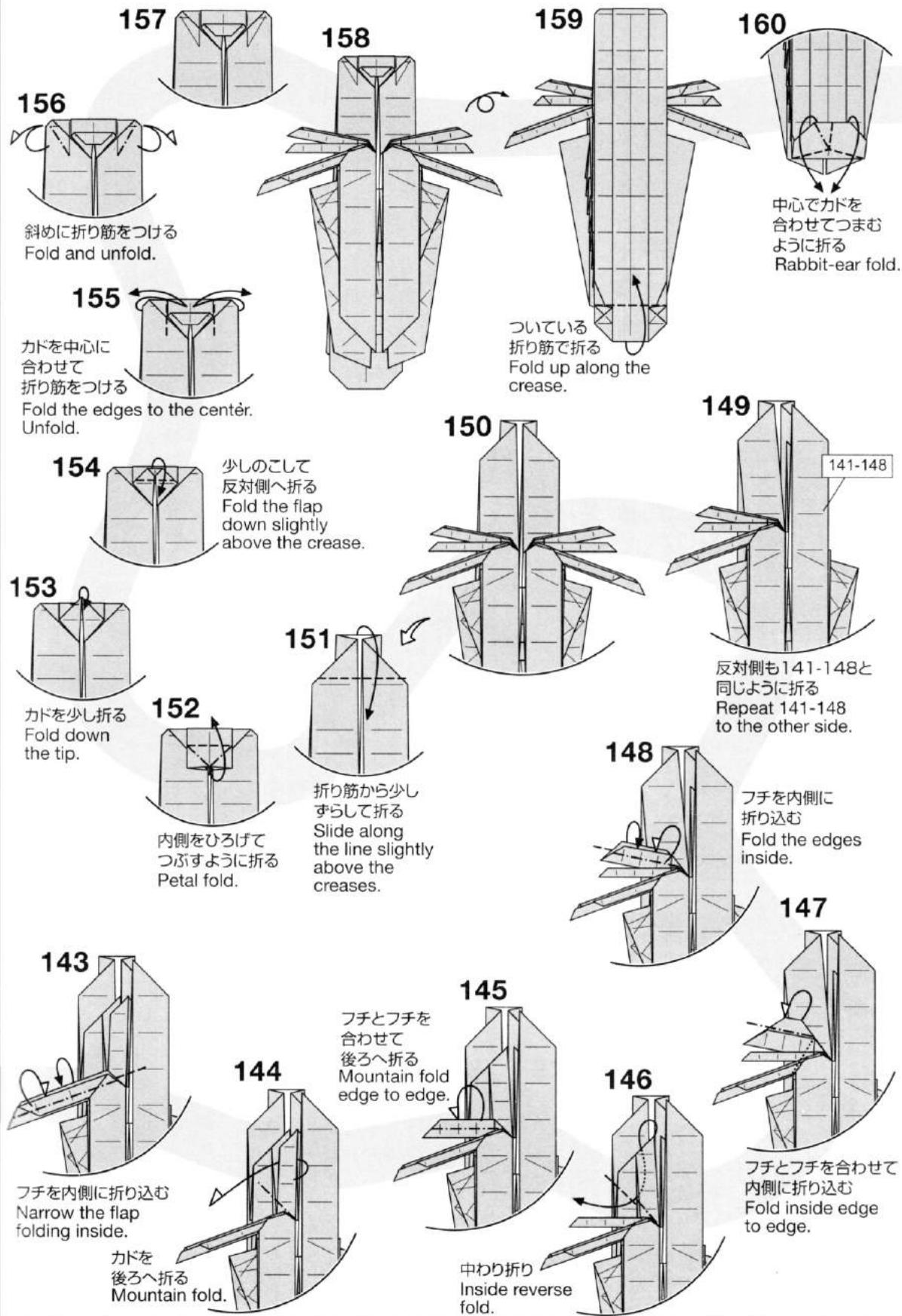
軽くひろげる
Open the layer.



ヒダの位置を0.5マス
上へずらすように折りたたむ
Assemble so that the layer
will be half grid width up.

トンボ





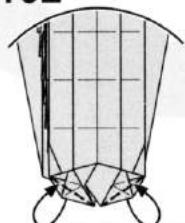
トンボ

161



中わり折り
Inside reverse fold.

162



カドを結ぶ線で折る
Fold along the lines connecting the corners.

163

半分に折る
Fold the model in half.

164

前翅から先をずらすように
両側で段折り
Crimp the body.

165

171

カドを前へ折る
Fold the flap up.

170

脚のカドをそれぞれ
つまむように折る
Narrow the legs.

166

かぶせるように
両側で段折り
Crimp outside.

172

脚の先を段折り
Pleat on the tip
of the foreleg.

169

カドを
つまむように折る
反対側も同じように
折る
Pinch on the corner.
Repeat behind.

168

ついている折り筋で
すき間へ折り込む
反対側も同じように折る
Crimp and place
the created flap inside.

167

中わり折りするように
内側へ折り込む
反対側も同じように折る
Inside reverse fold.
Repeat on the other
side.

173

他の脚も
171-172と
同じように折る
Repeat 171-172
on the other legs.

176

174

反対側も
170-173と
同じように折る
Repeat 170-173 behind.

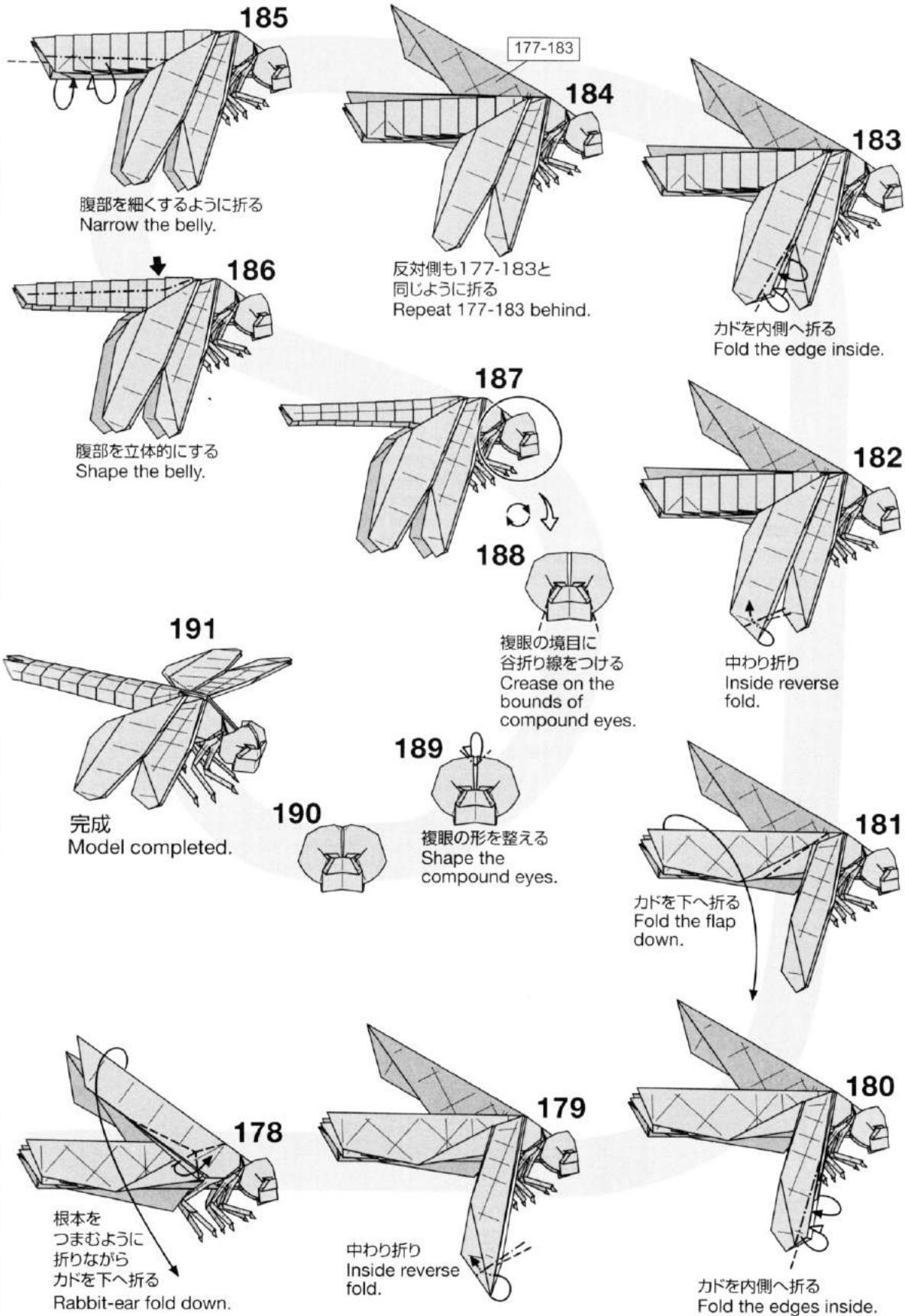
175

脚の後ろの紙を内側へ折る
反対側も同じように折る
Fold the layer
behind the legs to inside.
Repeat behind.

177

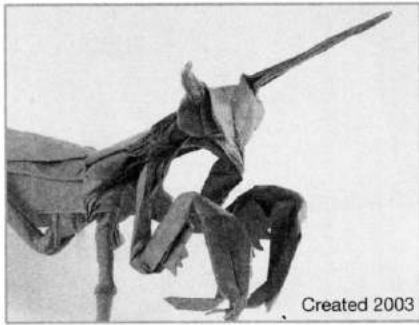
フチを後ろの
すき間へ折り込む
Fold and swivel
the edge inside.

184 神谷哲史折り紙作品集 3



カマキリ

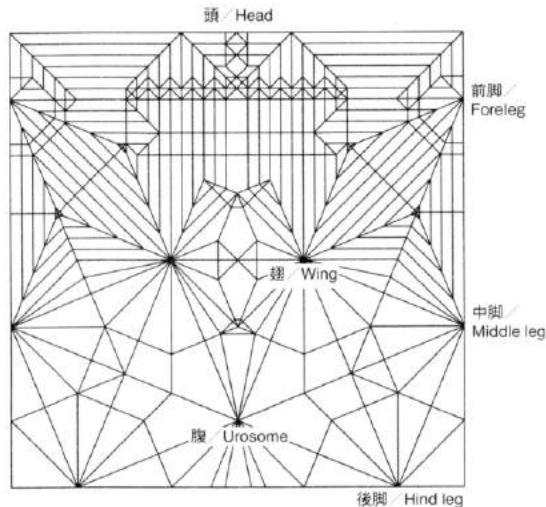
Praying Mantis



力 マキリを創作しようとしたとき、どのようなカド配置や構造が考えられるでしょうか？本作は、まさにこのカド配置と構造のアイディアから生まれた作品です。

正攻法であれば、いわゆる4ツルの比率を崩して、ヒダなどを追加して調整する方法なのですが、少々効率が悪くなるし、なにより面白くありません。どうしたものかと考えていたところ、ふと下の部分のツルの基本形を回転させるというアイディアを思いつきました。カドの長さも問題なさうだし、羽のカドが少し左右に分かれのも良い。なにより構造がシンプルかつ面白い。試作の結果、前脚側の構造も綺麗にまとまり、仕上げに使えそうな余裕も残っています。触角の位置が決めきれない部分は、蛇腹状の構造を採用して調整することにしました。結果的に、頭のくびれも蛇腹を利用して折り出すことができました。

基本構造というのは外側からは見えませんが、折り紙作品において重要な要素です。合理的で無理のない構造は、折りやすさや説明しやすさに直結します。ただ、完成した形だけを考えるのであれば、実は必要条件さえ満たせば、ありきたりで安易な構造であっても、なんの問題ありません。それでもそこに目新しさや面白さを求めてしまうのは、良くも悪くも創作者としての性なのでしょうか。

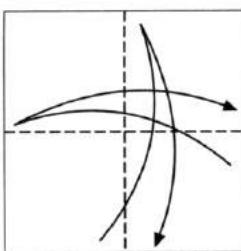


What sort of structure do you think is optimal for designing a mantis? How would you distribute necessary flaps for it? This is what I had in mind when I designed this mantis model.

The most straightforward method would be a structure with four bird bases with added areas by altering the proportions of the bases, but this method is not a very efficient one with nothing innovative. It turned out that I came up with the idea of rotating the lower bases a little. By doing this, flaps for wings will effectively orient towards sides of the model while keeping enough length. In addition, the newly designed structure is not only very intriguing but is very simple. When I tried designing earlier versions of this model, I found the optimal structure for the forelegs with some room for shaping. Pleated structures are used for the antennae. Pleats turned out to be useful for expressing the curved structure behind the head.

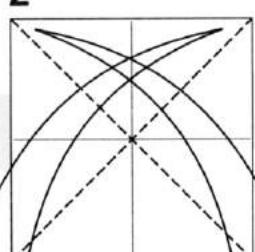
Bases do not show up in the completed model, but this is one of the critical factors for designing an origami model. Logical and effective structures give us a model with ease of folding and description. If you only consider the shape of the model that comes out, you do not have to think about the structure. As a designer/creator of an origami model, I cannot help pursuing innovation in it.

1



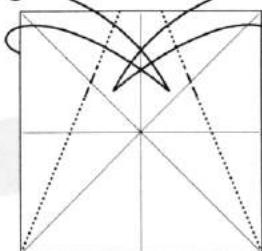
半分に折り筋をつける
Fold in halves and unfold.

2



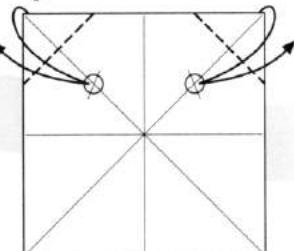
三角に
折り筋をつける
Fold and unfold.

3



チフチを折り筋に合わせて
印をつける
Fold the edges
to the creases,
but only mark at the crosses.
Unfold.

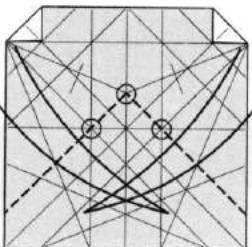
4



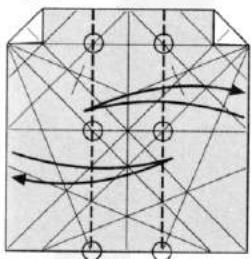
カドを○に合わせて
折り筋をつける
Fold the corners
to the circled points
and unfold.

15

○を結ぶ線で
折り筋をつける
Crease along the
line connecting
the circled points.

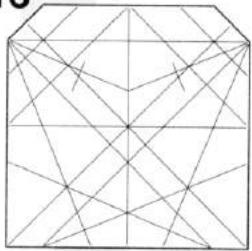


14

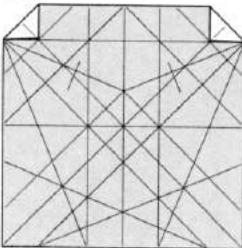


○を結ぶ線で
折り筋をつける
Crease along the
lines connecting
the circled points.

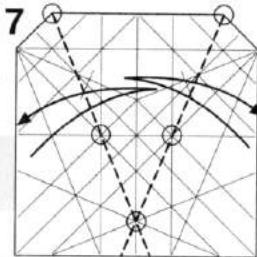
13



16

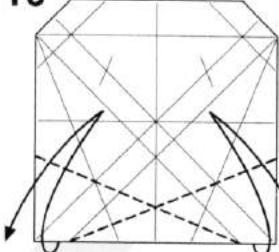


17



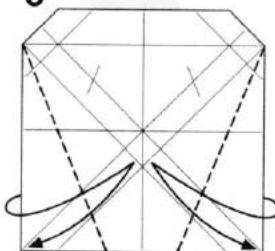
○を結ぶ線で折り筋をつける
Crease along the line
connecting the circled
points.

10



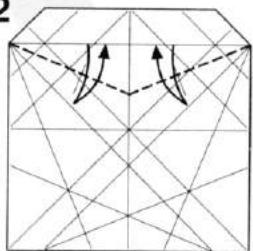
フチを折り筋に
合わせて折り筋を
つける
Fold the edges
to the creases
and unfold.

9

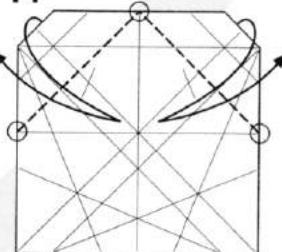


フチを折り筋に合わせて
折り筋をつける
Fold the edges to the
creases and unfold.

12



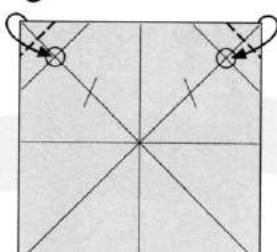
11



○を結ぶ線で折り筋をつける
Crease along the line
connecting the circled
points.

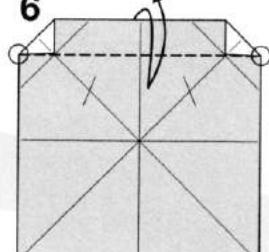
半分の角度で折り筋をつける
Fold and unfold at angle
bisectors.

5



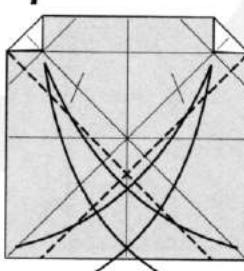
カドを○に合わせて折る
Fold the corners to
the circled points.

6



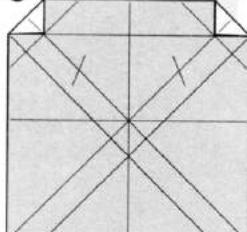
カドを結ぶ線で折り筋を
つける
Fold and unfold along
the line connecting the
corners.

7



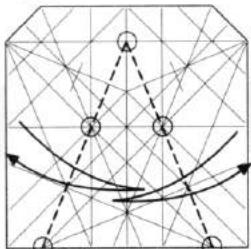
フチを折り筋に
合わせて折り筋を
つける
Fold the edges to the
creases and unfold.

8



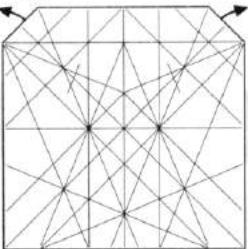
カマキリ

18



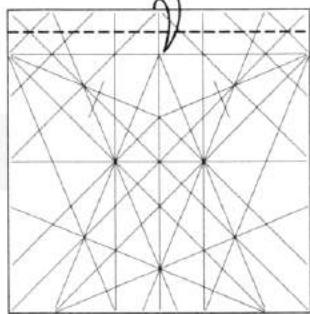
○を結ぶ線で折り筋をつける
Crease along the line connecting the circled points.

19



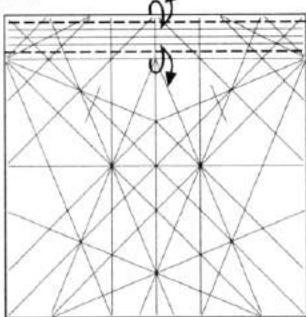
折ってあるカドを戻す
Unfold the corners.

20



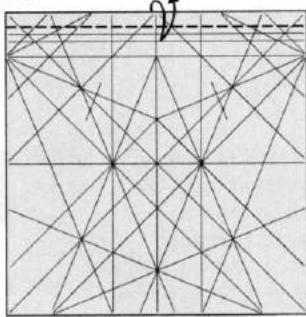
フチを折り筋に合わせて
折り筋をつける
Fold the edge to the crease and unfold.

24



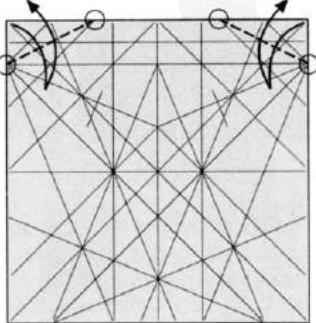
半分の幅で折り筋をつける
Crease at the half of the widths.

23



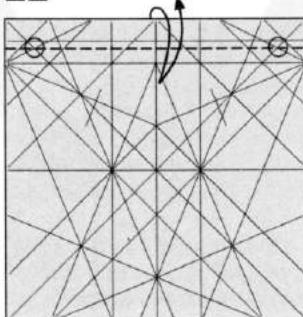
フチを折り筋に合わせて
折り筋をつける
Fold the edge to the crease and unfold.

21



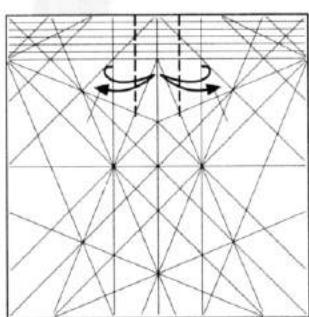
○を結ぶ線で折り筋をつける
Crease along the line connecting the circled points.

22



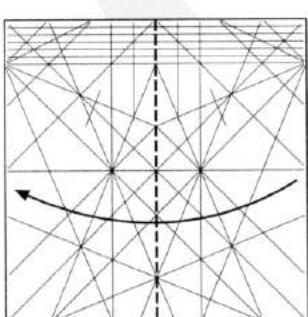
○を結ぶ線で
折り筋をつける
Crease along the line connecting the circled points.

25



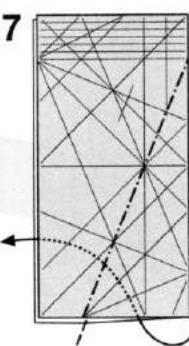
半分の幅で折り筋をつける
Crease at the half of the widths.

26



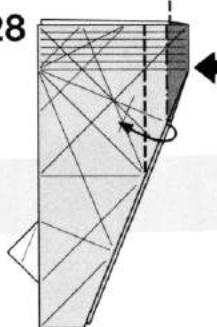
半分に折る
Fold in half.

27



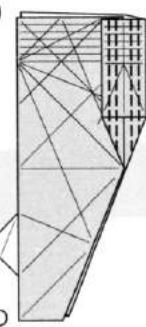
中わり折り
Inside reverse fold.

28

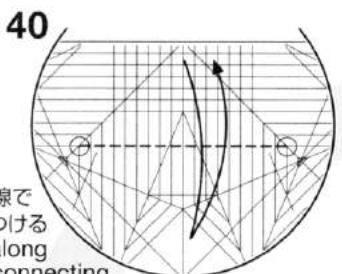


フチをひろげて
つぶすように折る
Open and squash.

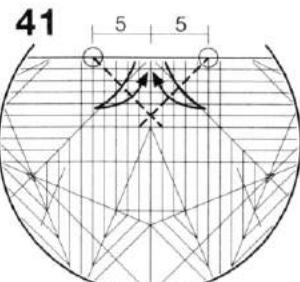
29



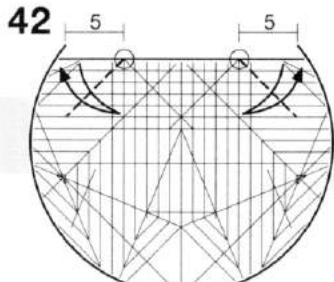
1/3の
幅で折り筋をつける
Crease dividing into thirds.



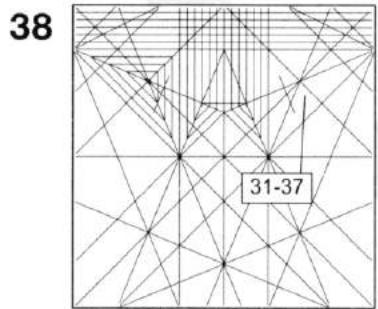
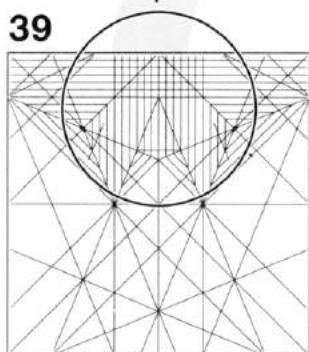
○を結ぶ線で
折り筋をつける
Crease along
the line connecting
the circled points.



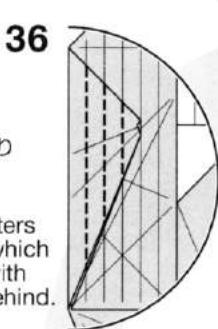
図のように折り筋をつける
Fold and unfold as shown.



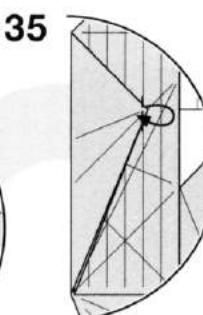
図のように折り筋をつける
Fold and unfold as shown.



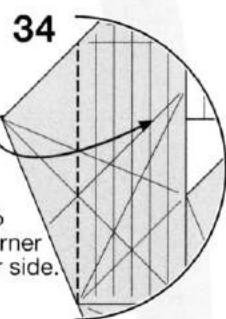
反対側も31-37と
同じように折り筋をつける
Repeat 31-37
on the other side.



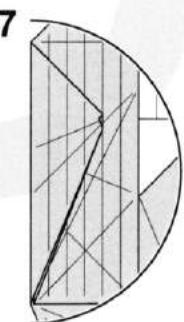
1/4の幅で段折り
(後ろの折り筋と
同じ幅になる)
Fold into quarters
of the width, which
should align with
the creases behind.



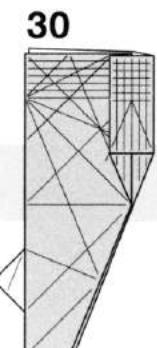
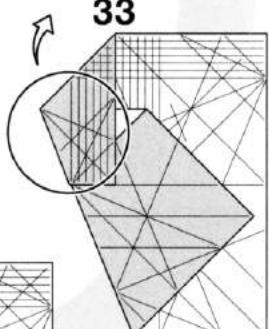
カドの先を
後ろの折り筋の
ところで折る
Fold the tip
along the
crease behind.



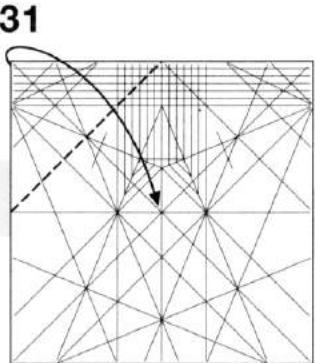
カドを
反対側へ折る
Fold the corner
to the other side.



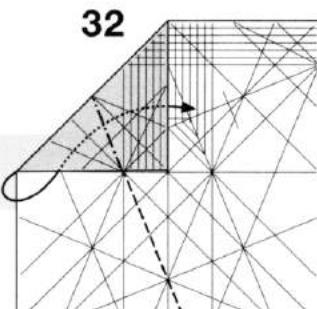
全てひろげる
Unfold.



全てひろげる
Unfold.

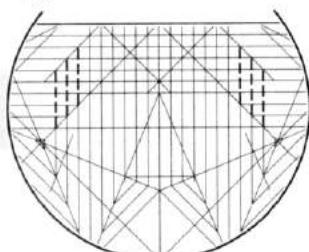


カドを中心へ合わせて折る
Fold the corner to the center.



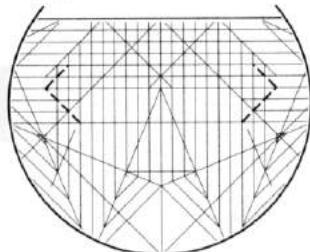
中わり折り
Inside reverse fold.

43



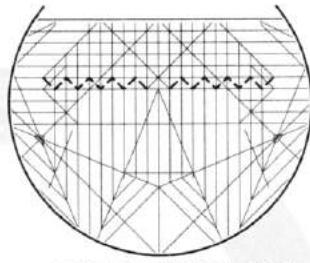
図のように折り筋をつける
Crease as shown.

44



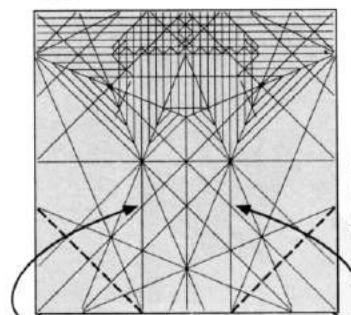
図のように折り筋をつける
Crease as shown.

45



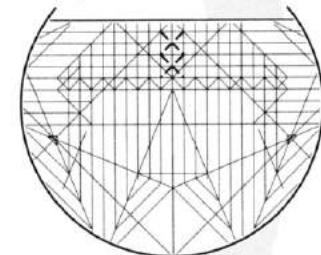
図のように折り筋をつける
Crease as shown.

46



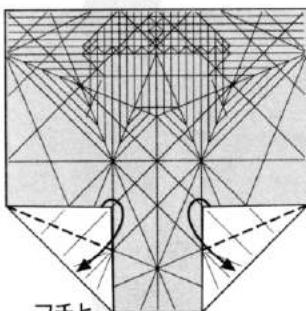
カドを折り筋に
合わせて折る
Fold the corners to the creases.

47



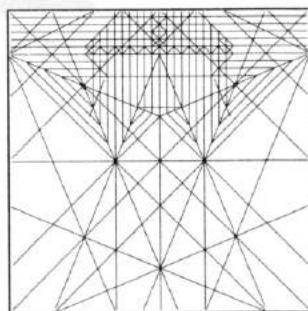
図のように折り筋をつける
Crease as shown.

50

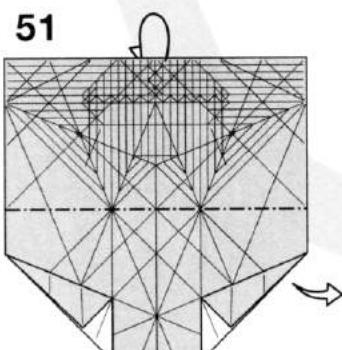


フチと
フチを合わせて折る
Fold edge to edge.

48

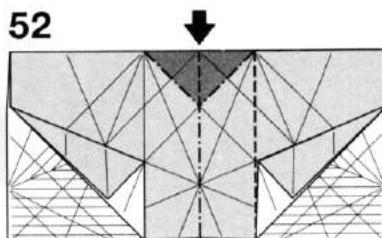


51



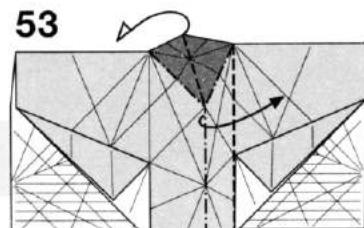
後ろへ半分に折る
Fold in half behind.

52



中央をつぶしながら両側にヒダを
作るように折る
Push the top part and make
pleats on both sides.

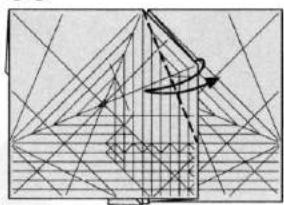
53



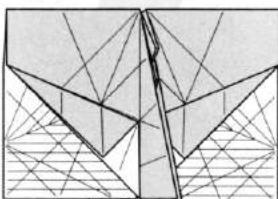
途中の図 I
平らに折りたたむ
In progress...
Flatten the model.

65

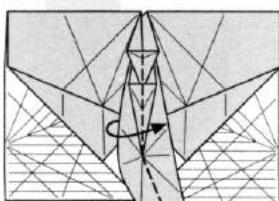
フチを中心
に合わせて
折り筋をつける
Fold the edge to
the crease.
Unfold.



64

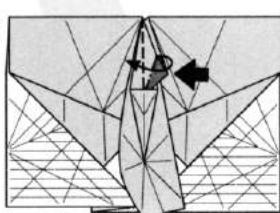


63



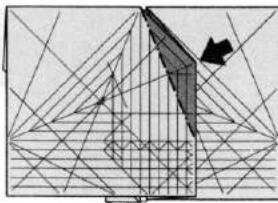
閉じるよう
に折る
Fold the layers
to the other side.

62



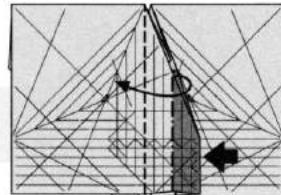
■の部分をひろげ
つぶすように折る
Spread sink the
darkened area.

66



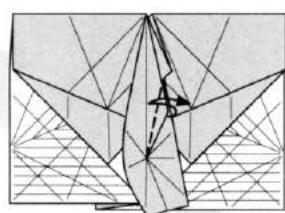
沈め折り(Open sink)
Open sink.

67



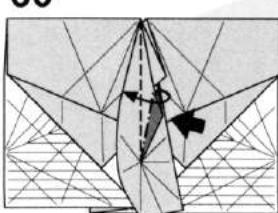
フチをひろげて
つぶすように折る
Open and squash.

59



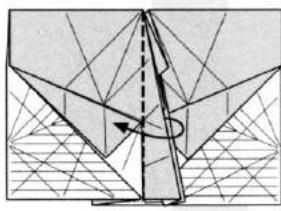
半分の角度で
折り筋をつける
Fold and unfold at an angle
bisector.

60



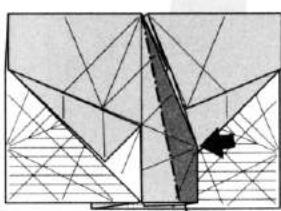
■の部分をひろげ
つぶすように折る
Spread sink the
darkened area.

58



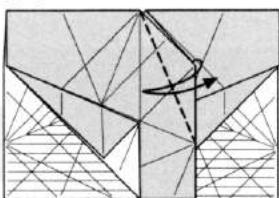
手前の1枚を反対側へ折って
内側を見る
Fold one layer to the
other side.

57



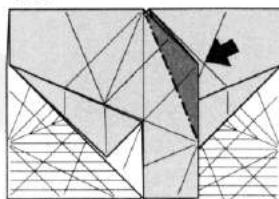
沈め折り(Open sink)
Open sink.

54



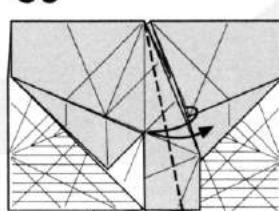
フチを中心
に合わせて
折り筋をつける
Fold the edge to
the crease.
Unfold.

55



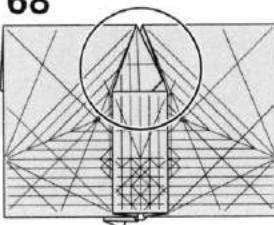
沈め折り(Open sink)
Open sink.

56

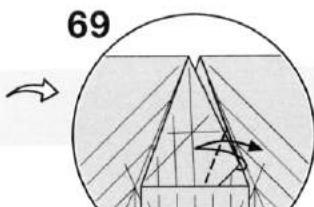


フチを中心
に合わせて
折り筋をつける
Fold the edge to
the crease.
Unfold.

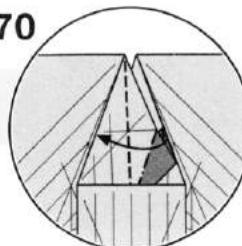
68



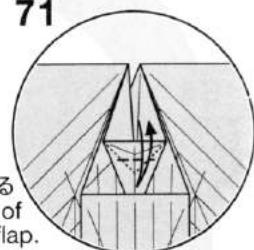
69



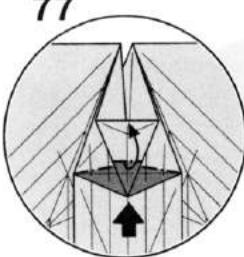
70



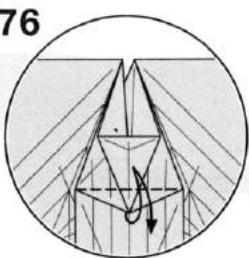
71



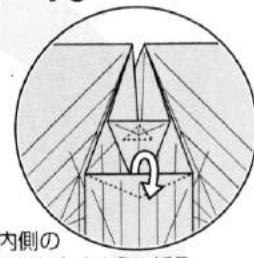
77



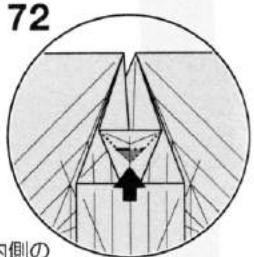
76



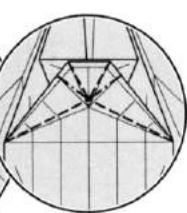
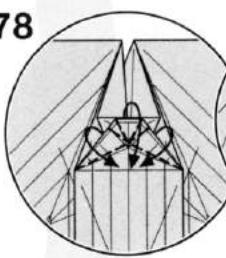
75



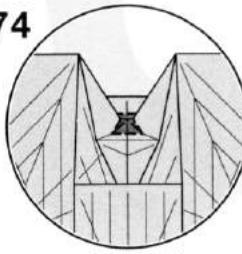
72



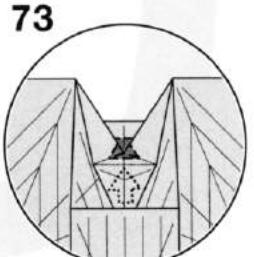
78



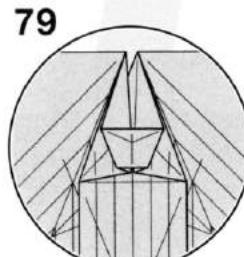
74



73



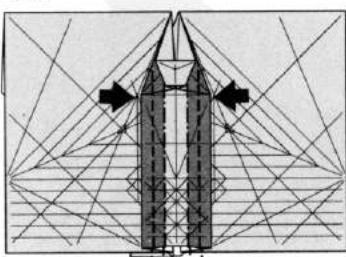
79



それぞれ戻すように
折りたたむ
Fold the edges
and the raised
layers down.

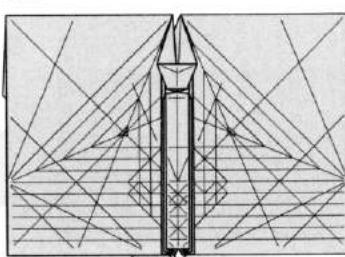
途中の図
In progress...

80

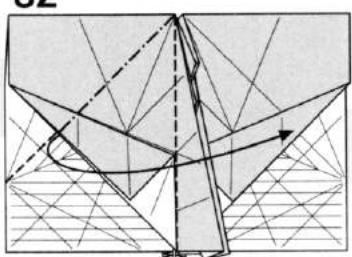


沈め折り(Closed sink)
Closed sink in and out.

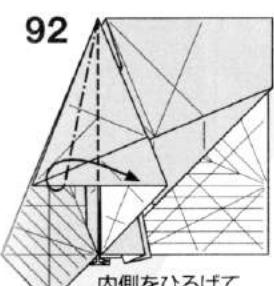
81



82

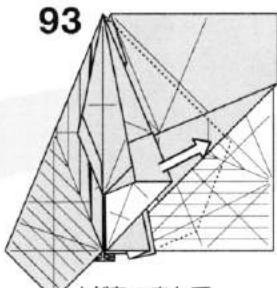


内側をひろげてつぶすように折る
Open and squash.



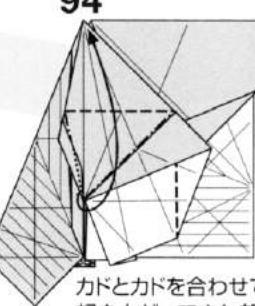
92

内側をひろげて
つぶすように折る
Open and squash.



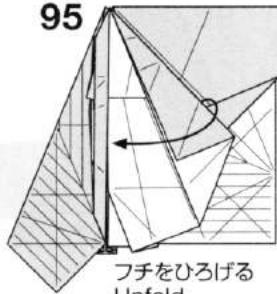
93

カドをつまんで
引き出す
Pull out the layer.



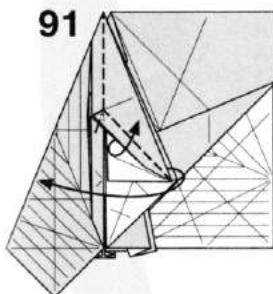
94

カドとカドを合わせて
起き上がってきた部分を
つぶすように折る
Fold corner to corner
and squash.



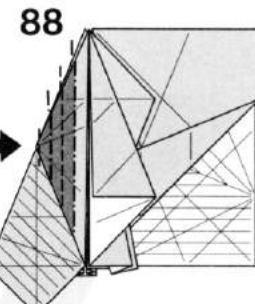
95

フチをひろげる
Unfold.



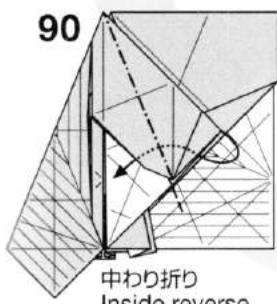
91

フチを折りながら
カドを反対側へ折る
Fold the layer to
the other side
while folding the
edges up.



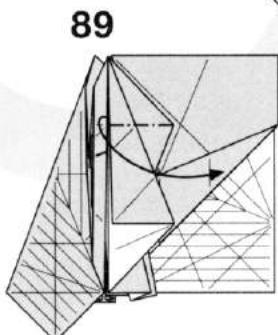
88

沈め折り
(Open sink)
Open sink
in and out.



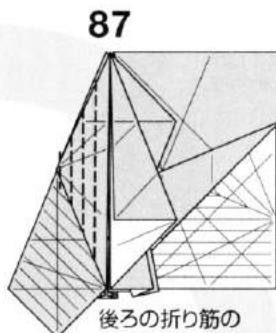
90

中わり折り
Inside reverse
fold.



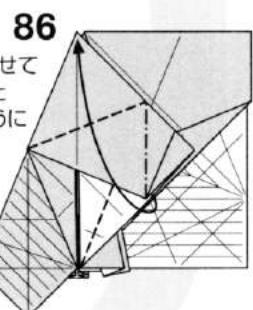
89

86で折った部分を
戻すように折る
Unfold the layer
folded at 86.



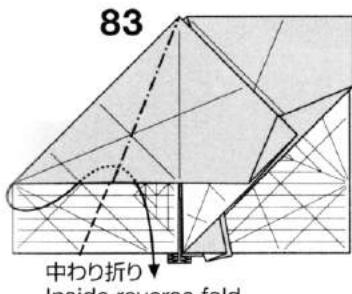
87

後ろの折り筋の
幅に合わせて
折り筋をつける
Crease along the
crease lines behind.



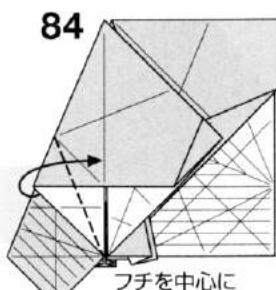
86

カドとカドを合わせて
起き上がってきた
部分をつぶすように
折る
Fold corner to
corner and
squash.



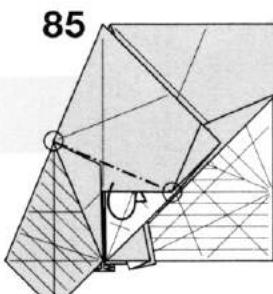
83

中わり折り
Inside reverse fold.



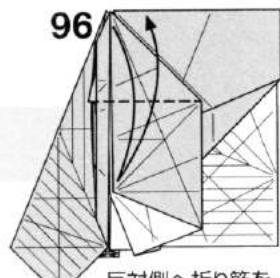
84

フチを中心には
わせて折る
Fold the edge
to the crease.

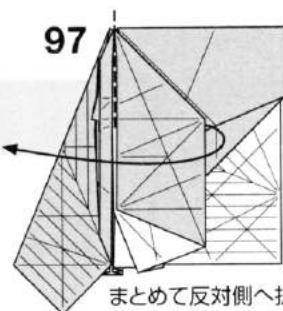


85

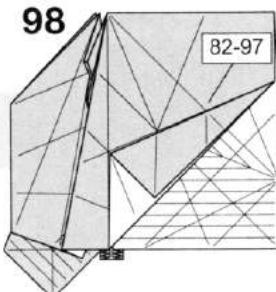
カドを結ぶ線で
後ろへ折り込む
Fold the edge
inside along the
line connecting
the circled points.



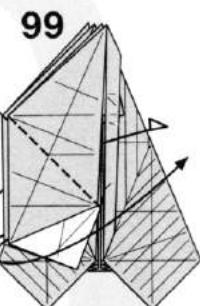
反対側へ折り筋をつける
Fold the flap to the other side and unfold.



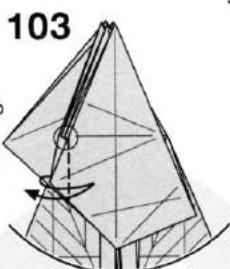
まとめて反対側へ折る
Fold the layers to the other side.



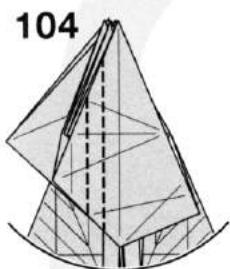
反対側も82-97と同じように折る
Repeat 82-97 on the other side.



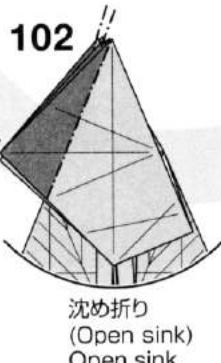
かぶせ折り
Outside reverse fold.



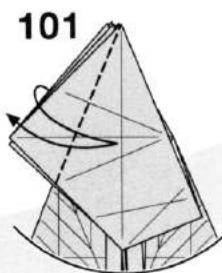
○のところで折り筋をつける
Fold at the circled point and unfold.



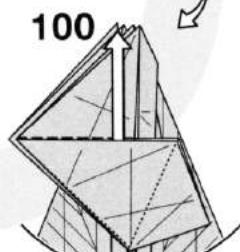
1/3の幅で折り筋をつける
Crease dividing the width into thirds.



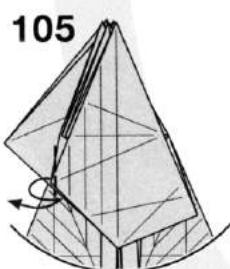
沈め折り
(Open sink)
Open sink.



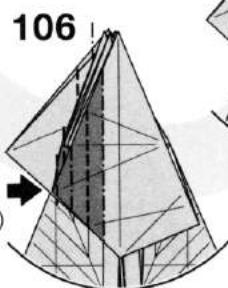
フチを中心に合わせて
折り筋をつける
Fold the edge to the center line.
Unfold.



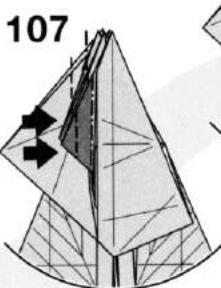
内側の力を引き出す
Pull out the hidden corner.



同じ幅で折り筋をつける
Fold and unfold at the same width.



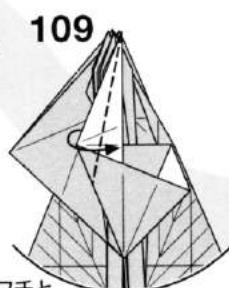
沈め折り
(Open sink)
Open sink in and out.



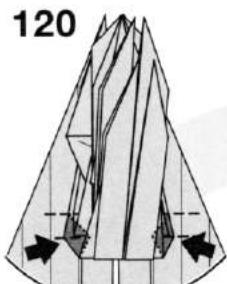
沈め折り
(Open sink)
Open sink in and out.



ずらすように
反対側へ折る
Open and swivel the layer.



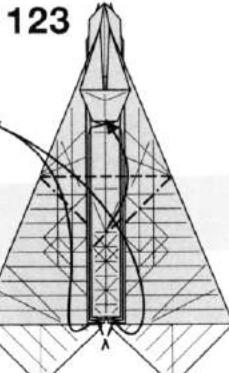
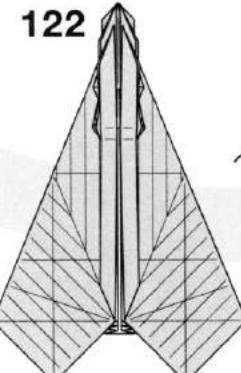
フチと
フチを合わせて折る
Fold edge to edge.



両側の部分をつぶす
ようにして折る
Push in and
squash the layers.



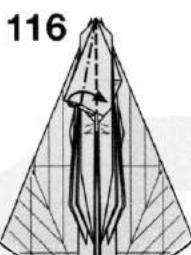
平らに折りたたむ
Flatten the model.



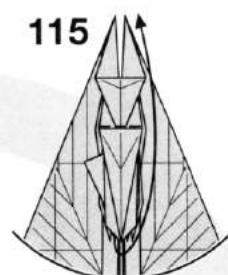
ついている折り筋で
中心をつまむように折る
Fold at the creases.
This is a kind of
rabbit-ear fold.



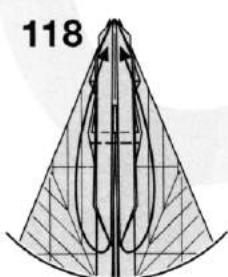
カドをつまんで
すらすように折る
Pull out the flaps.



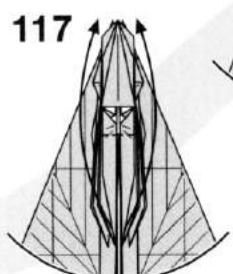
内側をひろげて
つぶすように折る
Open and squash.



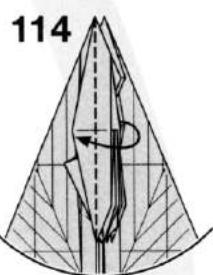
カドを上へ折る
Fold the flap up.



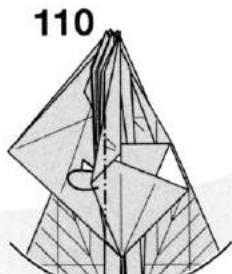
カドを上へ折る
Fold the flaps up.



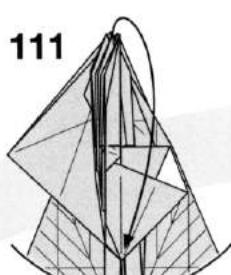
カドを上へ折る
Fold the flaps up.



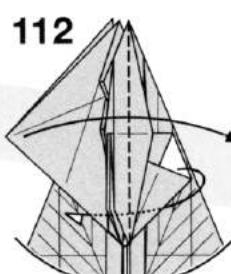
中心のすき間を
開くように折る
Fold the layers
to the other side.



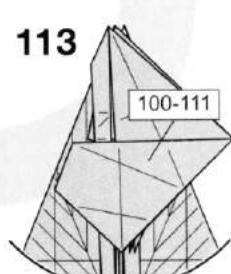
カドを後ろの
すき間へ折り込む
Fold the corner
to behind.



2つのカドを下へ折る
Fold the corners
down.

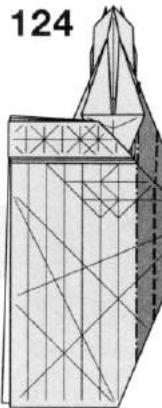


カドをそれぞれ
反対側へ折る
Fold the flaps
to the other side.



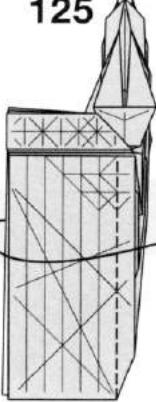
反対側も100-111と
同じように折る
Repeat 100-111
on the other side.

124



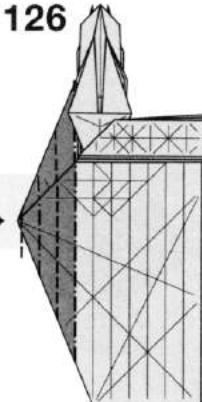
沈め折り(Open sink)
Open sink in and out.

125



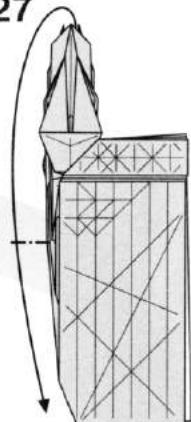
反対側へ折る
Fold the flap
to the other side.

126



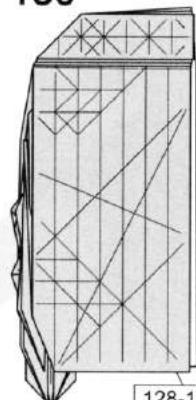
沈め折り(Open sink)
Open sink in and out.

127



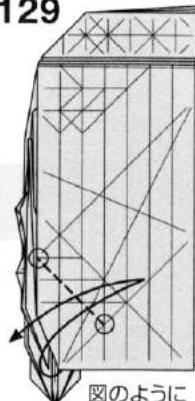
後ろの部分を
下へ折る
Fold to behind.

130



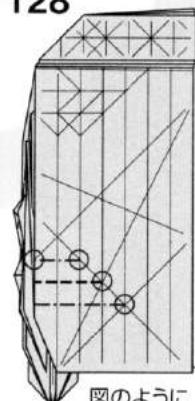
反対側も128-129と
同じように折り筋をつける
Repeat 128-129
on the other side.

129



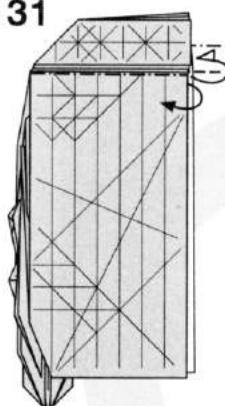
図のように
折り筋をつける
Fold and unfold
as shown.

128



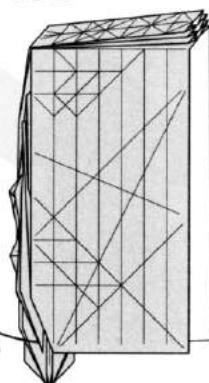
図のように
折り筋をつける
Crease as shown.

131



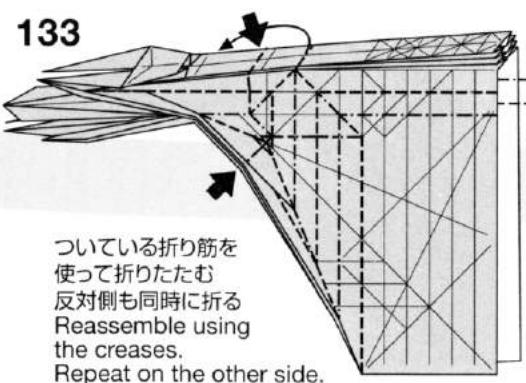
内側をひろげて
立体する
Fold at the creases
and make the model
three dimensional.

132

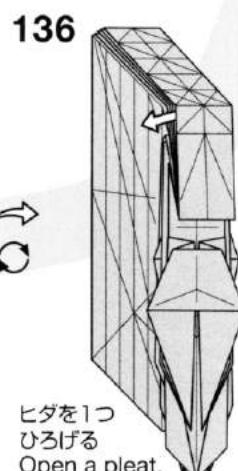
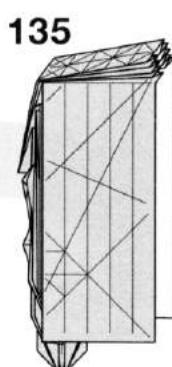
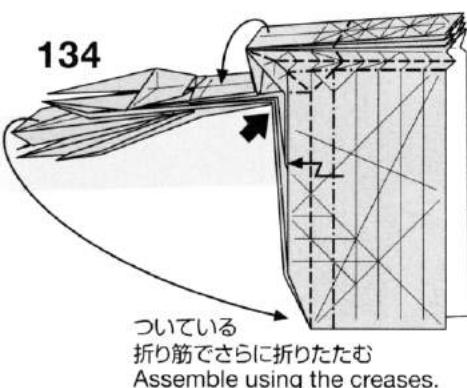
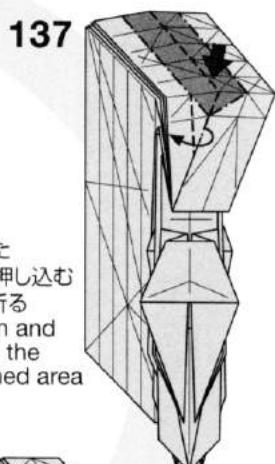
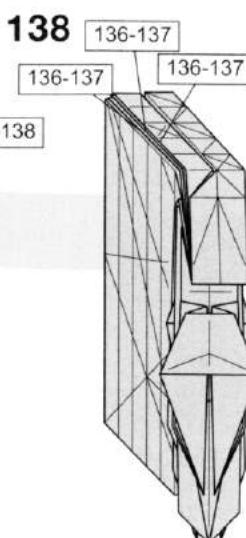
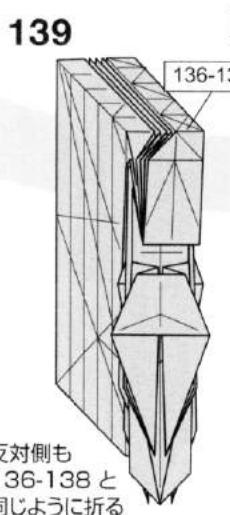
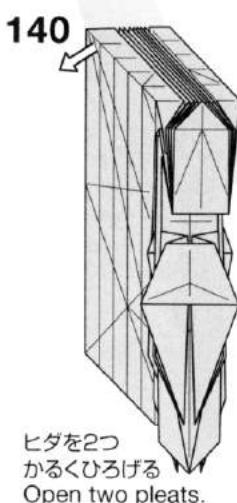
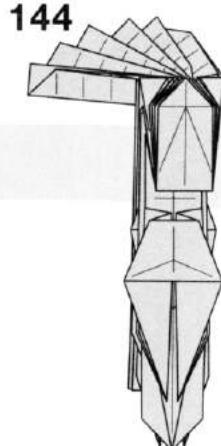
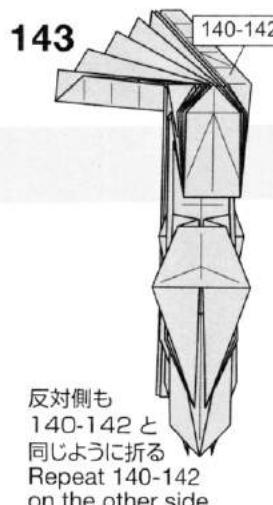
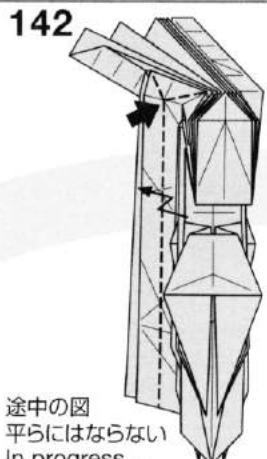
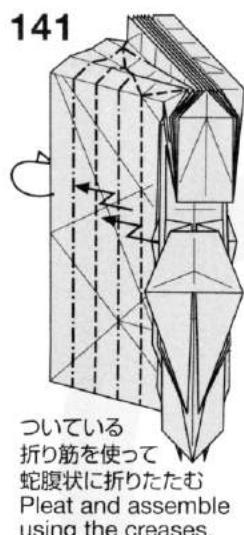


沈め折りした
部分をひろげる
Unfold the "sunken"
layers.

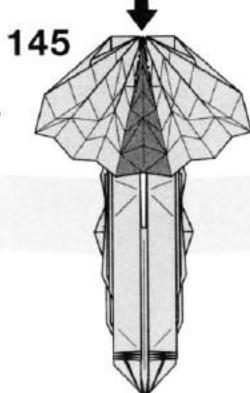
133



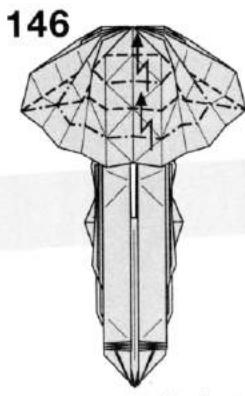
ついている折り筋を
使って折りたたむ
反対側も同時に折る
Reassemble using
the creases.
Repeat on the other side.



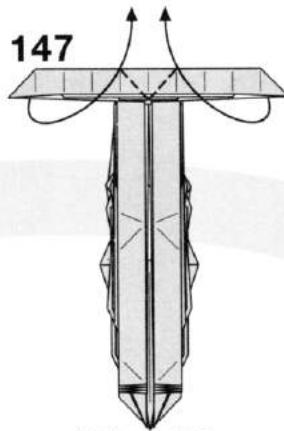
カマキリ



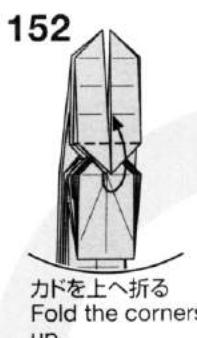
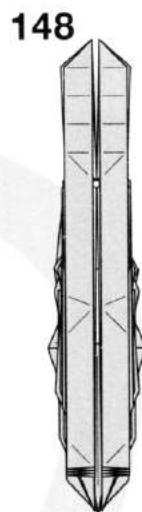
の部分を
平らにするように折る
A series of folds
to make the arrowed
part flat.



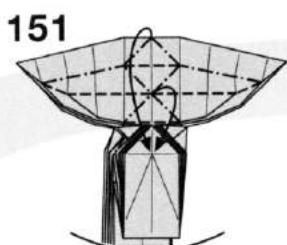
ついている折り筋で
蛇腹上に折りたたむ
Pleat fold and
flatten the model.



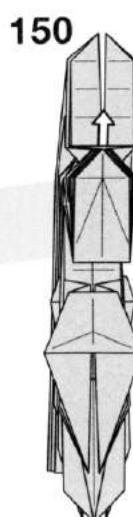
カドを上へ折る
Fold the flaps up.



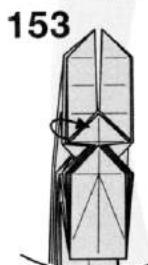
カドを上へ折る
Fold the corners
up.



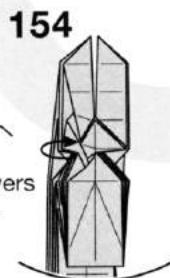
ついている折り筋で
中心にカドを2つ
作るように折りたたむ
Fold the layer so that
two new corners will
be created in the middle.



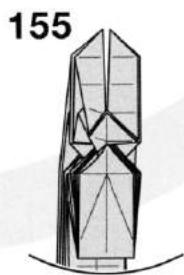
ヒダをひろげる
Open the layer.



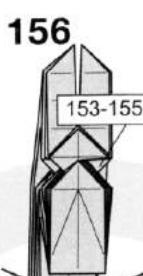
手前の紙を
外すようにして
すき間をひろげる
Release the
front layer.



カドをすき間へ
入れる
Tuck the layers
into the slit.



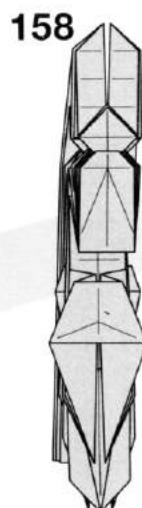
閉じる
Flatten.

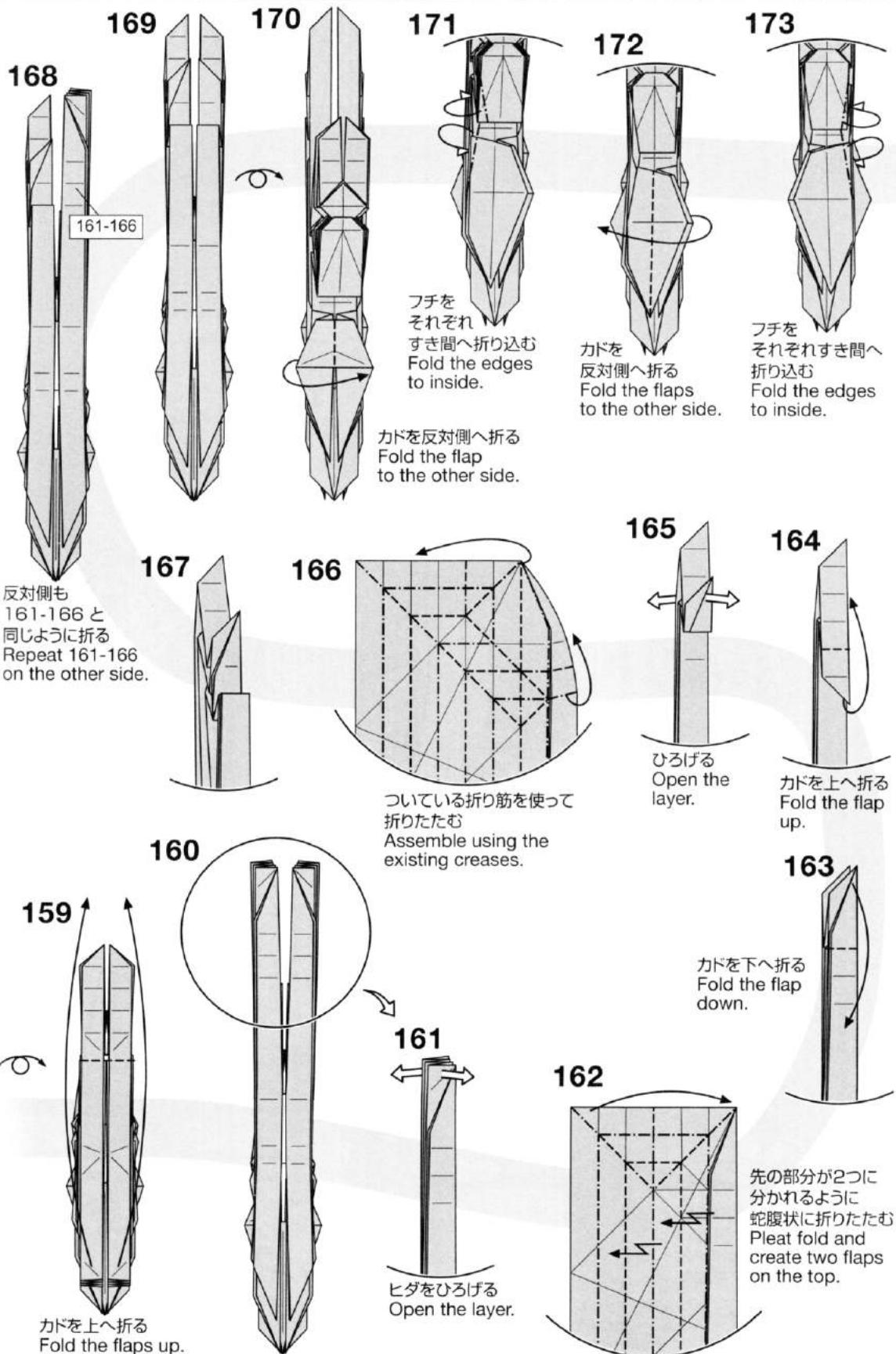


反対側も
153-155と
同じように折る
Repeat 153-155
on the other side.

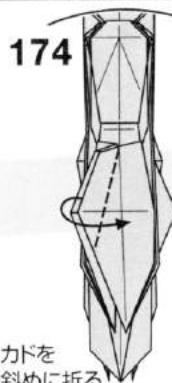


カドを後ろの
すき間へ折り込む
Fold the corner
to behind.

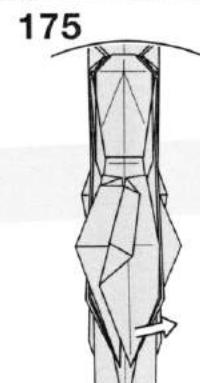




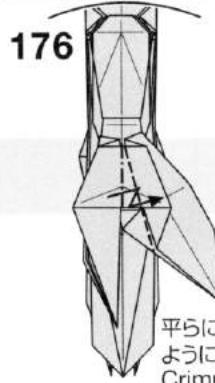
カマキリ



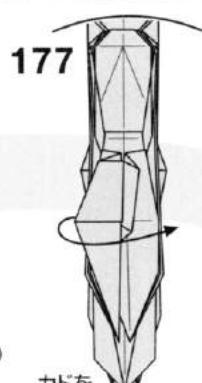
カドを
斜めに折る
Fold one layer
to the other side.



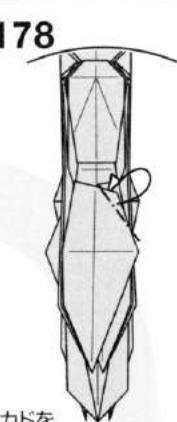
カドを
ずらすように引き出す
Pull out and swivel
the corner.



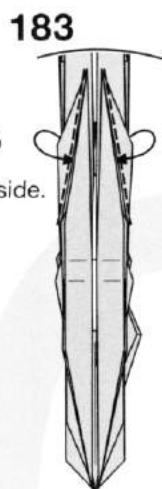
平らになる
ように段折り
Crimp and
flatten.



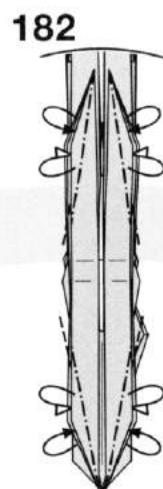
カドを
反対側へ倒す
Unfold the flap.



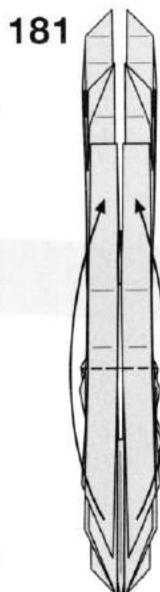
カドを
後ろへ折る
Fold the corner
to behind.



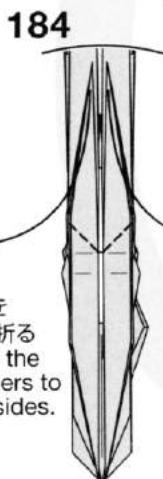
カドを
細くする
ように折る
Fold the
edges inside.



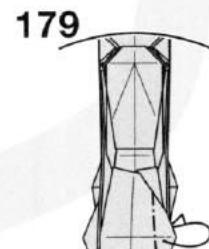
カドを細くする
ように折る
Fold the edges
to inside.



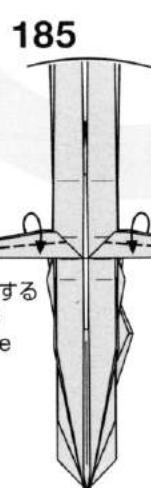
カドを上へ折る
Fold the flaps
up.



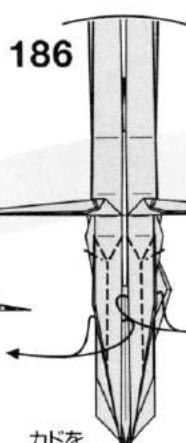
カドを
横へ折る
Fold the
corners to
the sides.



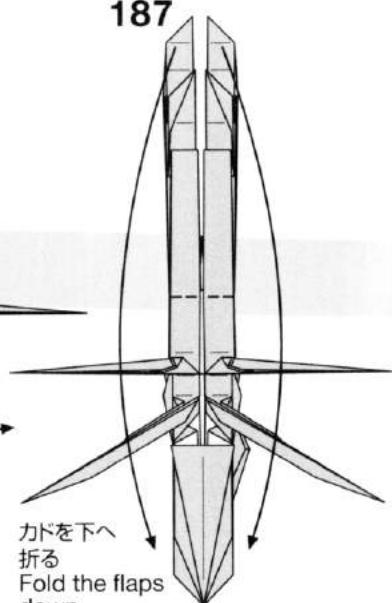
カドを
後ろへ折る
Fold the corner
to behind.



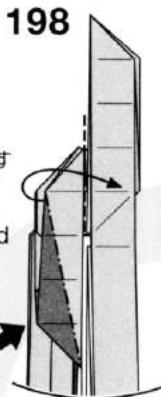
カドを細くする
ように折る
Fold edge
to edge.



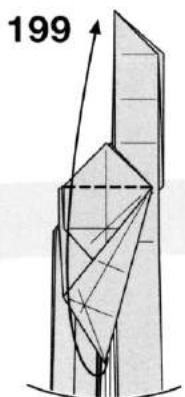
カドを
つまむように折る
Rabbit-ear fold.



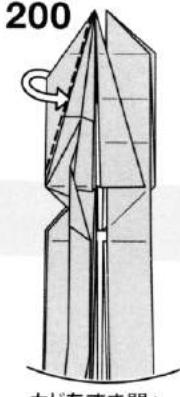
カドを下へ
折る
Fold the flaps
down.



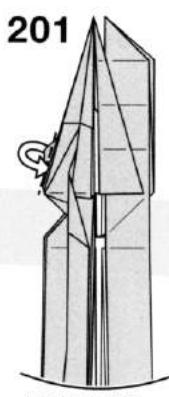
■の部分をひろげてつぶすように折る
Spread sink the darkened area.



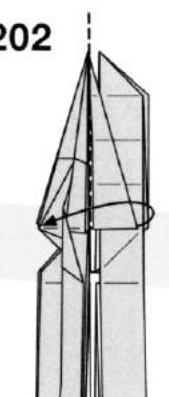
カドを上へ折る
Fold the flap up.



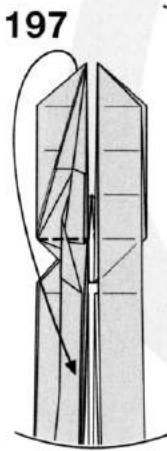
カドをすき間へ折り込む
Fold the corner inside.



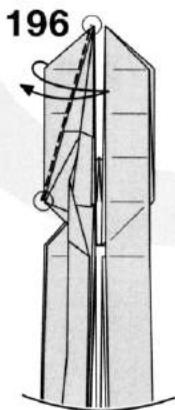
カドをすき間へ折り込む
Fold the corner inside.



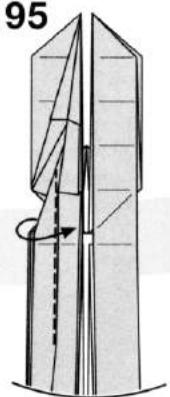
カドを反対側へ折る
Fold the layer to the other side.



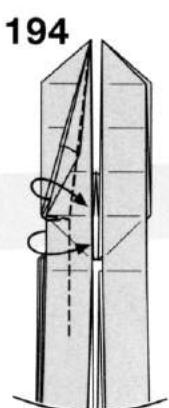
カドを下へ折る
Fold the flap down.



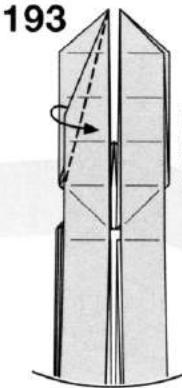
○を結ぶ線で折り筋をつける
Crease along the line connecting the circled points.



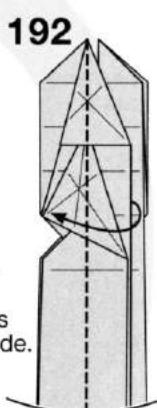
ヒダを中心にはわせて折る
Fold the edge to the center.



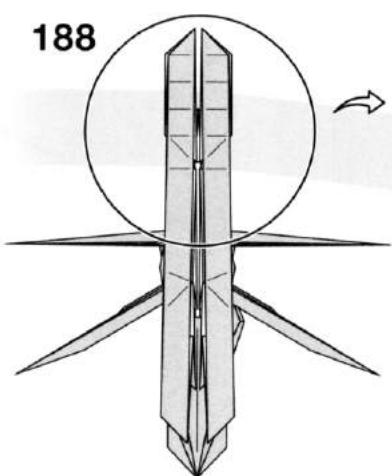
つまむように折る
Fold the layers to the other side pleating in the middle.



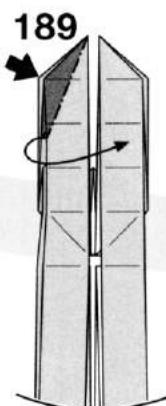
カドを斜めに折る
Fold the layer.



フチを反対側へ折る
Fold the layers to the other side.

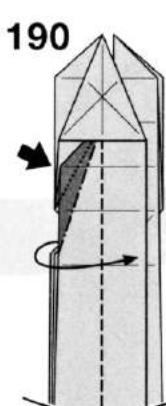


188



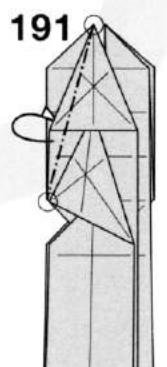
189

■の部分をひろげてつぶすように折る
Spread sink the darkened area.



190

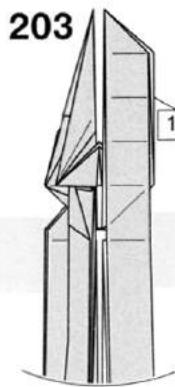
■の部分をひろげてつぶすように折る
Spread sink the darkened area.



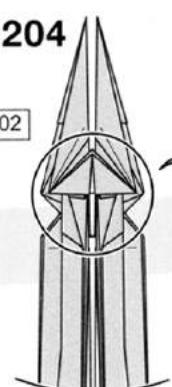
191

カドを後ろへ折り込む
Mountain fold along the line connecting the circled corners.

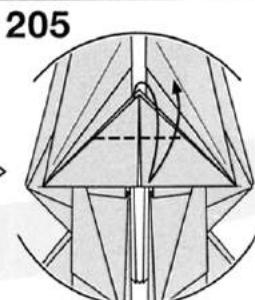
カマキリ



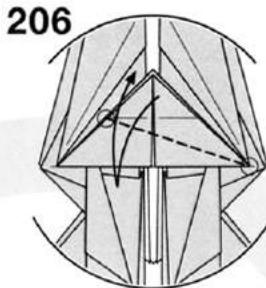
反対側も
189-202と
同じように折る
Repeat 189-202
on the other side.



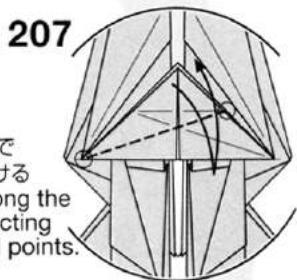
189-202



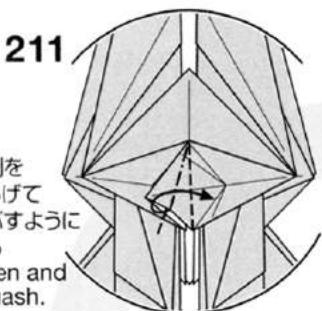
カドをフチに合わせて
折り筋をつける
Fold the corner to
the edge. Unfold.



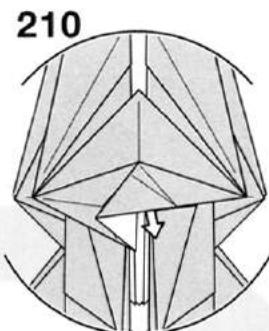
○を結ぶ線で
折り筋をつける
Crease along the
line connecting
the circled points.



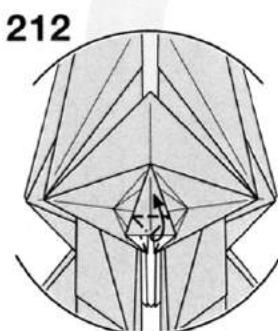
○を結ぶ線で
折り筋をつける
Crease along the
line connecting
the circled points.



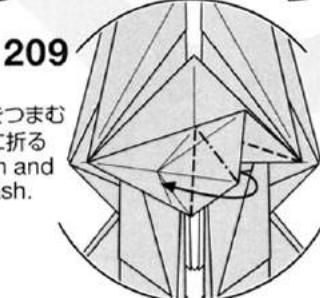
内側を
ひろげて
つぶすように
折る
Open and
squash.



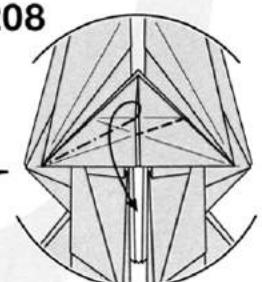
内側の紙を
引き出す
Pull out the
inner layer.



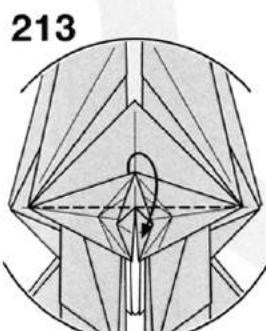
内側をひろげて
つぶすように折る
(花弁折り)
Petal fold.



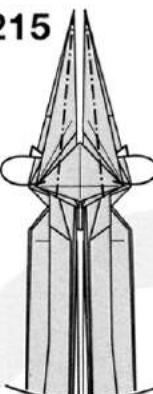
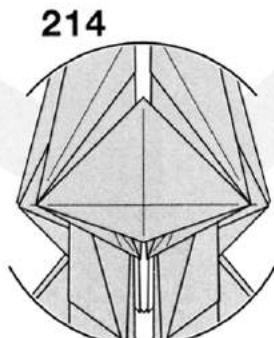
カドをつまむ
ように折る
Open and
squash.



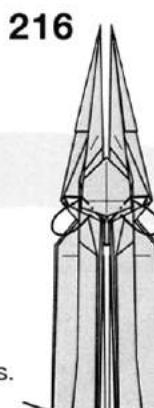
内側をひろげて
つぶすように折る
Open and squash.



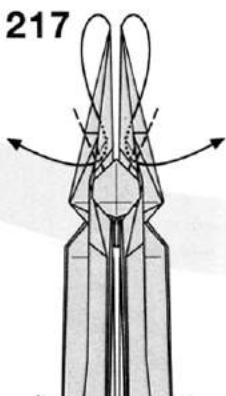
カドを下へ折る
Fold down the
layer.



カドを後ろへ折る
Narrow the flaps.



カドを後ろへ折る
Fold the corners
to behind.



中わり折り
Inside reverse
fold.

225

体を半分に
折るようにして立体にする
Fold in half and
fold the model three
dimensional.

226

かぶせ折り
Outside reverse
fold.

224

起こすように段折り
Pleat and raise
the flap.

222

3番目と4番目のヒダを
ずらすように引き出す
Pull out the third
and fourth layers.

223

反対側も
同じように
引き出す
Repeat on the other side.

221

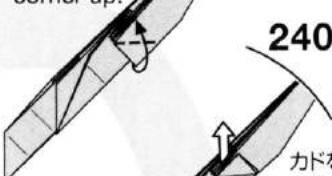
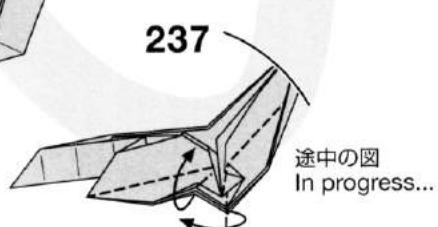
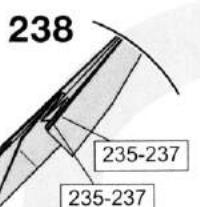
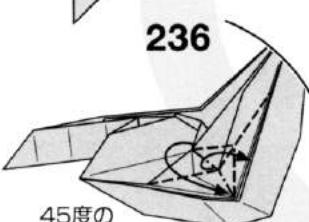
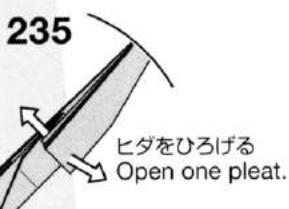
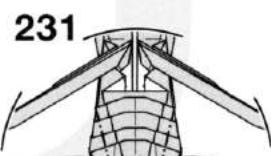
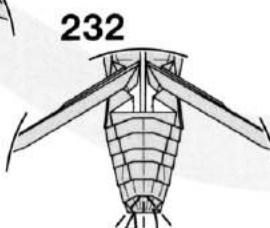
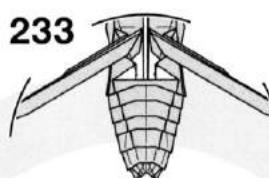
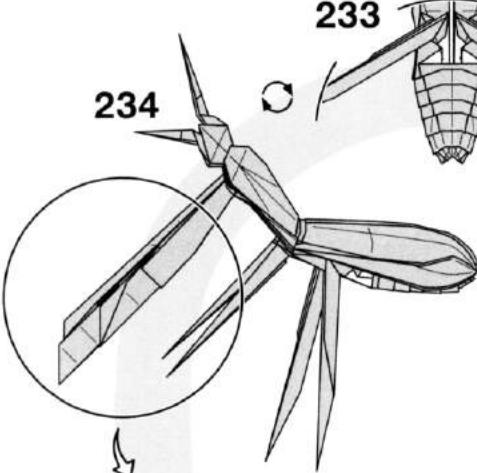
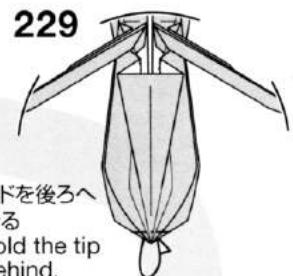
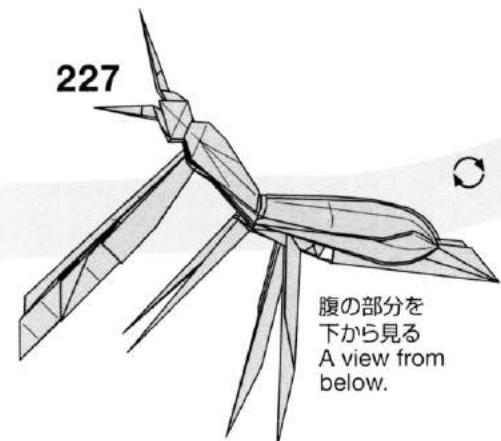
カドの根本の部分を
つまむように折る
Rabbit-ear fold the
flaps.

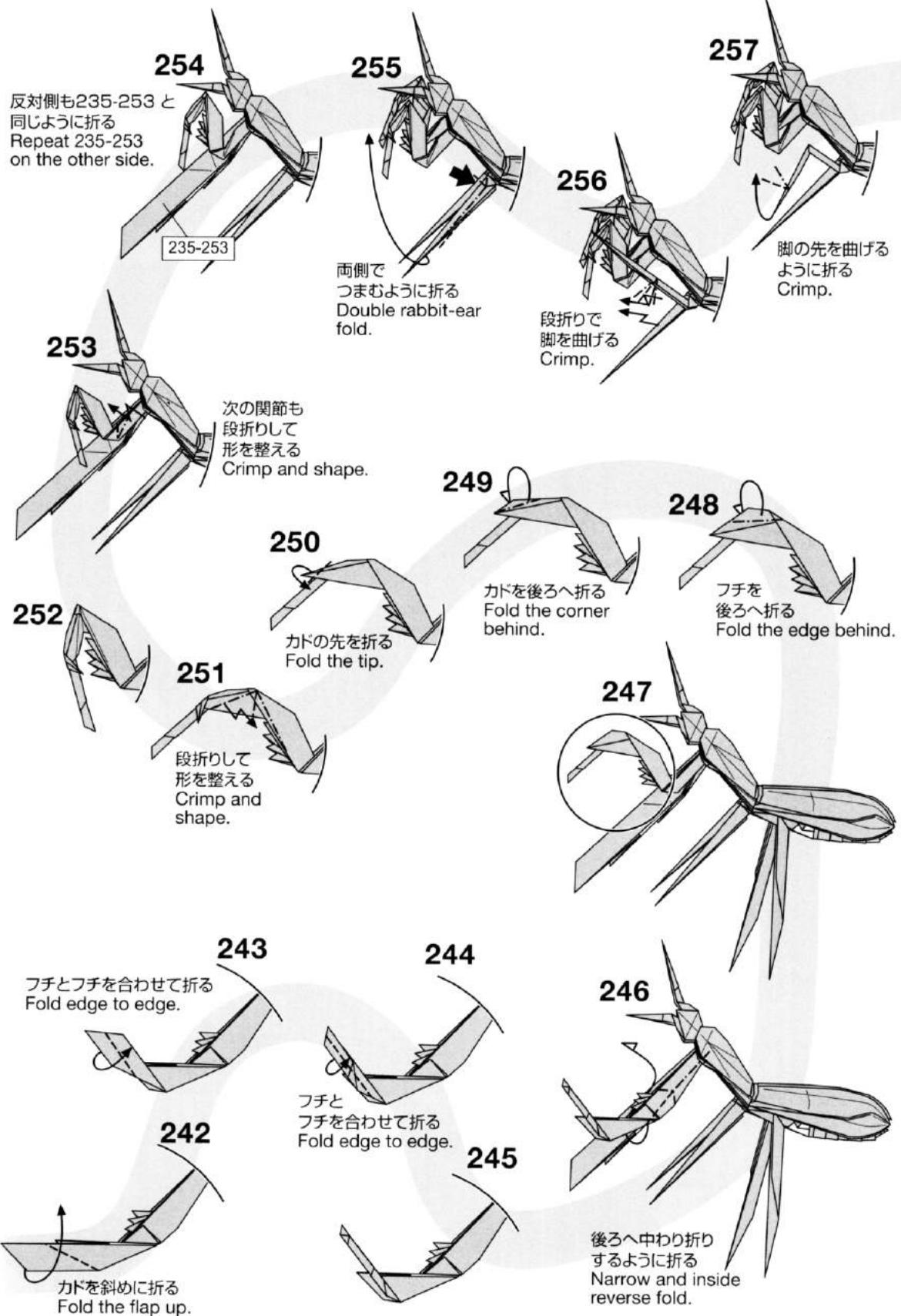
218

カドを細くする
ように折る
Narrow the flaps.

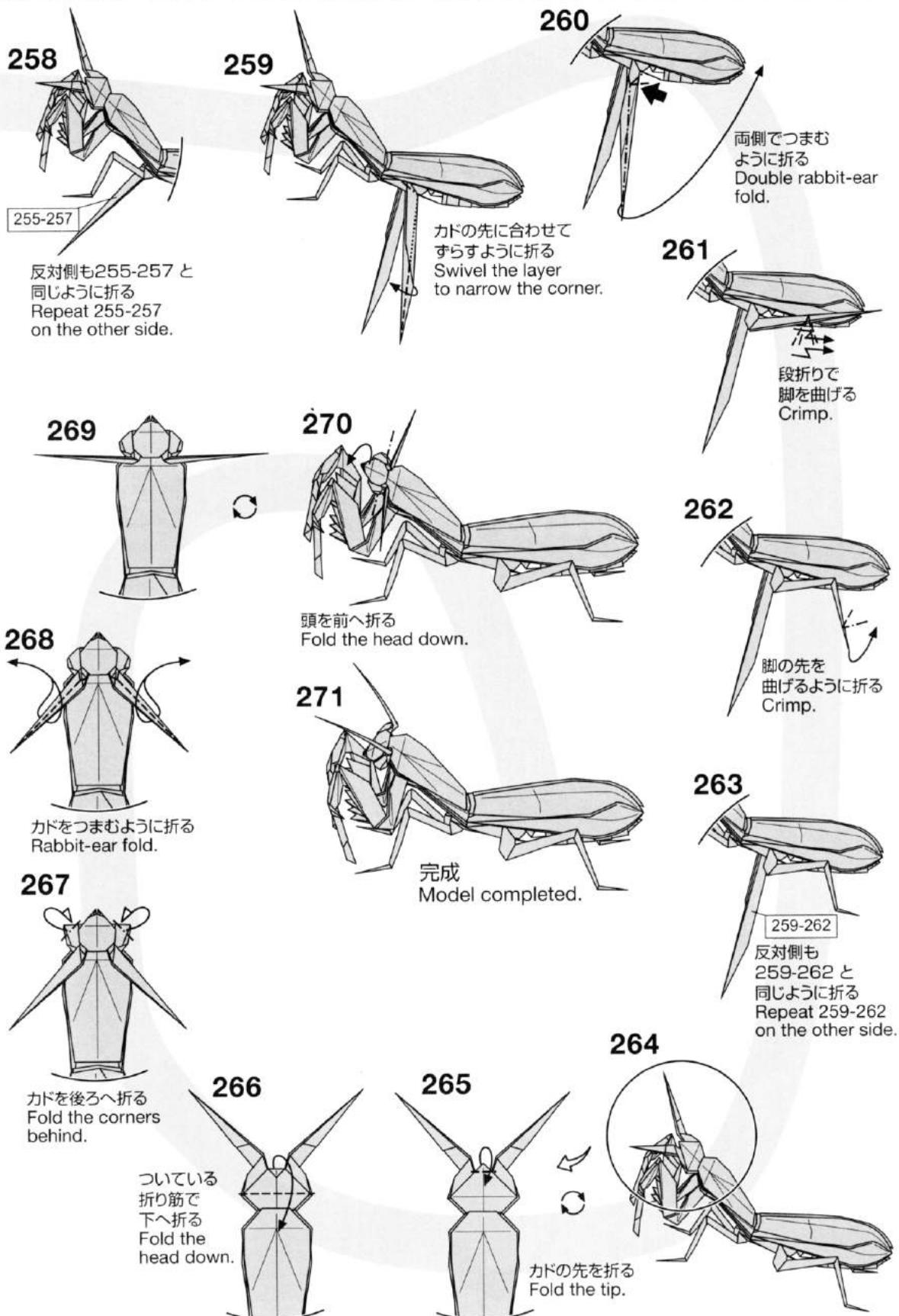
219

220



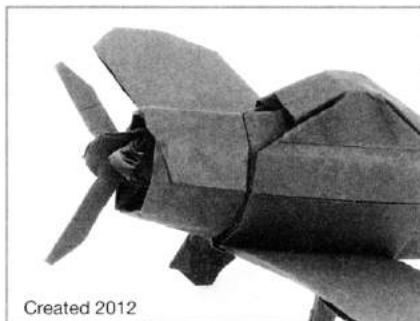


カマキリ

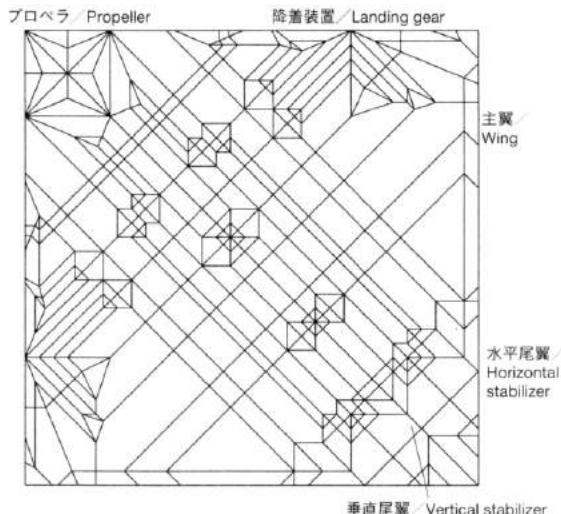


零式艦上戦闘機

Zero Fighter



Created 2012



神 谷作品としては珍しい人工物を題材とした作品です。元々はタイヤのない飛行形態を折った作品に、ヒダを追加してタイヤを折り出したものが本作になります。この作品では、基本的な構造に蛇腹折りを採用しています。蛇腹を使う理由は、カドの折り出しと面の折り出しのおおまかに2つに分けることができます。本書に掲載されている作品の場合、トンボは前者、ウミガメや本作は後者の性質が強い作品になります。特に尾翼等については、カドを模様を折り出すような要領で作っていますが、このような方法でカドを作るためには縦横のヒダを用意する必要があります。このヒダをうまくコントロールする事が、本作のようなタイプの蛇腹作品では重要になります。

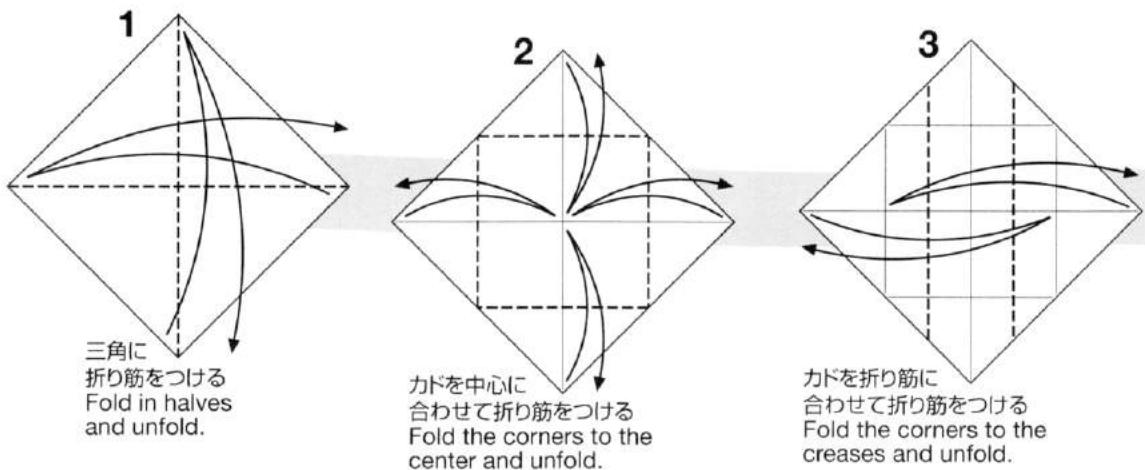
ただしこのヒダの大きさや位置の調整のため、折り工程は細かいヒダの処理を淡々と進めるような手順になっています。一連の手順で大きく形が変わるような、コンプレックス系の折り紙で一番面白いと思われる工程がほとんどないのは残念ですが、こればかりはどうしようもありません。

300工程近くある長い手順の作品です。最初の折り筋の精度が仕上がりに直結するので、焦らず丁寧に折ると良いでしょう。

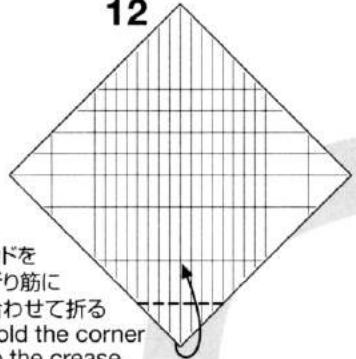
I rarely design a model with an artificial motif. This model was without wheels at first, which were added later for this version. This model is pleat-based. The pleat-based models use the pleated areas mainly for two reasons: obtaining necessary flaps and guaranteeing the patterns on the surface. The dragonfly in this book uses pleated areas for flaps, but the sea turtle and this model use pleats for the patterns. Flaps for the tail of this model is folded out patterned with crease lines and folded edges, for which I needed to embed pleated edges surrounding the flaps. It is important to manage such pleated edges optimally for designing and folding pleat-based models of this type.

Due to the structure of the model mentioned above, folding steps for this model are flat with repeated folding of edges and pleats. It does not go like "more interesting" complex models in which one step often drastically changes the overall pictures, but it cannot be done in other ways due to the structure of it.

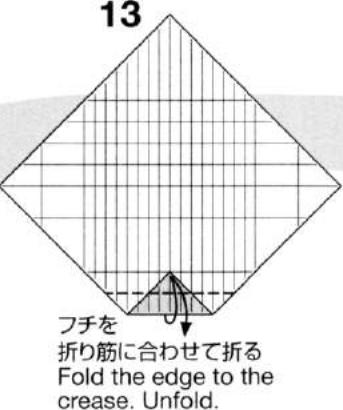
It is a model with many steps, nearly 300. Care for being precise in the initial precreasing.



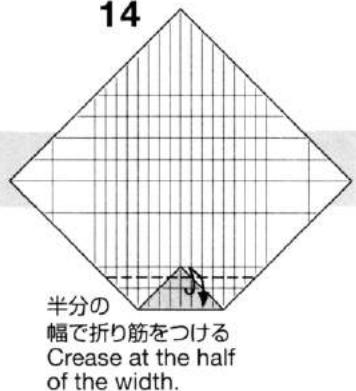
12



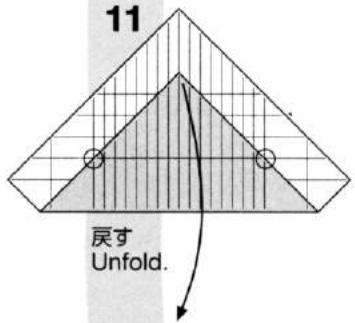
13



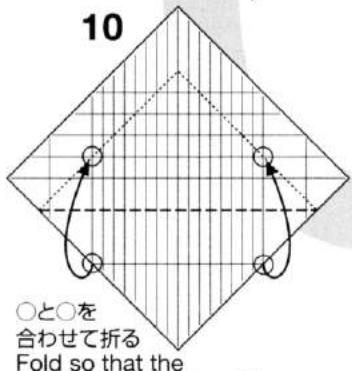
14



11

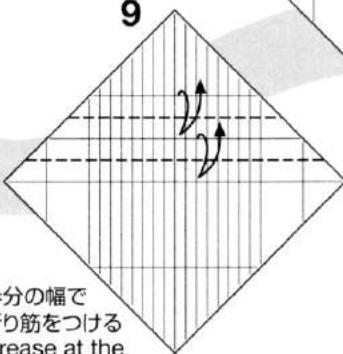


10

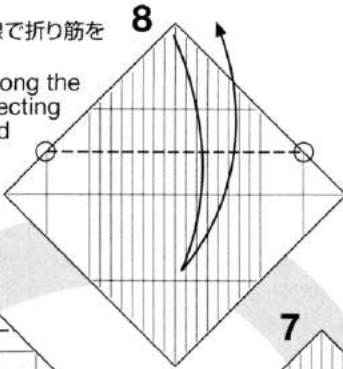


○を結ぶ線で折り筋を
つける
Crease along the
line connecting
the circled
points.

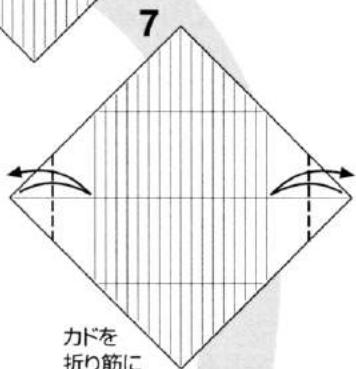
9



8

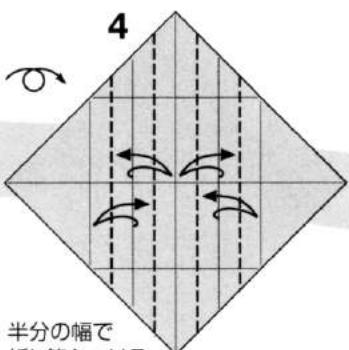


7

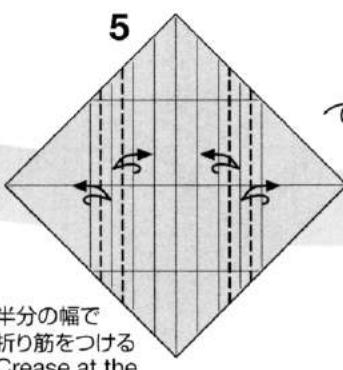


力道を
折り筋に
合わせて折り筋をつける
Fold the corners to the
creases and unfold.

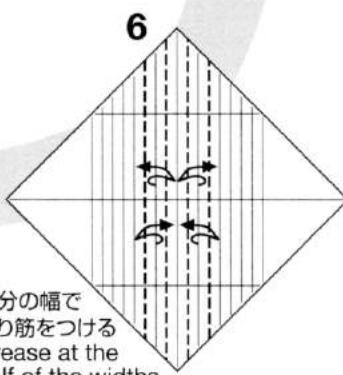
4



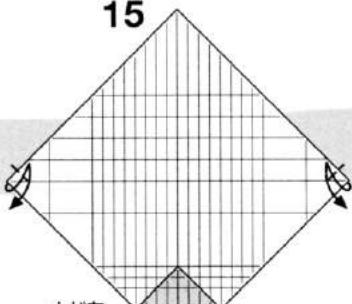
5



6

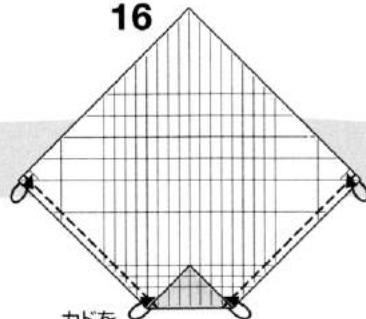


15



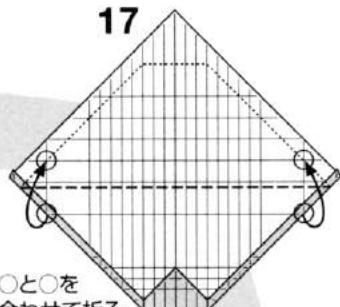
カドを
折り筋に合わせて印をつける
Fold the corners to the
creases to make a mark.

16



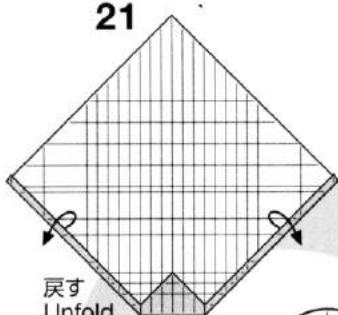
カドを
印に合わせて折る
Fold the corners
to the marks.

17



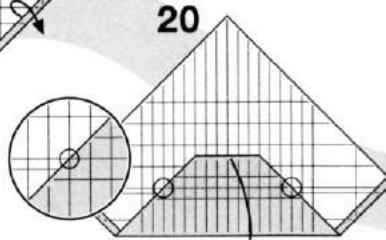
○と○を
合わせて折る
Fold so that the
two circled points will be
on top of each other.

21



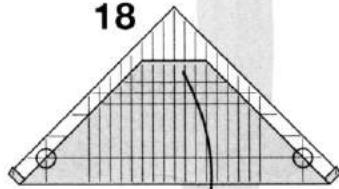
戻す
Unfold.

20



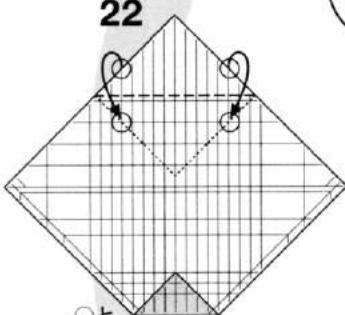
戻す
Unfold.

18



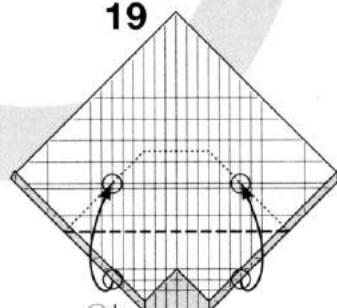
戻す
Unfold.

22



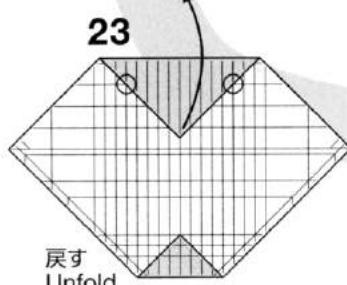
○と
○を合わせて折る
Fold so that the two
circled points will be
on top of each other.

19



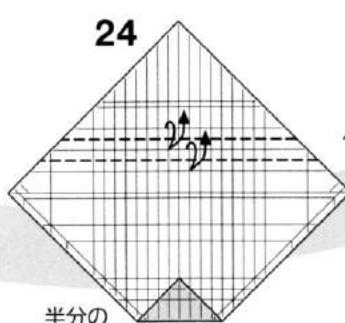
○と
○を合わせて折る
Fold so that the two
circled points will be
on top of each other.

23



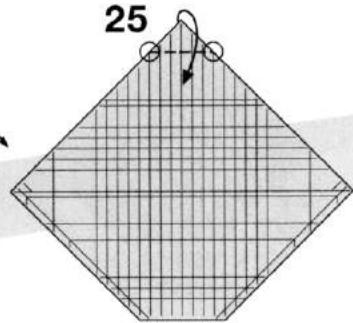
戻す
Unfold.

24

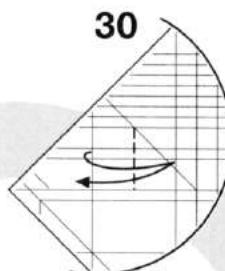
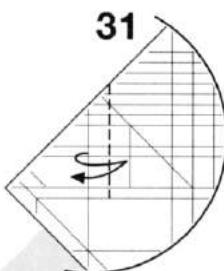
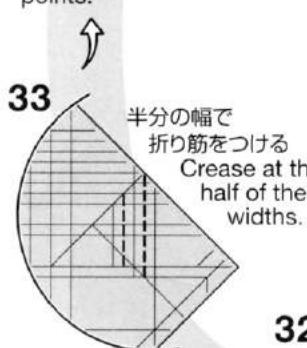
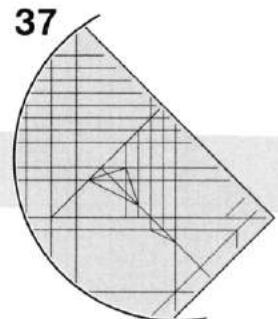
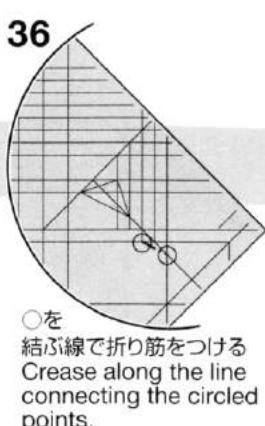
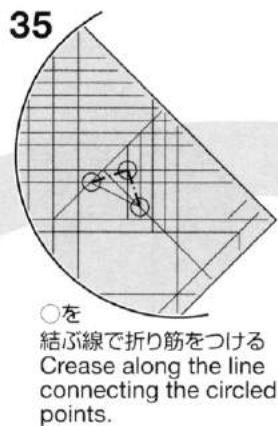
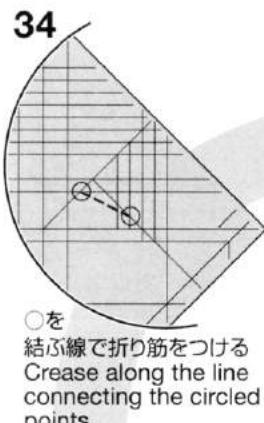


半分の
幅で折り筋をつける
Crease at the half
of the widths.

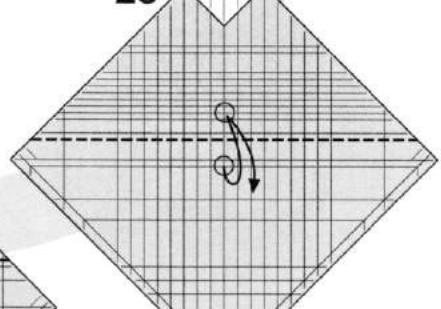
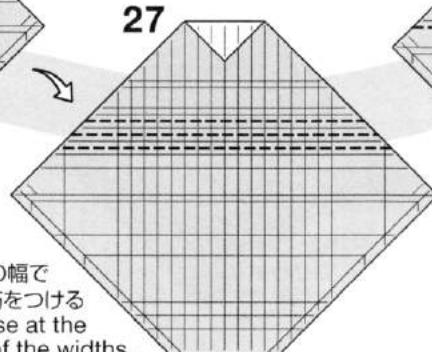
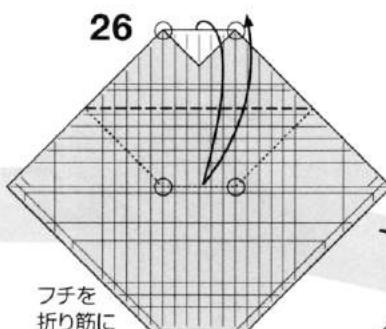
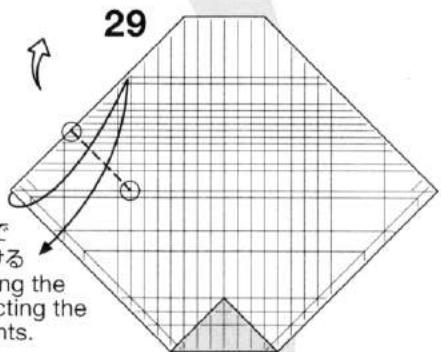
25

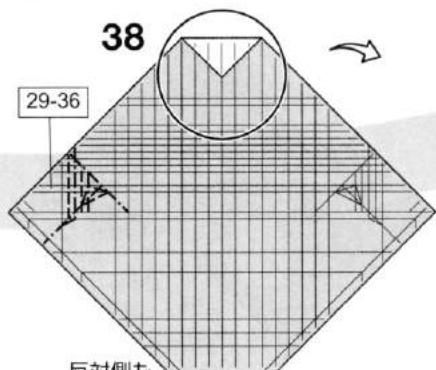


○を結ぶ線で折る
Fold along the line
connecting the
circled points.

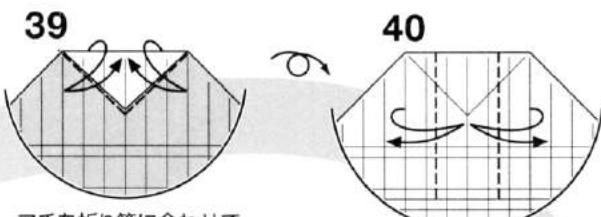


折り筋と折り筋を
合わせて折り筋を
つける
Fold so that the
crease lines will align.
Unfold.

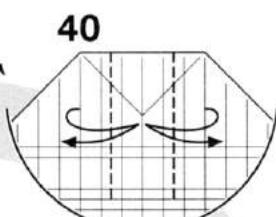




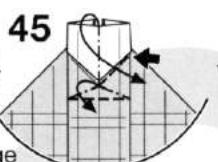
反対側も
29-36と同じように折り筋をつける
Repeat 29-36 on the other side.



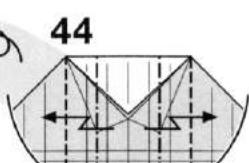
フチを折り筋に合わせて
折り筋をつける
Fold the edges
to the crease and unfold.



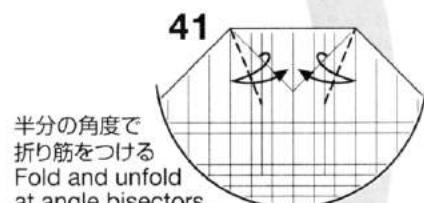
折り筋を中心^に合わせて
折り筋をつける
Fold the creases
to the center line
and unfold.



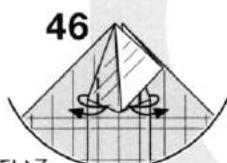
ついている
折り筋を使って
中心線をつまむ
ようにして
折りたたむ
Raise the edge
and rabbit-ear.



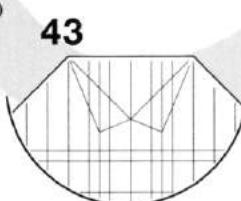
ついている折り筋で
上の部分だけ段折り
Pleat using the
creases,
but only fold the
top part.



半分の角度で
折り筋をつける
Fold and unfold
at angle bisectors.



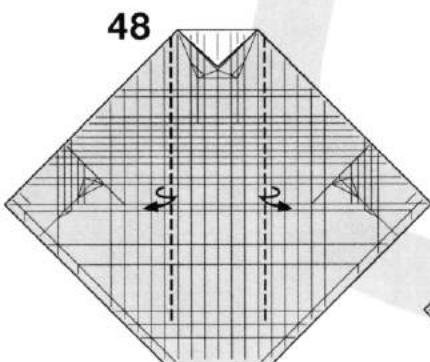
ついている
折り筋のところで折り筋をつける
Crease along the existing
crease lines.



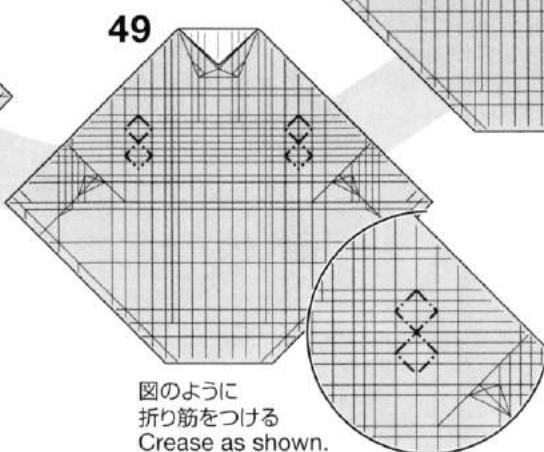
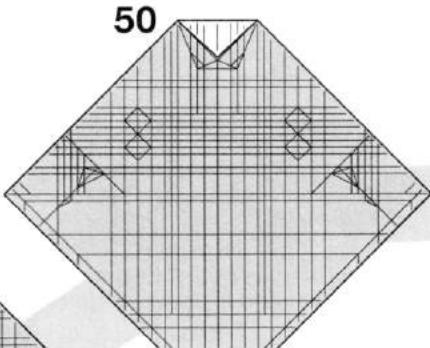
42 ○を
結ぶ線で折り筋をつける
Crease along the line
connecting the circled
points.



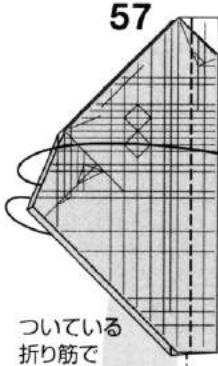
開く
Open the
layer.



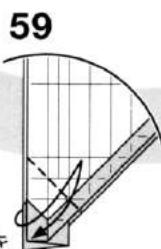
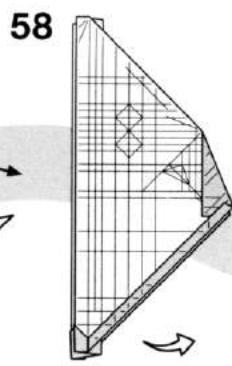
半分の幅で
折り筋をつける
Crease at the
half of the widths.



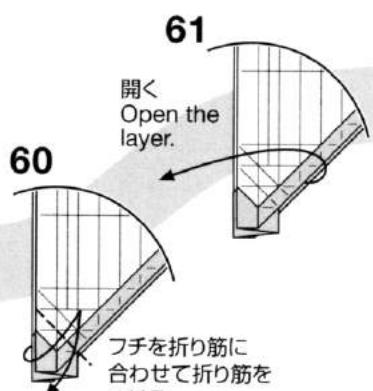
図のよう^に
折り筋をつける
Crease as shown.



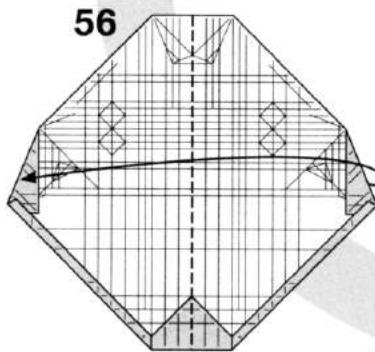
ついている
折り筋で
反対側へ折る
Fold along the
existing creases.



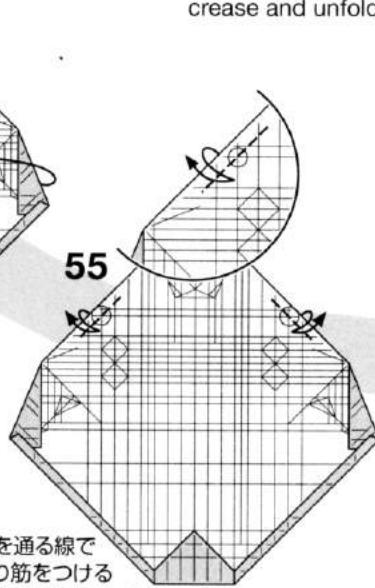
フチを
折り筋に合わせて
折り筋をつける
Fold the edge to the
crease and unfold.



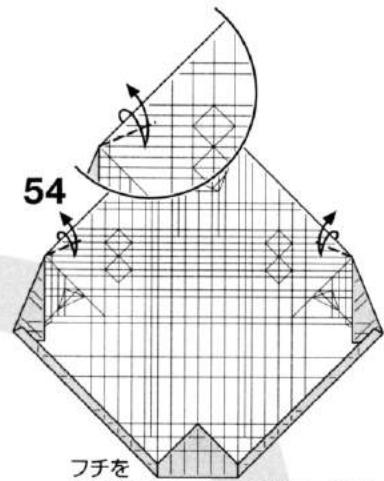
開く
Open the
layer.
フチを折り筋に
合わせて折り筋を
つける
Fold the edge
to the crease
and unfold.



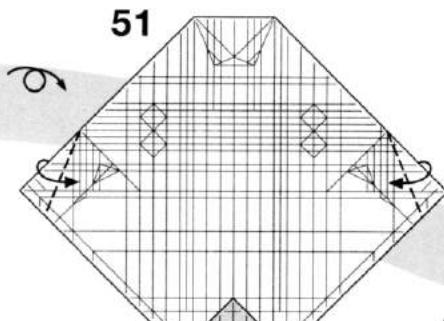
半分に折る
Fold in half.



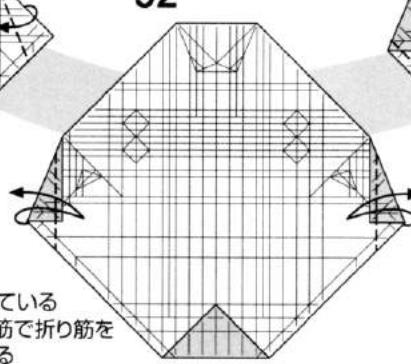
○を通る線で
折り筋をつける
Fold at the circled points
and unfold.



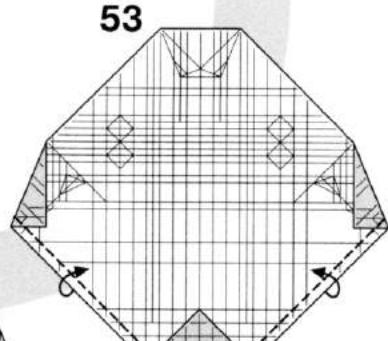
フチを
折り筋に合わせて折り筋をつける
Fold the edges to the creases
and unfold.



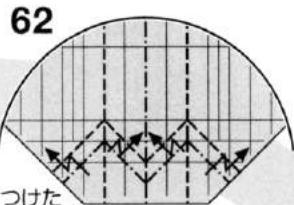
フチを
折り筋に合わせて折る
Fold the edges to
the creases.



ついている
折り筋で折り筋を
つける
Fold and unfold along the
existing creases.



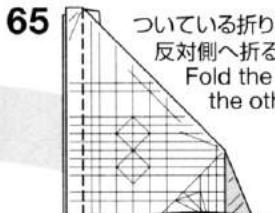
ついている折り筋で折る
Fold up along the
existing creases.



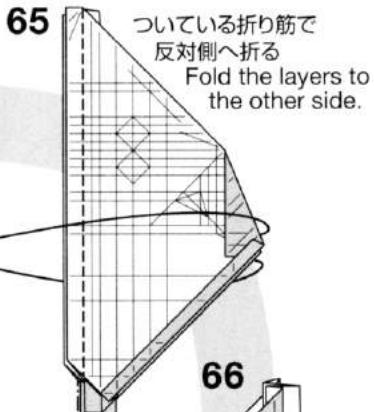
つけた
折り筋で段折りするように
折りたたむ
Pleat like a series of
inside reverse folds
and re-fold the model
in half.



63

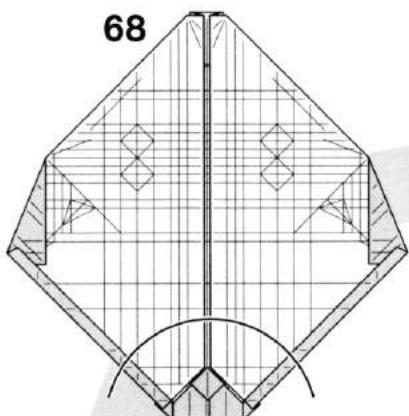


64



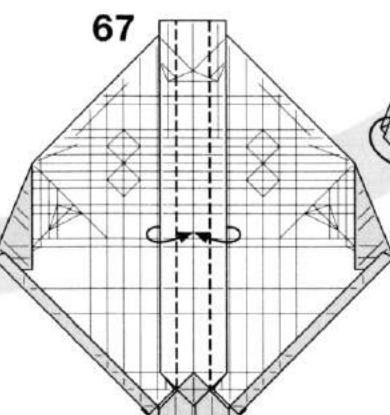
65

ついている折り筋で
反対側へ折る
Fold the layers to
the other side.



66

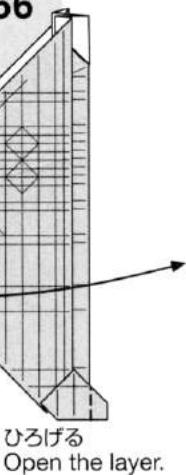
途中の図
In progress...



67

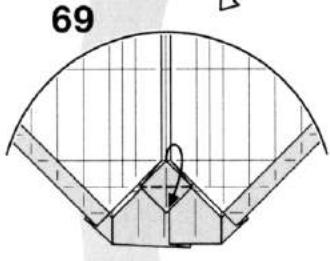
66

67



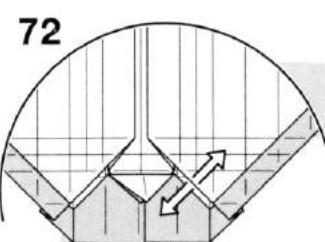
ひろげる
Open the layer.

フチを反対側へ折る
Fold the layers
to the other side.



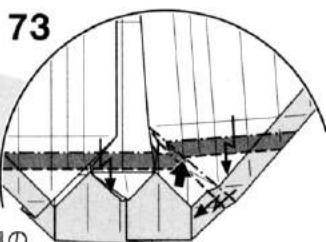
69

カドを下へ折る
Fold the corner down.



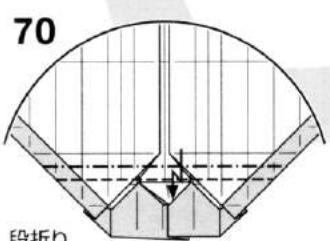
70

軽くひろげる
Open the layer.



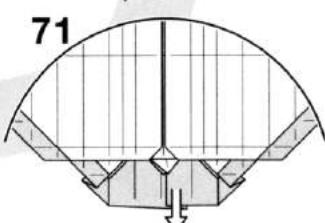
71

■の
部分を沈めるように段折り
Pleat sinking the darkened area.



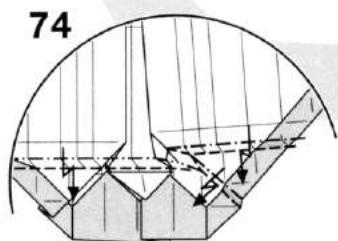
70

段折り
Pleat at the
half of the width.



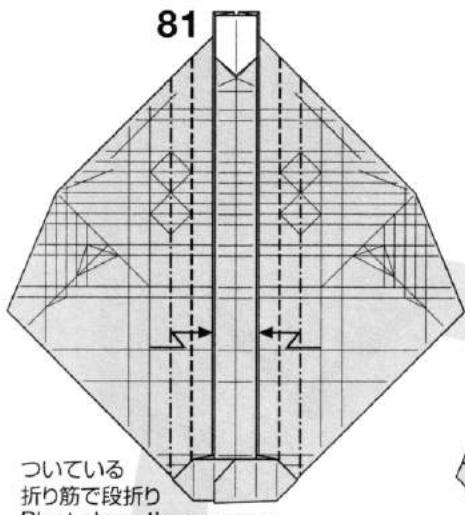
71

戻す
Unfold.

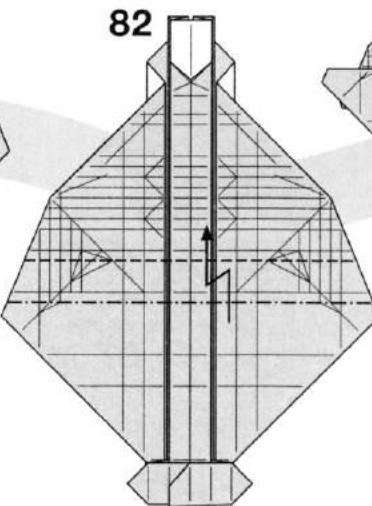


72

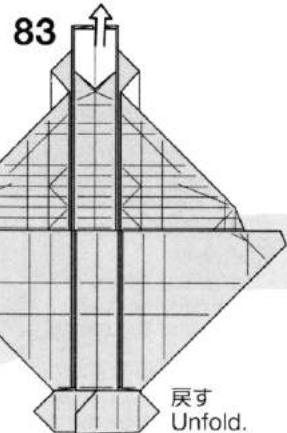
途中の図
In progress...



ついている
折り筋で段折り
Pleat along the creases.

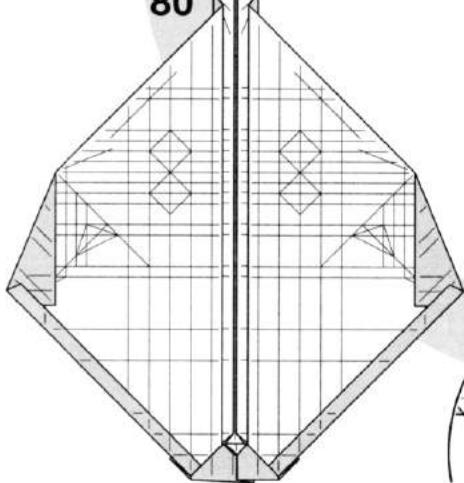


82



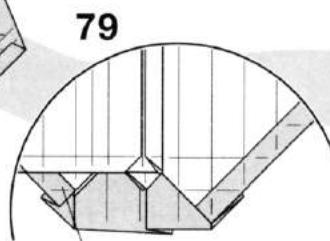
83

戻す
Unfold.



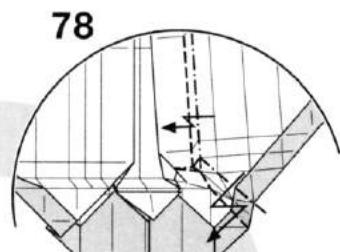
80

ついている折り筋で段折り
Pleat along the creases.



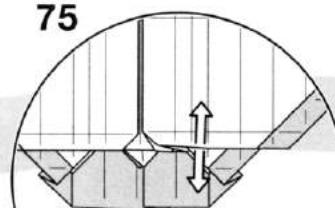
79

73-78 反対側も73-78と
同じように折る
Repeat 73-78
on the other side.



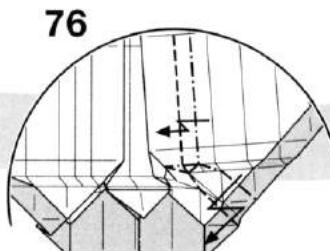
78

途中の図
In progress...



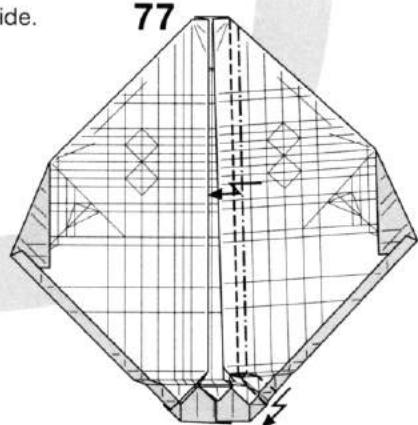
75

軽くひろげる
Open the layer.



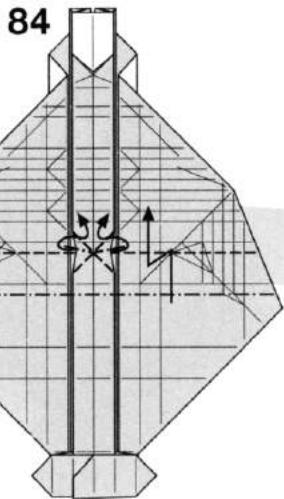
76

上の部分を細く段折りしながら
右下の斜めの段折りの幅が
3倍になるように折りたたむ
Pleat and stretch the pleated
edge towards lower right.

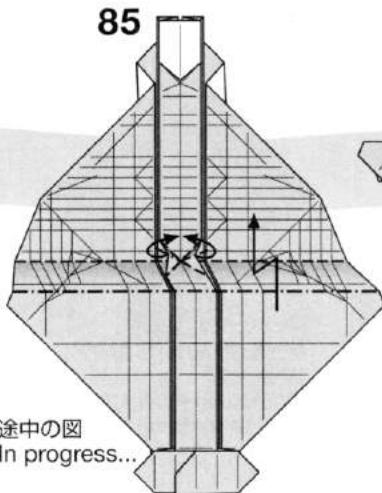


77

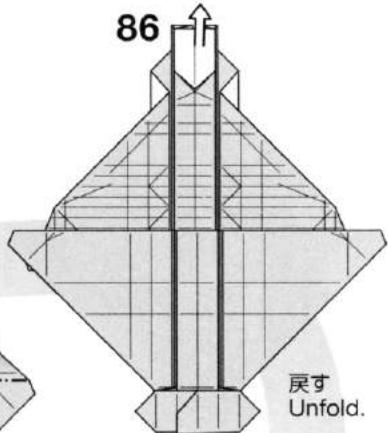
76の全体図
76 zoomed out.



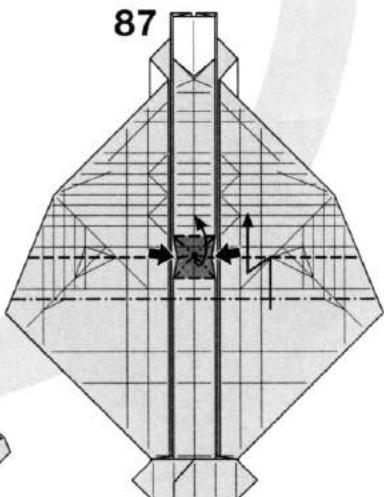
中心の部分を、
中わり折りしながら
折りたたむ
Pleat again, with
two inside reverse
folds on the edges.



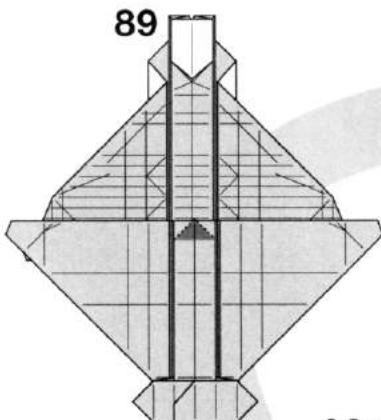
途中の図
In progress...



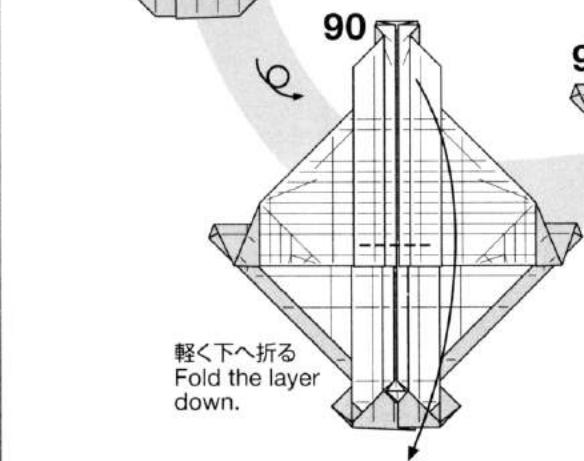
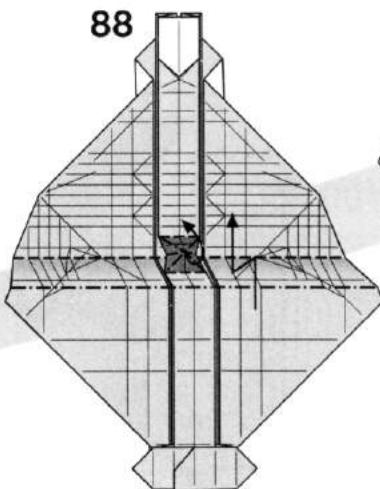
戻す
Unfold.



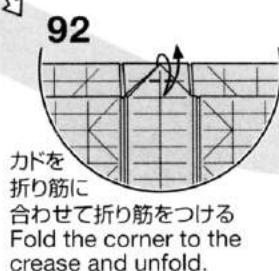
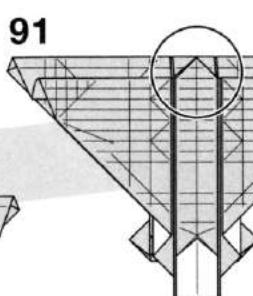
■の部分を
押し出すようにして
折りたたむ
(Unsink)
Unsink the darkened
area inside the pleat.



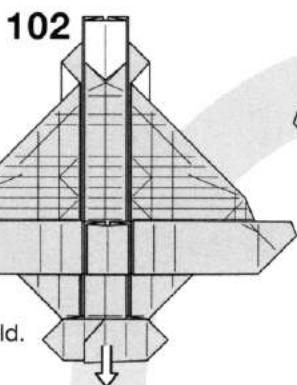
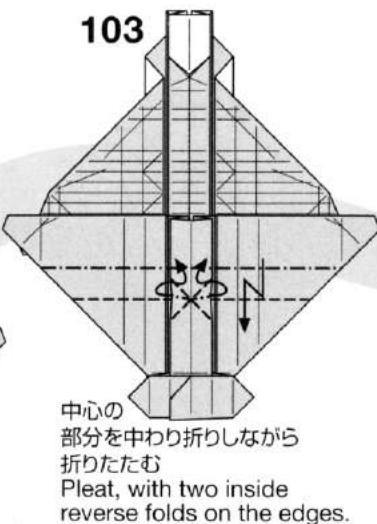
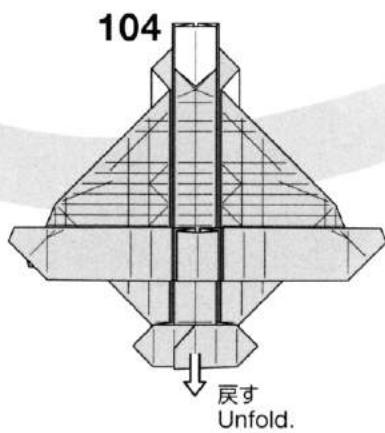
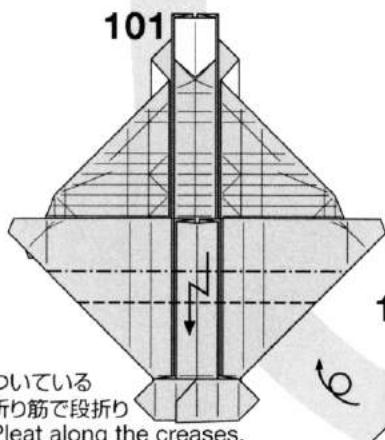
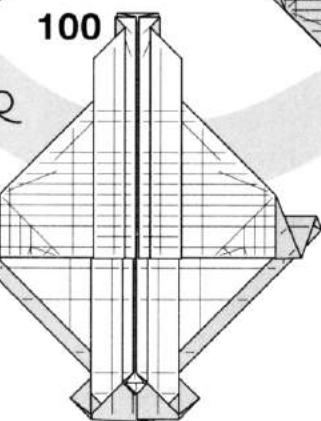
途中の図
In progress...



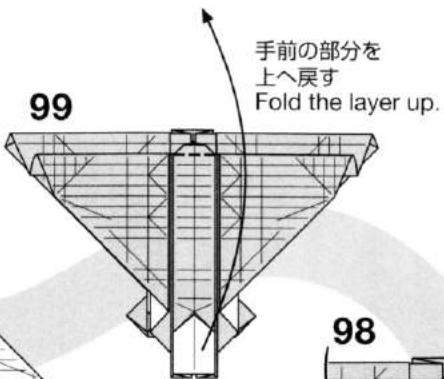
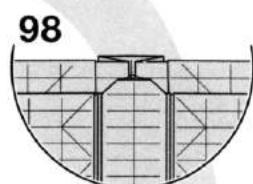
軽く下へ折る
Fold the layer
down.



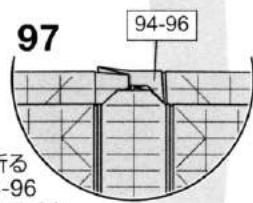
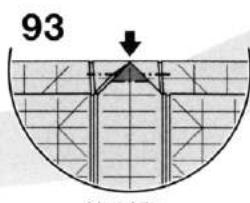
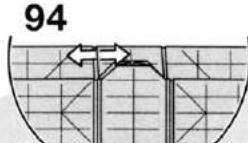
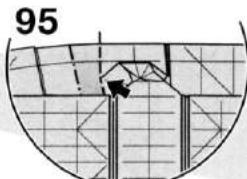
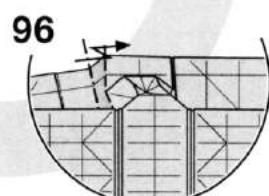
カドを
折り筋に
合わせて折り筋をつける
Fold the corner to the
crease and unfold.

戻す
Unfold.中心の部分を中わり折りしながら
折りたたむ
Pleat, with two inside
reverse folds on the edges.戻す
Unfold.ついている
折り筋で段折り
Pleat along the creases.

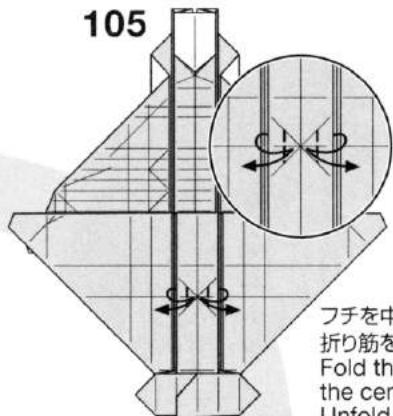
99

手前の部分を
上へ戻す
Fold the layer up.

97

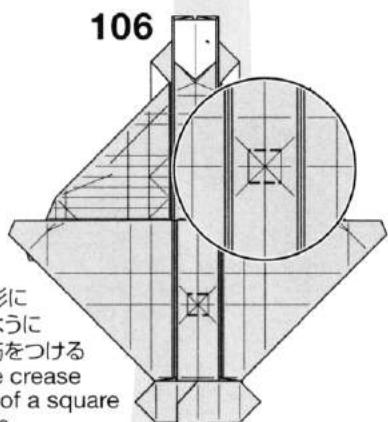
反対側も
94-96と
同じように折る
Repeat 94-96
on the other side.沈め折り
(Open Sink)
Open Sink.ヒダをひろげる
Open the layer.中心の次の折り筋を
反対側へ押し込む
Push in the pleated
creases next to the
central layers.段折りで折りたたむ
Pleat and flatten.

105



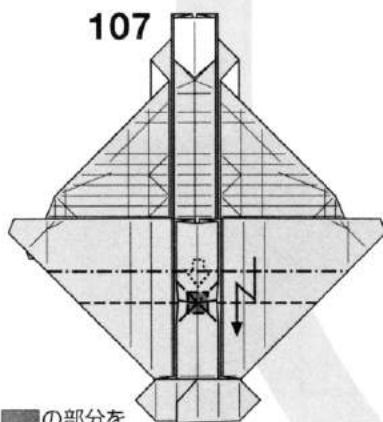
チを中心に合わせて
折り筋をつける
Fold the edges to
the center line.
Unfold

106



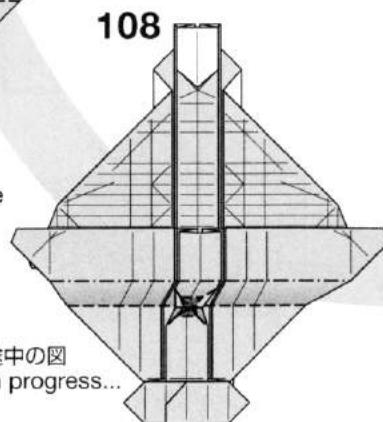
正方形に
なるように
折り筋をつくる
Make crease
lines of a square
shape.

107



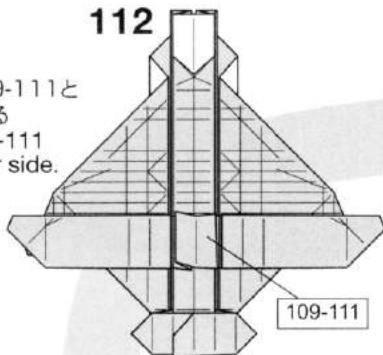
■の部分を
押し出すようにして折りたたむ
(Unsink)
Unsink the darkened square
and re-fold the pleat.

108



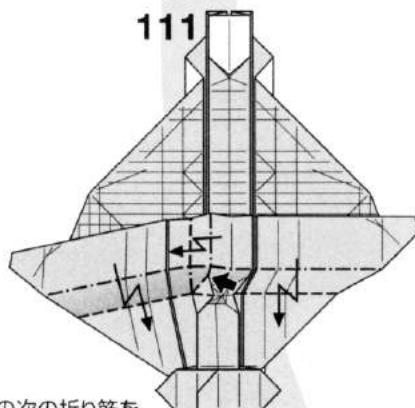
途中の図
In progress...

112



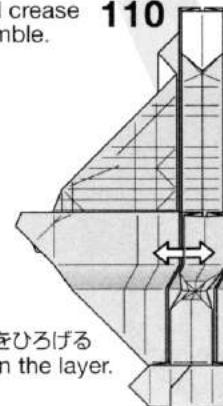
反対側も109-111と
同じように折る
Repeat 109-111
on the other side.

111



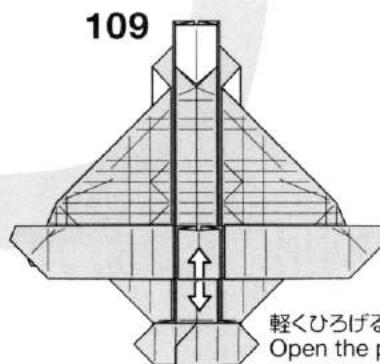
中心の次の折り筋を
反対側へ押し込むようにして
折りたたむ
Push the arrowed crease
lines in and assemble. 110

110



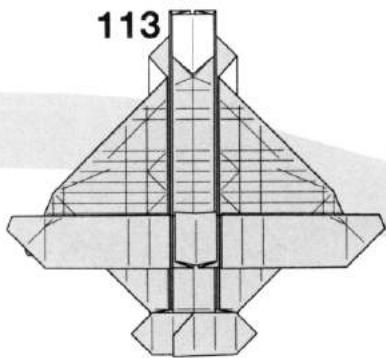
ヒダをひろげる
Open the layer.

109

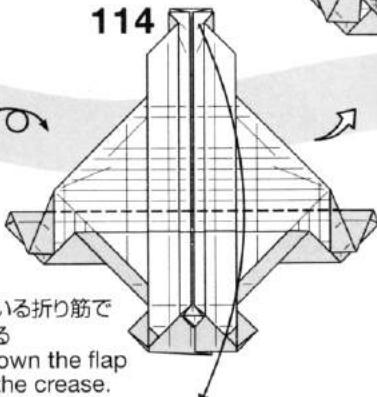


軽くひろげる
Open the pleat.

113

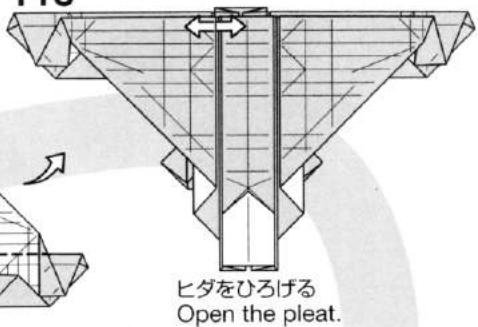


114



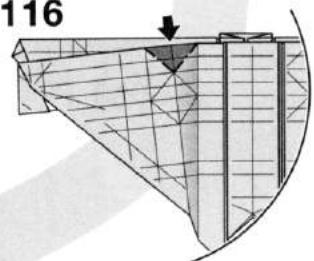
ついている折り筋で
下へ折る
Fold down the flap
along the crease.

115



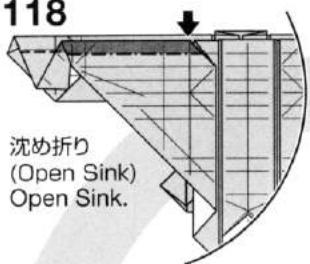
ヒダをひろげる
Open the pleat.

116



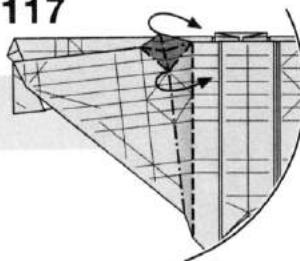
中心をつぶしながら
両側にヒダを作るよう
に
折る
Push the top part
and crimp.

118



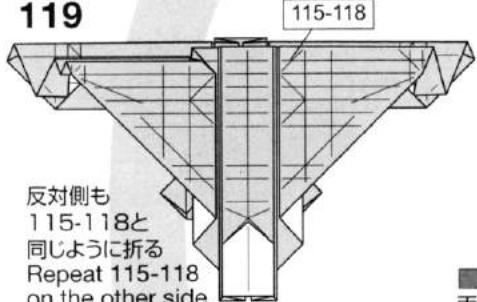
沈め折り
(Open Sink)
Open Sink.

117



ヒダを中心側へ折って
平らに折りたたむ
In progress...
Flatten the model.

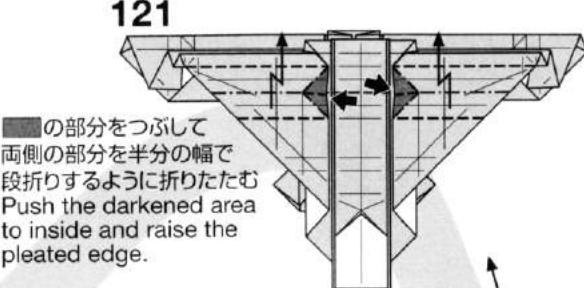
119



115-118

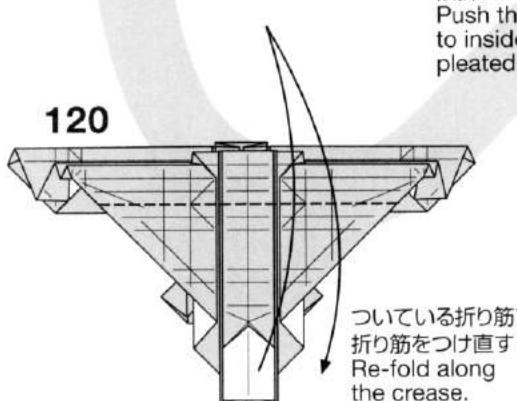
反対側も
115-118と
同じように折る
Repeat 115-118
on the other side.

121



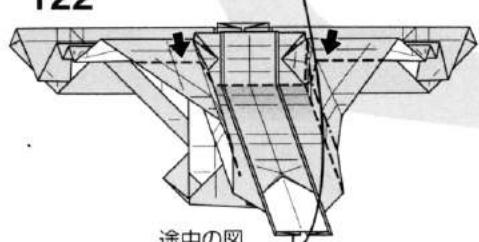
■の部分をつぶして
両側の部分を半分の幅で
段折りするよう
に折りたたむ
Push the darkened area
to inside and raise the
pleated edge.

120



ついている折り筋で
折り筋をつけ直す
Re-fold along
the crease.

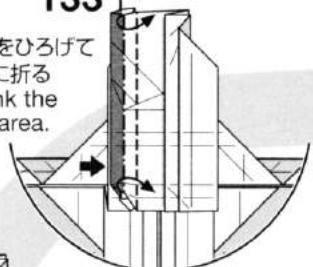
122



途中の図
In progress...
Flatten the model.

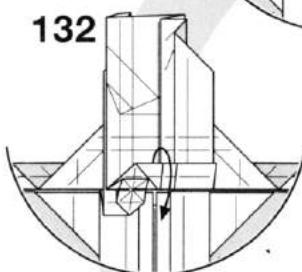
133

■のフチをひろげて
つぶすように折る
Spread sink the
darkened area.



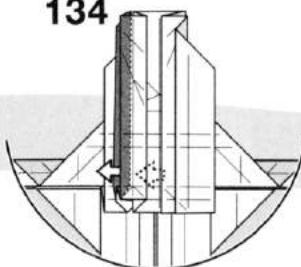
132

下へもどす
ように折る
Fold the flap down.



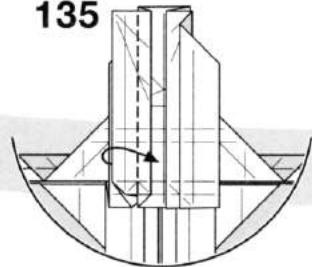
134

内側のフチを出す
(Unsink)
Unsink the hidden
layer.



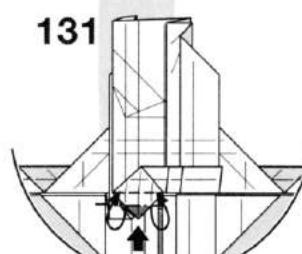
135

フチを反対側へ折る
Fold the layer
to the other side.



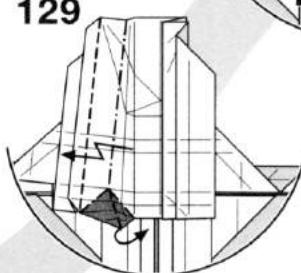
131

カドをひろげてつぶすように折る
Spread sink the corner.



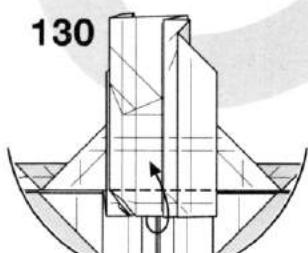
129

ヒダをそれぞれへ折って
平らに折りたたむ
In progress...
Flatten the model.



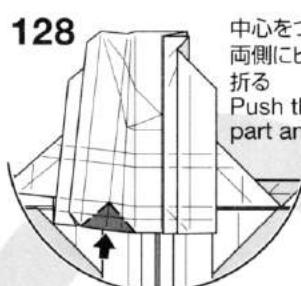
130

フチを上へ折る
Fold the edge up.



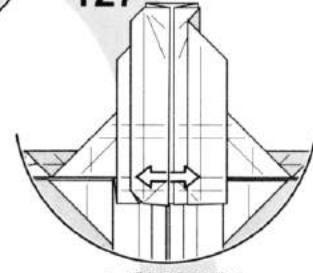
128

中心をつぶしながら
両側にヒダを作るよう
に折る
Push the darkened
part and pleat.



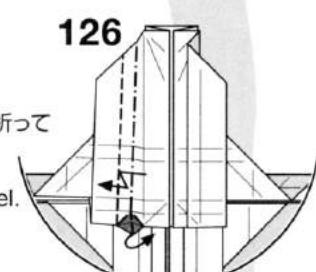
127

ヒダをひろげる
Unfold the pleat.



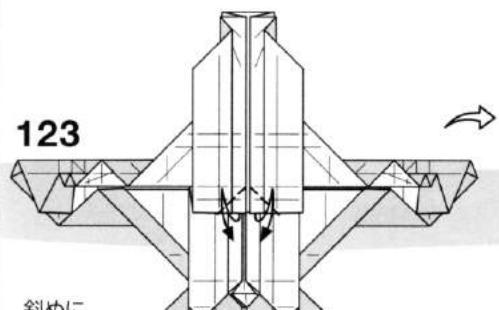
126

ヒダをそれぞれへ折って
平らに折りたたむ
In progress...
Flatten the model.



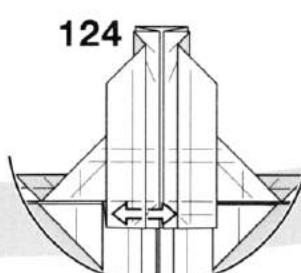
123

斜めに
折り筋をつける
Fold and unfold.



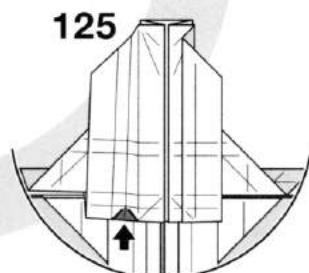
124

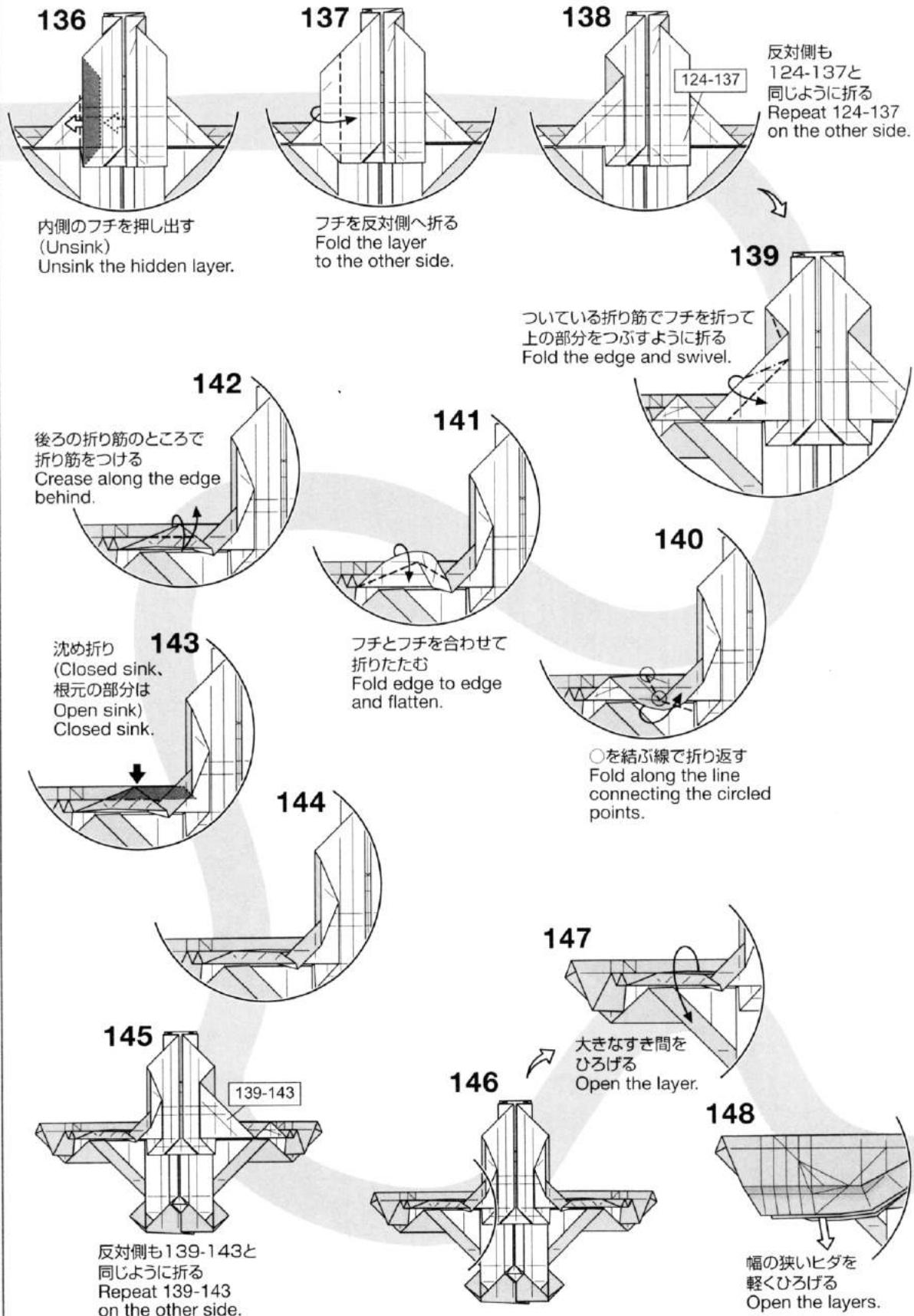
細いヒダをひろげる
Unfold the narrow pleat.

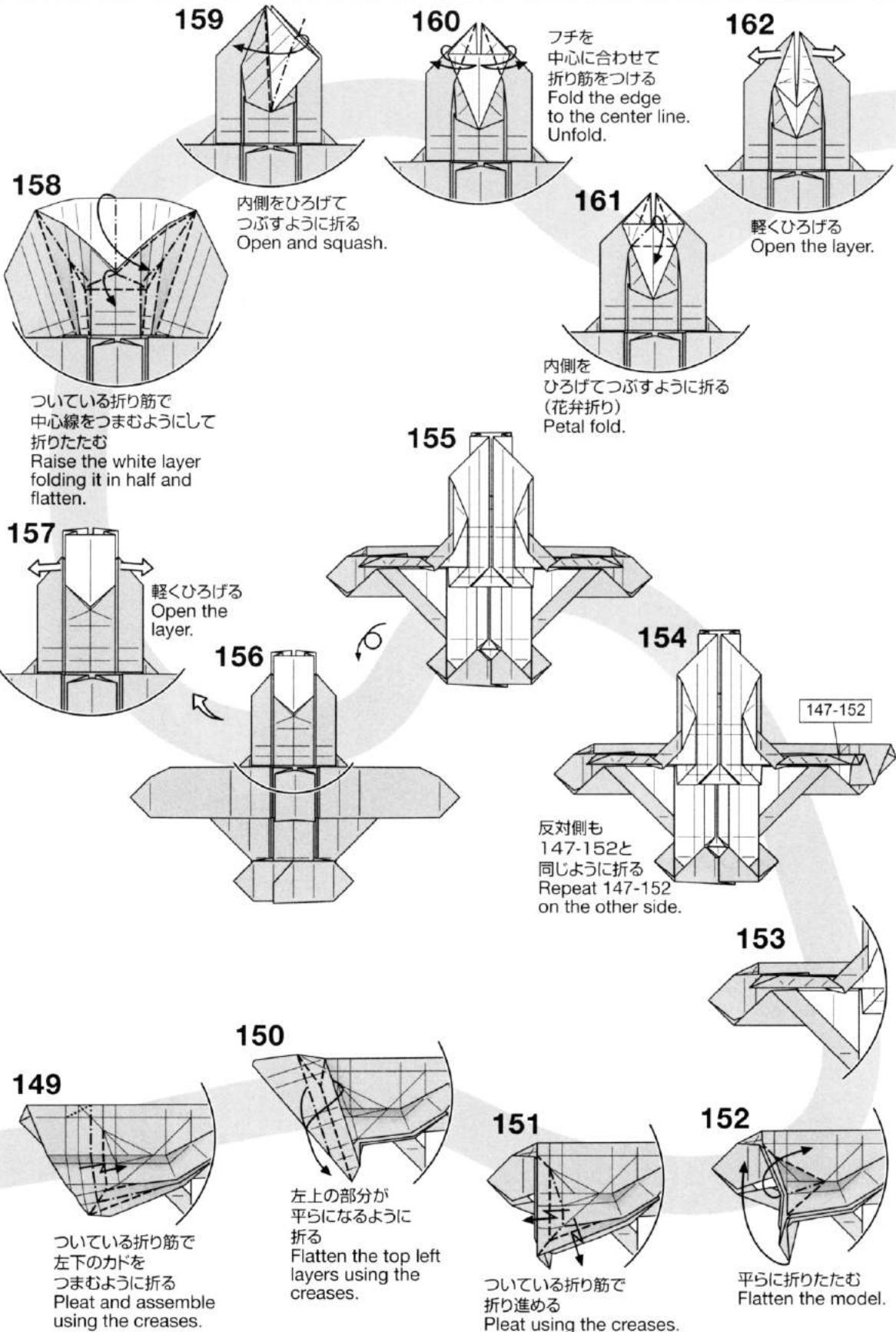


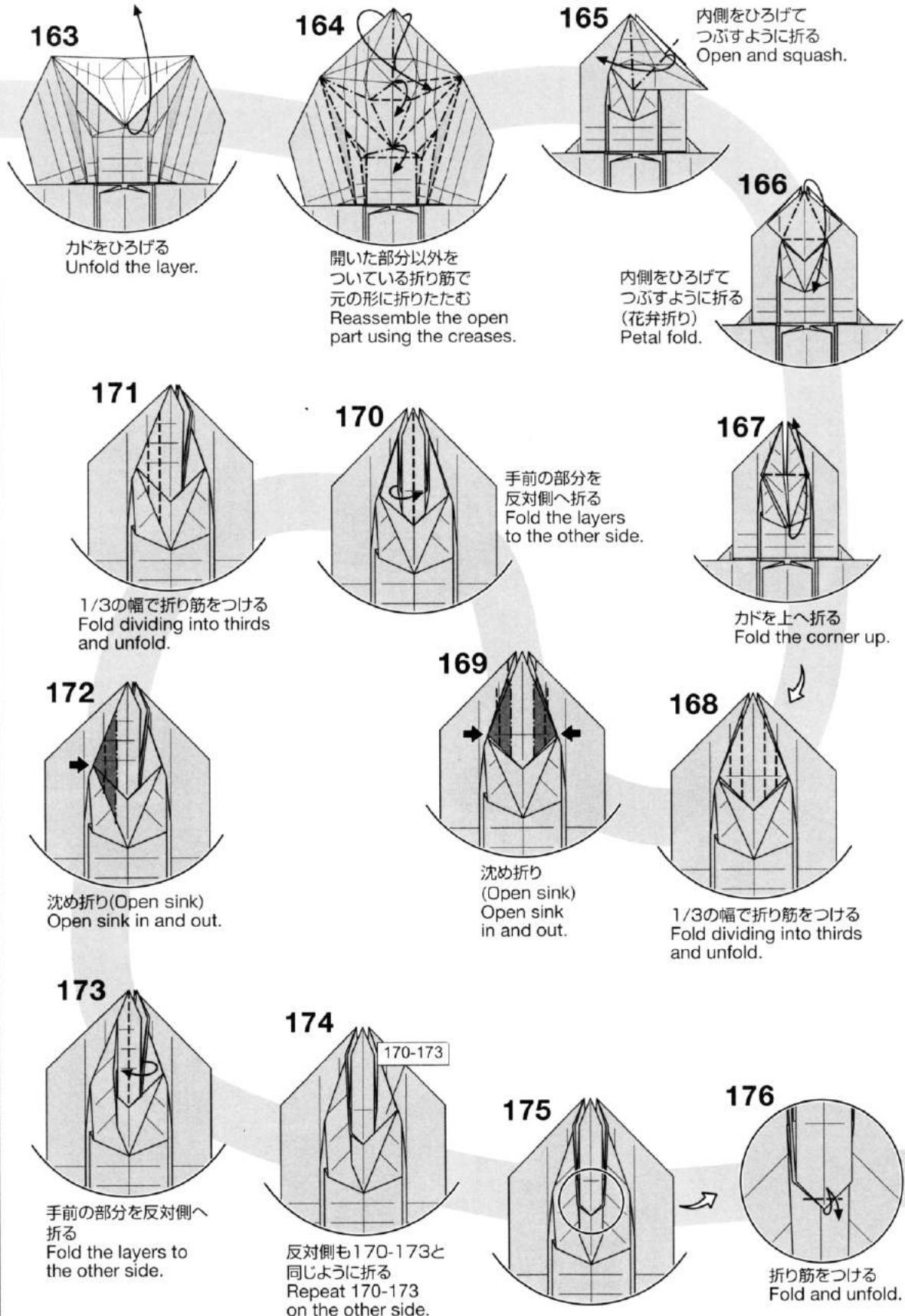
125

中心をつぶしながら
両側にヒダを作るよう
に折る
Push the darkened part
and crimp.







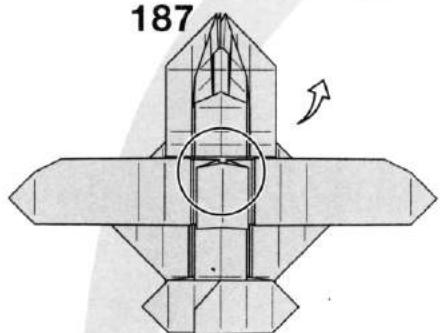


フチを下へ折って(半マス程度)
起き上がりべき部分をつぶす
ように折る
Fold the edge
down for about
the width of the
half of the grid
above. Squash
the raised parts.

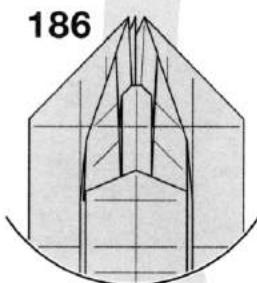
188



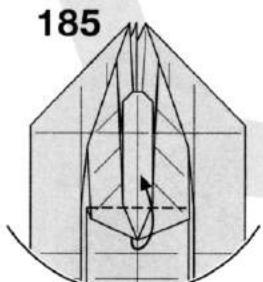
187



186

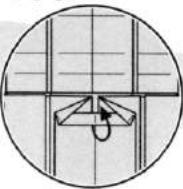


185

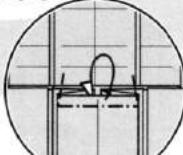


カドを上へ折る
Fold the layers up.

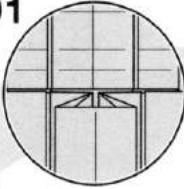
189



190



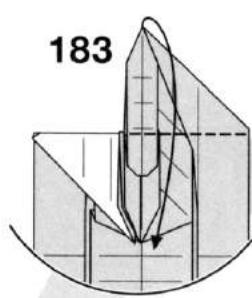
191



戻す
Unfold.

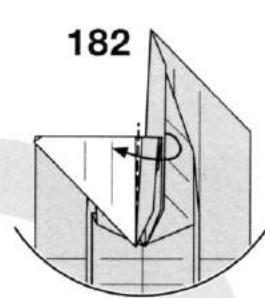
つけた折り筋でフチを
後ろのすき間へ折り込む
Fold the layer to behind
using the creases.

183



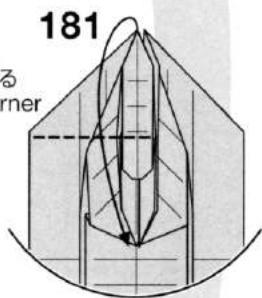
カドを下へ折る
Fold the corner down.

182



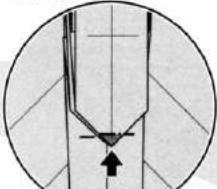
手前の部分を
反対側へ折る
Fold the layers
to the other side.

181



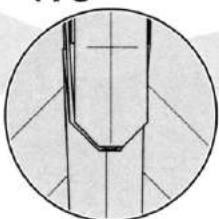
カドを下へ折る
Fold the corner
down.

177

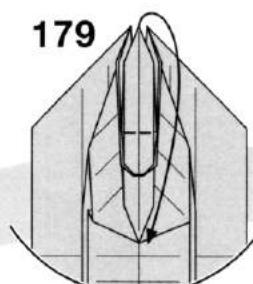


つけた折り筋で
沈め折り
(Open sink)
Open sink.

178

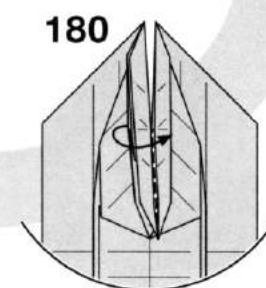


179

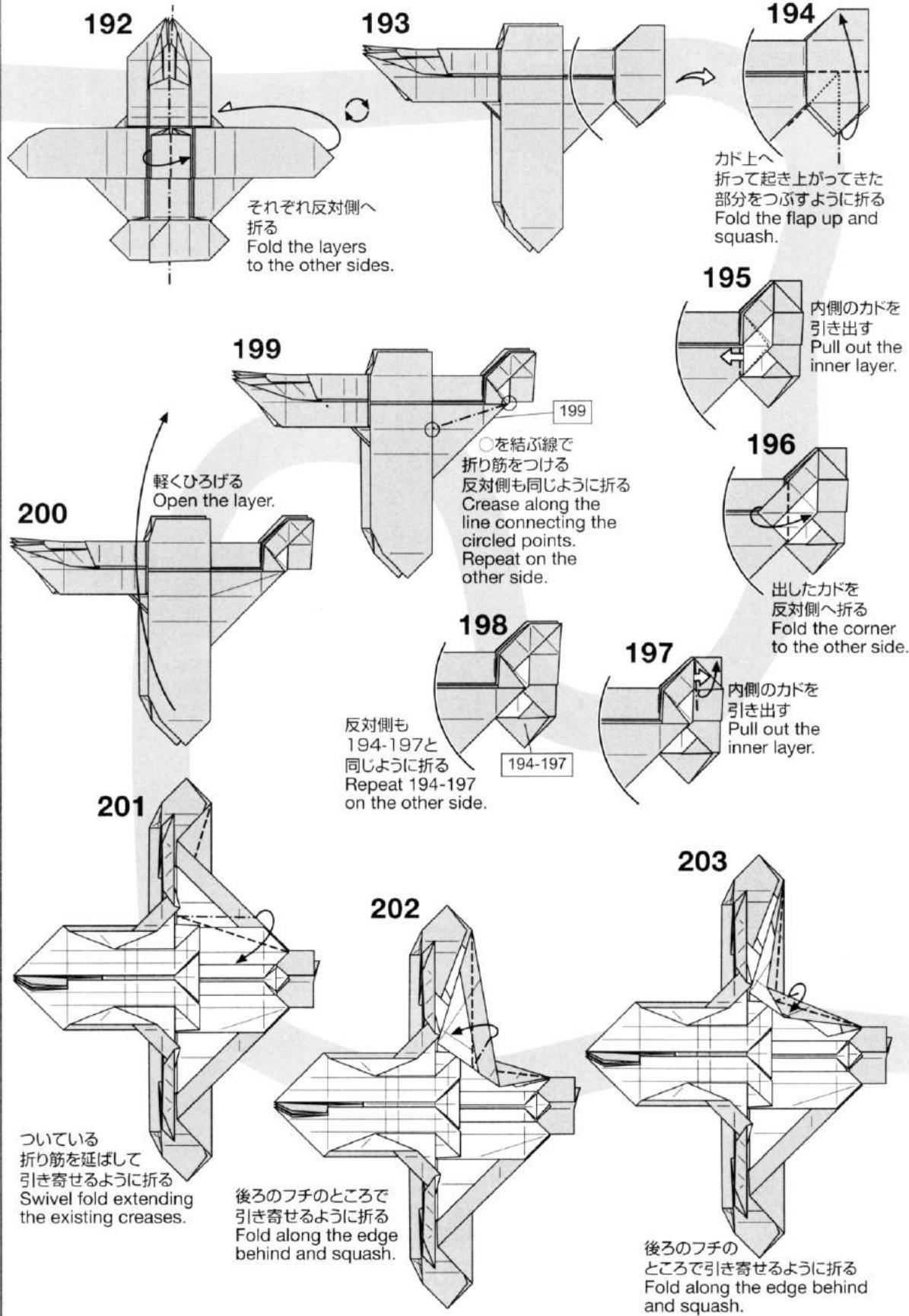


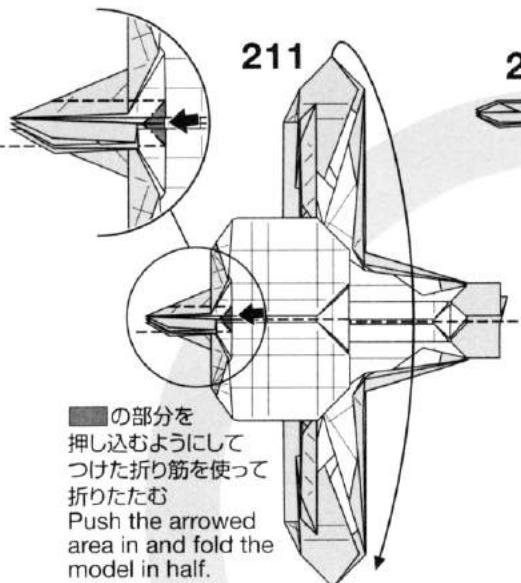
カドを下へ折る
Fold the flap
down.

180



手前の部分を反対側へ折る
Fold the layer to the
other side.



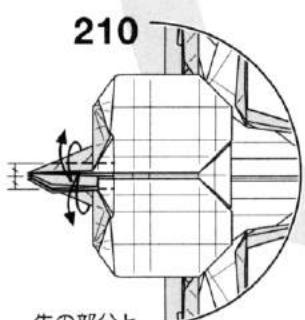


211

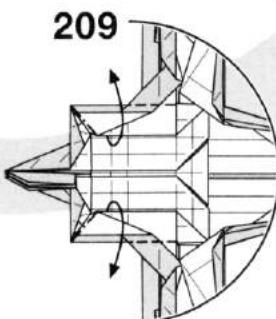
212

213

フチを下へ折る(2/3程度)
Fold down the edge at about two thirds of the width.

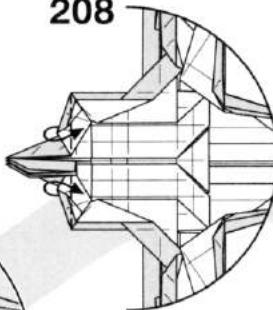


210

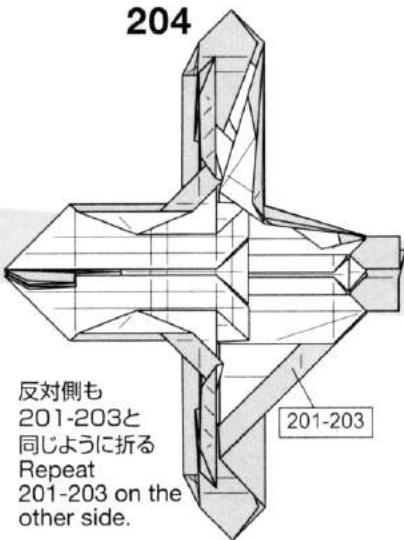
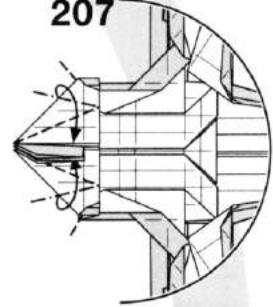


209

208

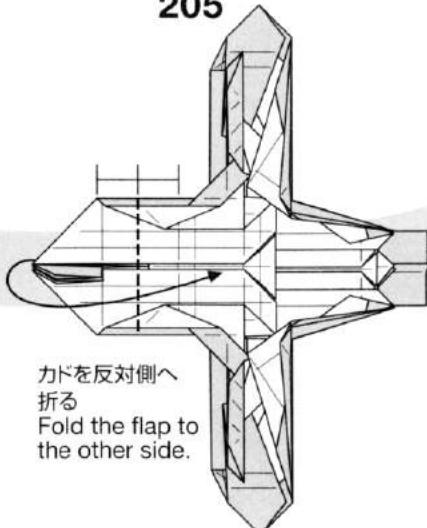


207

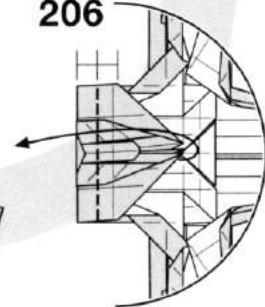


201-203

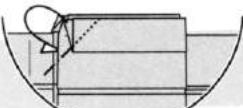
205



206

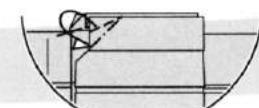


214



カドを内側へ折り込む
Fold the layer to inside.

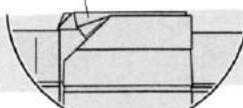
215



内側に折り込むように
斜めに段折り
Fold the layer to inside.

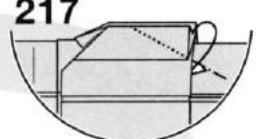
216

214-215



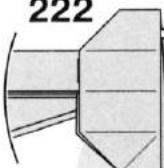
反対側も214-215と
同じように折る
Repeat 214-215
on the other side.

217



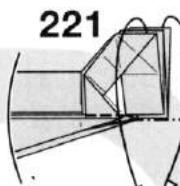
カドを内側へ折り込む
Fold the layer inside.

222



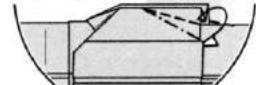
内側のカドを
引き出す
Pull out the
hidden layer.

221



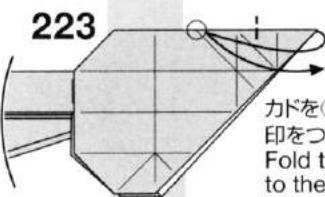
カドを下へ折る
Fold the flaps
down.

218



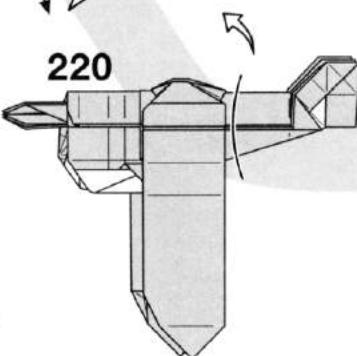
内側に折り込むように
斜めに段折り
Pleat inside.

223

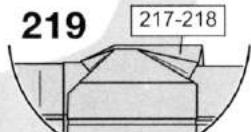


カドを○に合わせて
印をつける
Fold the corner
to the circled point
to make a mark.

220

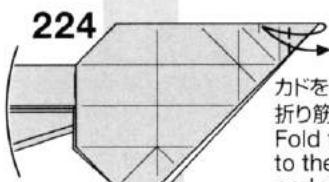


219



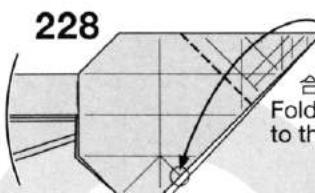
反対側も217-218と
同じように折る
Repeat 217-218
behind.

224



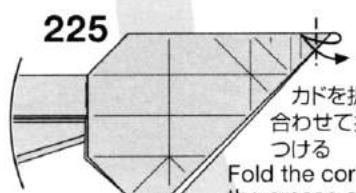
カドを印に合わせて
折り筋をつける
Fold the corner
to the mark
and unfold.

228



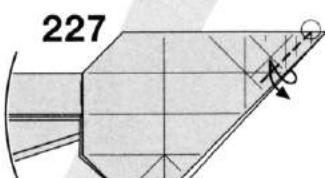
カドを○に
合わせて折る
Fold the corner
to the circled point.

225



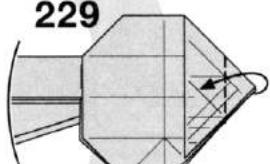
カドを折り筋に
合わせて折り筋を
つける
Fold the corner to
the crease and unfold.

227



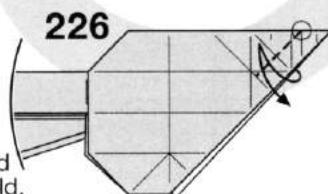
フチを折り筋に合わせて
折り筋をつける
Fold the edge to the
crease and unfold.

229



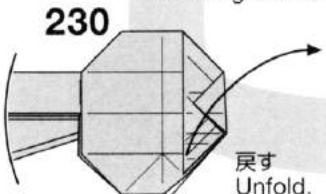
ついている折り筋の
ところで折る
Fold along the
existing crease.

226

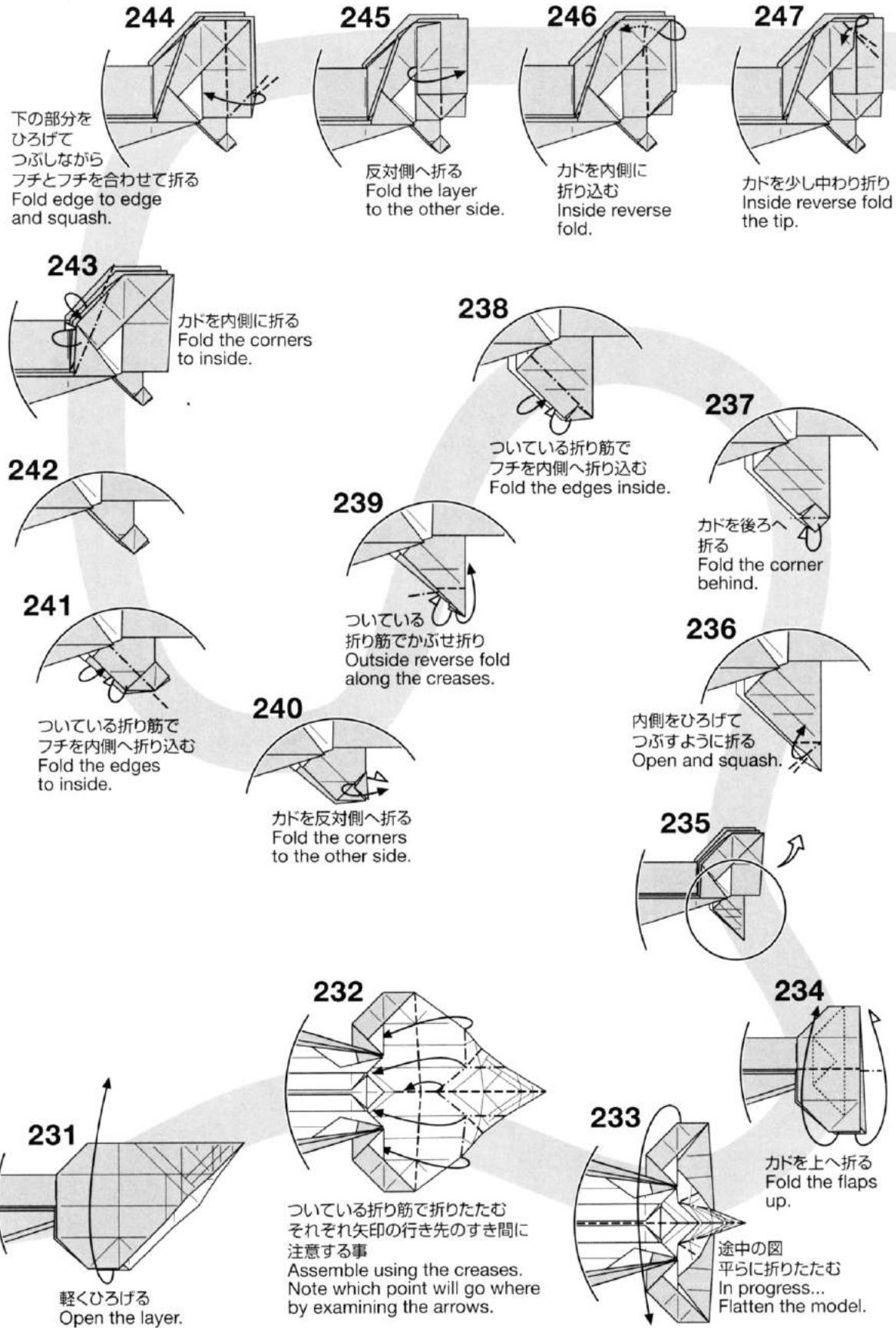


○の点から
折り筋をつける
Fold starting
from the circled
point and unfold.

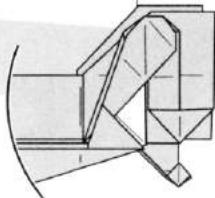
230



戻す
Unfold.

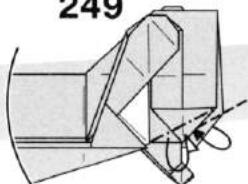


248 [243-247]



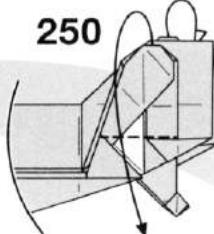
反対側も243-247と
同じように折る
Repeat 243-247
behind.

249



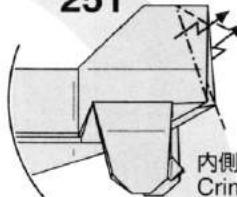
カドを内側に折り込む
Fold the corners
to inside.

250



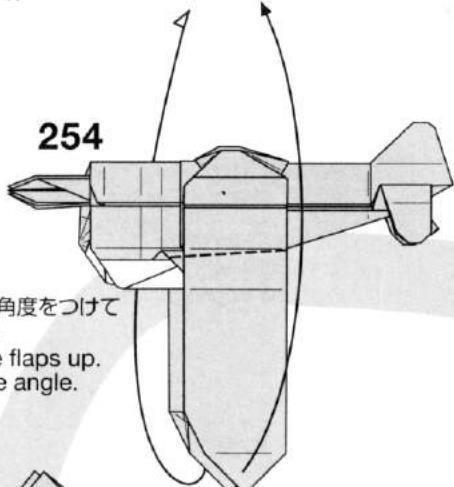
カドを下へ折る
Fold the flaps
down.

251



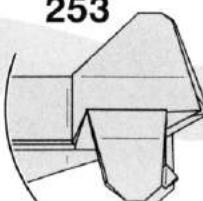
内側へ段折り
Crimp inside.

254

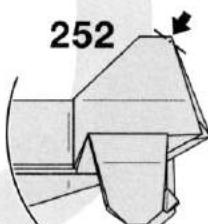


少しだけ角度をつけて
上へ折る
Fold the flaps up.
Note the angle.

253

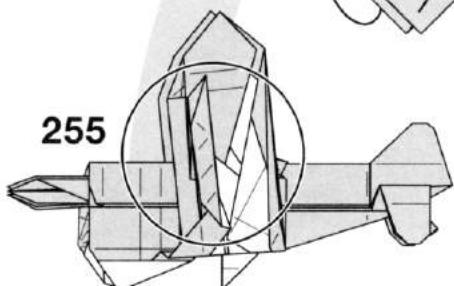


252

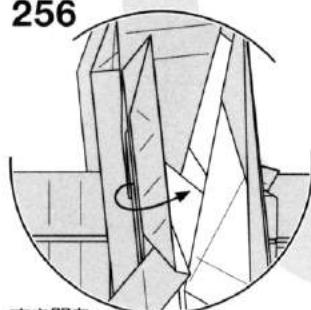


カドを少し
押し込む
Sink the tip.

255

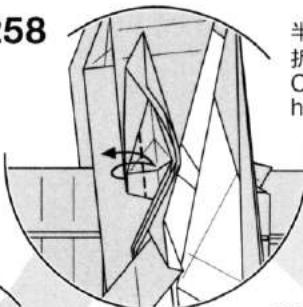


256



すき間を
ひろげて内側を見る
Fold the layers to the
other side.

258



半分の幅で
折り筋をつける
Crease at the
half of the width.

257



■の部分をひろげて
つぶすように折る
Spread sink the
darkened area.

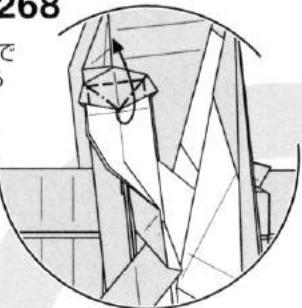
259



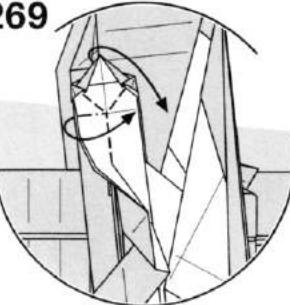
沈め折り
(上の浅いカドはClosed
下のカドはOpen Sink)
Sink (closed above,
open below).

268

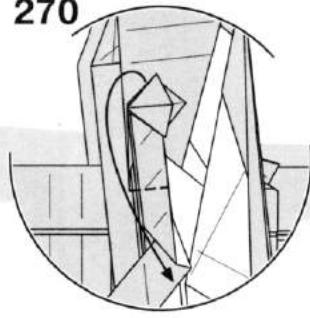
ついている折り筋で
カドを細くしながら
上へ折る
平らにはならない
A sort of petal
fold using the
crease.
The model will
not lie flat.



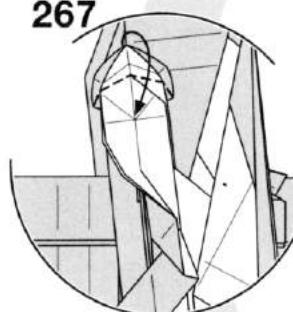
269



270



267

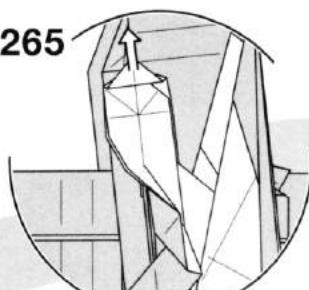


かぶせるように
折りたたむ
Squash the top
portion.

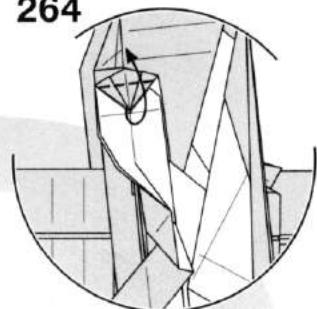
つまむようにして
平らに折りたたむ
Rabbit-ear fold
and flatten.

カドを下へ折る
Fold the flap
down.

265



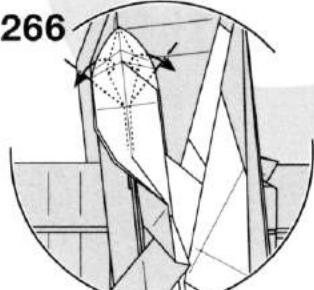
264



軽くひろげる
Open the layer.

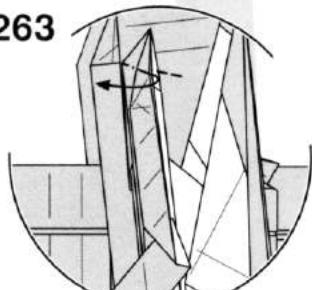
カドを上へ折る
Fold the corner up.

266



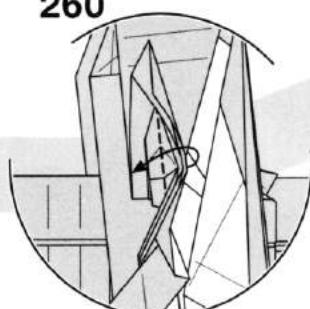
後ろのフチをついている
折り筋でひろげるようすに折る
Open the layers behind.

263



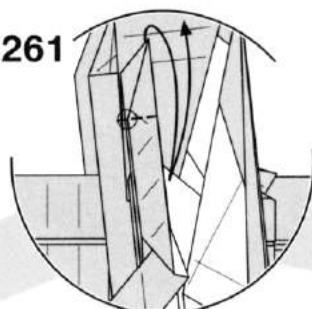
すき間をひろげて
つぶすように折る
Open and squash.

260



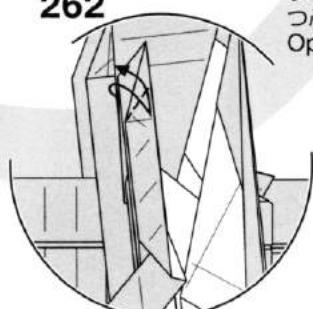
閉じる
Close the layer.

261

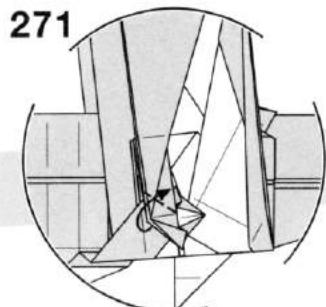


○の点から
折り筋をつける
Fold starting from
the circled point
and unfold.

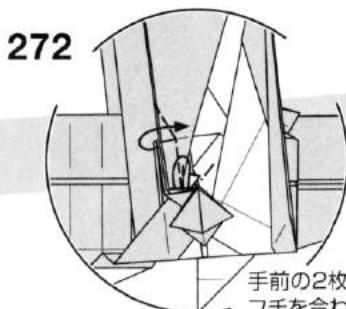
262



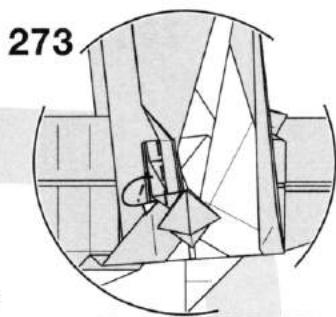
フチを折り筋に合わせて
折り筋をつける
Fold the edge to the
crease and unfold.



カドの先を出すように
折り返す
Fold up and show
the tip.



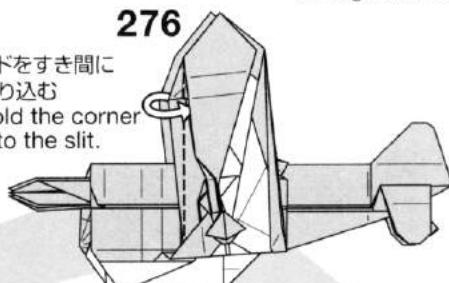
手前の2枚をフチと
フチを合わせて
引き寄せるように折る
Fold two layers edge
to edge and swivel.



残りのフチを後ろへ折る
Fold the other edges
behind.

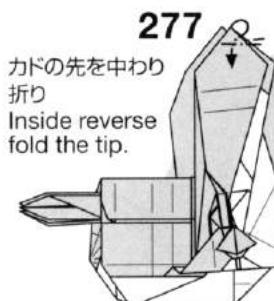
276

カドをすき間に
折り込む
Fold the corner
into the slit.



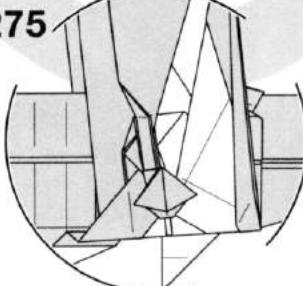
274

カドの先を少し折る
Fold the tip behind.

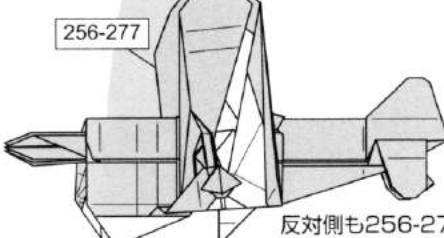


カドの先を中わり
折り
Inside reverse
fold the tip.

275

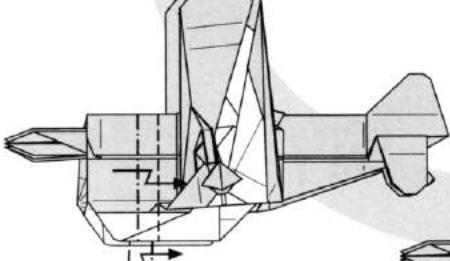


278



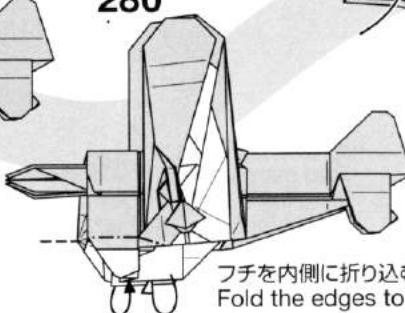
反対側も256-277と
同じように折る
Repeat 256-277
behind.

279



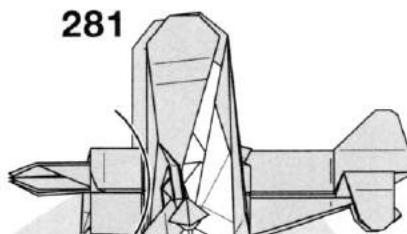
ついている折り筋で段折り
Crimp along the creases.

280

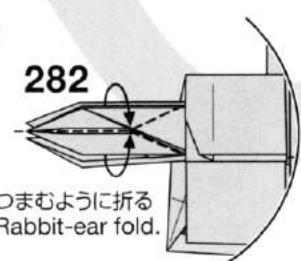


フチを内側に折り込む
Fold the edges to inside.

281

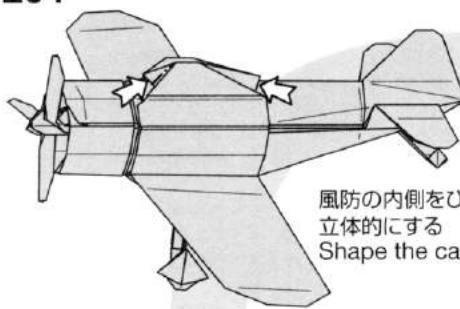


282

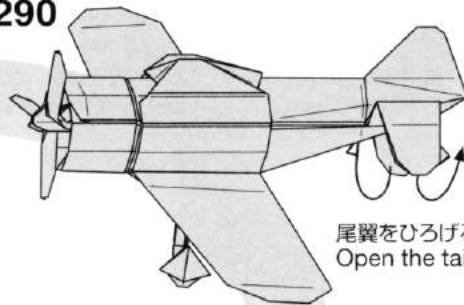


つまむように折る
Rabbit-ear fold.

291



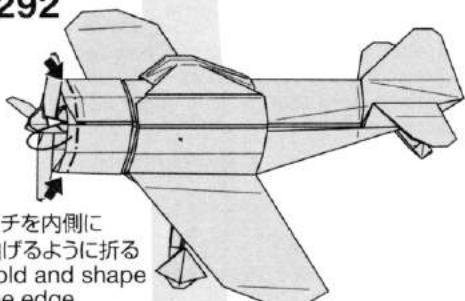
290



風防の内側をひろげて
立体的にする
Shape the canopy.

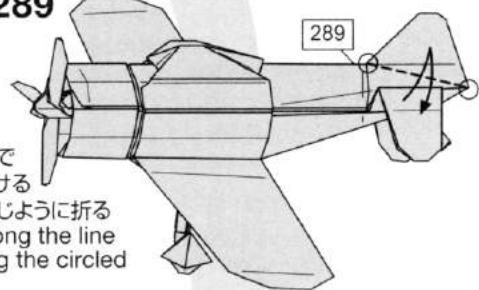
尾翼をひろげる
Open the tailplane.

292



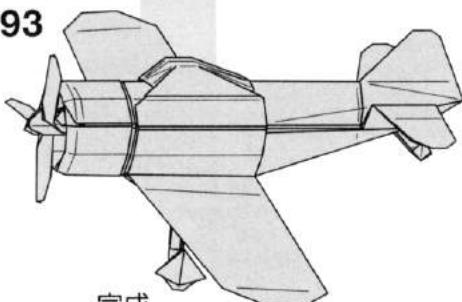
フチを内側に
曲げるように折る
Fold and shape
the edge.

289



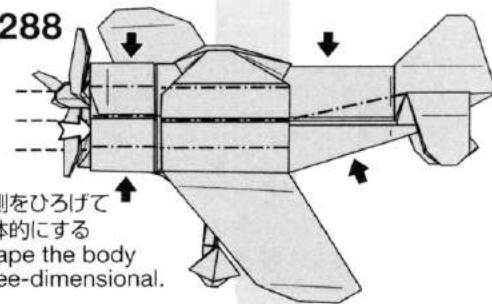
○を結ぶ線で
折り筋をつける
反対側も同じように折る
Crease along the line
connecting the circled
points.
Repeat behind.

293



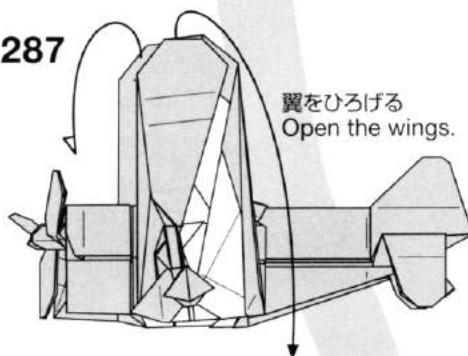
完成
Model completed.

288



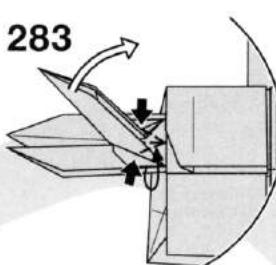
内側をひろげて
立体的にする
Shape the body
three-dimensional.

287



翼をひろげる
Open the wings.

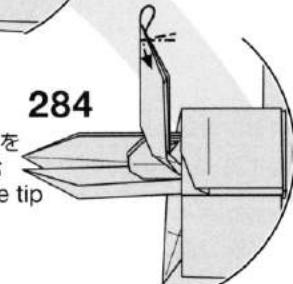
283



カドの付け根を
つまんで斜めに
折る
Pinch and narrow
the root of the flap
and raise the flap.

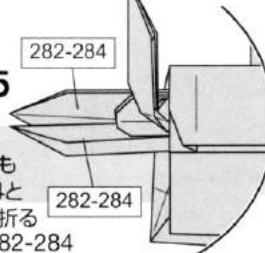
284

カドの先を
折り込む
Fold the tip
inside.

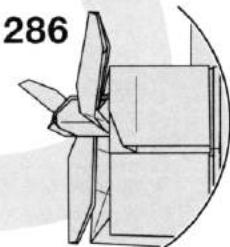


285

残りのカドも
282-284と
同じように折る
Repeat 282-284
on the other flaps.



286



紙と仕上げについて For Finer Completion of the Models

最後まで折れるようになったら、質感や厚みの違う紙を探して挑戦してみましょう。作品に適した紙質や厚みは、仕上がりの大きさやその人それぞれの折りの個性によって異なってきます。自分や作品に合った紙を探して取り組むのも、折り紙の楽しみ方の1つです。

仕上げの練習にはホイル紙(おりがみの金や銀など)も使いやすい紙の1つです。折った形が決まるので、複雑で厚みの出る作品に向いています。また先を細く折る形や、立体的な形を作るのにも適しています。

折り図で解説している工程の後に、仕上げ・アレンジを加えて作品は完成します。写真や完成図を参考に、使う紙に合った仕上げを工夫してみてください。

折り上がった作品は、そのまま放置しておくと、作品自身の重みや紙の反発などで形がくずれることがあります。作品を長期間飾ったり保存したい場合は、糊づけしたり、針金を入れるなどをして形を保つ工夫が必要です。

紙のお店 Paper Shop

作品に合った紙を使うことで、より魅力を引き出すことができます。大きな文具店や画材店、和紙専門店などで探してみましょう。ここではその一部を紹介します。

The model can be much more attractive using an appropriate sheet of paper. You can look for them at stationery and/or paper shops. The famous shops will be introduced in what follows:

◆株式会社竹尾 Takeo, Co.◆

洋紙販売を行っている会社。通信販売も行っている。Only sells western paper. They do have the web shop. 見本舗本店 The Takeo-Mihoncho Shop 東京都千代田区神田錦町3-18-3 3-18-3 Kanda-Nishiki-cho, Chiyoda-ku, Tokyo, Japan TEL:03-3292-3631 URL:<http://www.takeo.co.jp>

◆小津和紙博物館 Ozu Washi Hakubutsuho◆

老舗の和紙専門店。通信販売も行っている。An old and famous washi paper shop. They do sell on the web, too. 東京都中央区日本橋本町3-6-2

Once you are sure you can complete folding a model, try paper with different quality and/or thickness. Every folder has his/her own best paper, so you also have to find one. This is another aspect of paper folding, and you will enjoy this.

For practice, using foil sheets is a good idea. The foil allows for fine folding, so it fits complex models. The foil also allows for making round and/or opened figures.

The pictures in this book are only examples of the final models. You can arrange the models as you like.

The model will eventually get out of shape, due to the strength and thickness of the paper. If you want to display your model long and retain its shape, use glue, wire or any other tools to strengthen it.

3-6-2 Nihonbashi-Hon-cho, Chuo-ku, Tokyo, Japan
TEL:03-3662-1184
URL:<http://www.ozuwashi.net>

◆紙凧 紙友館ますたけ The Paper Shop Masutake◆

静岡にある和紙専門店。千代紙や和紙小物の扱いも豊富。A washi shop in Shizuoka. They also have rich inventories of chyo-gami sheets and goods made of washi.
静岡県静岡市葵区吳服町1-3-6
1-3-6 Gofuku-cho, Aoi-ku, Shizuoka-shi, Shizuoka, Japan
TEL:054-254-4541
URL:<http://masutake.com>

◆紙の温度 Kami no Ondo◆

名古屋市にある紙の専門店。通信販売も行っている。A paper shop in Nagoya. Also sells online.
愛知県名古屋市熱田区神宮2-11-26
2-11-26 Jingū, Atsuta-ku, Nagoya-shi, Aichi, Japan
TEL:052-671-2110
URL:<http://www.kaminoondo.co.jp>

ギャラリーおりがみはうすのご案内

1989年にオープンした日本で最初の折り紙作品専門展示場です。どなたでもご自由に見学頂けます。
住所／東京都文京区白山 1-33-8-216 TEL／03-5684-6040
営業時間／月～金 12:00～15:00 土日祝 10:00～18:00
ホームページ = <http://www.origamihouse.jp/> e-mail = info@origamihouse.jp

神谷哲史折り紙作品集 3

2019年06月15日発行 Printed in Japan

著者 神谷哲史 ©Satoshi Kamiya 2019

編者 山口 真

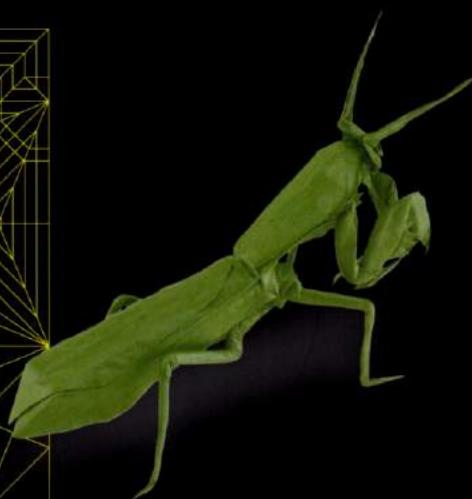
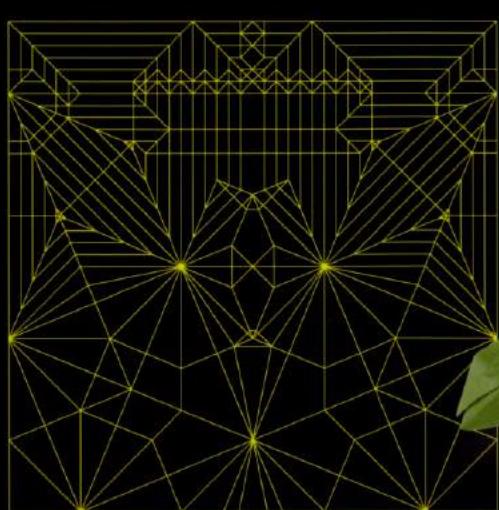
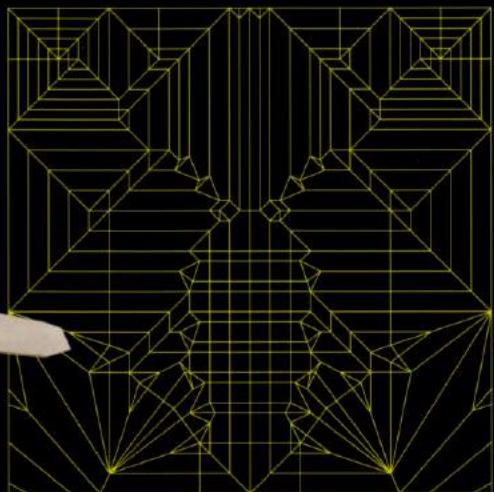
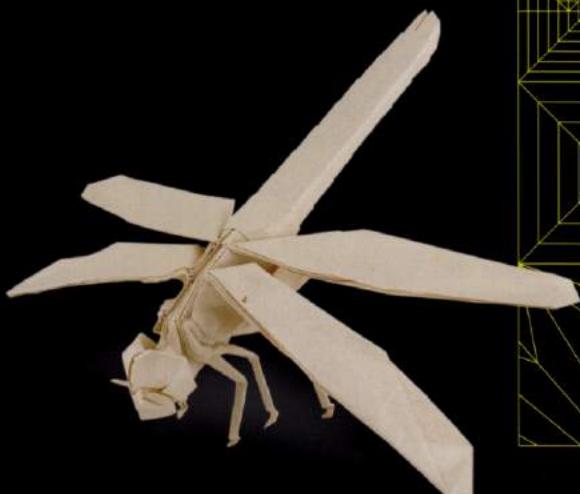
発行者 山口 真

発行所 おりがみはうす 〒113-0001 東京都文京区白山1-33-8-216
Tel : 03-5684-6040 Fax : 03-5684-6080

■作品制作・折り図=神谷哲史 ■編集=山口 真 ■翻訳=立石浩一 ■デザイン・写真=おりがみはうす

• Origami Works of Satoshi Kamiya 3 / Published on 15 June, 2019 by ORIGAMI HOUSE, 1-33-8-216 Hakusan Bunkyo-ku 113-0001 Tokyo JAPAN / Model Design and Diagrams : Satoshi Kamiya / Publisher : Makoto Yamaguchi / Editor : Makoto Yamaguchi / Translator : Koichi Tateishi / Editorial Design : ORIGAMI HOUSE / Photograph : ORIGAMI HOUSE

本書の内容の一部あるいは全部を、無断でコピー、データファイル化することは、法律に基づいて例外を除き禁じられています。



Origami Works of Satoshi KAMIYA 3

神谷哲史折り紙作品集3

Model Design & Diagrams by Satoshi Kamiya
Editor : Makoto Yamaguchi Translator : Koichi Tateishi