INTRODUCTION

Origami, paper-folding, can be enjoyed by children and adults alike. The forms I introduce in this book derive from basic patterns transmitted in Japan for perhaps a thousand years.

As a traditional art, origami has permeated deeply into everyday life in Japan and helped form the versatility and creativity so many Japanese possess. I hope and expect that origami will occupy a niche in the lives of future generations of non-Japanese as well as Japanese.

Is there a child who will not sit entranced as his mother's hands move swiftly, strangely, to create an elephant, a rose, a spaceship, or other favorite animal or object? Kindergarten teachers recognize that children feel a strange attraction toward origami and make origami zoos and botany gardens filled with paper animals and flowers. The paper creations not only help initiate a happy dialogue between children and teachers but also decorate the kindergarten rooms.

To practice origami requires only paper and a little time. Whether devotee or novice, therefore, one may enjoy the origami art in every conceivable situation. While travelling, origami is ideal for passing time alone or sharing pleasant moments with companions. Some people fold origami while commuting.

People are especially delighted when presented an origami work created before their eyes. The traveller who takes origami techniques home from Japan carries one of the finest possible souvenirs, and an art that is close to all Japanese hearts.
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(Bold numbers indicate color plates; other numbers indicate pages showing paper-folding sequences.)
Gorilla

The basic hat fold is used for gorilla, rocket and sombrero.

① Basic hat fold.

② Turn over ①.

③ Pleat the legs and fold inward.

④ Fold to make arms and hands.

⑤ Rear half

⑥ Front half

Camel

Three sheets of paper necessary!

① Basic camel fold.

② Fold ① in half.

③ Turn over ②.

④ Fold ③ in half.

⑤ Make neck with narrow part.

⑥ Fold both sides to center, then open to form triangles as shown.

⑦ To make head, fold end of neck and then fold back top.

⑧ Join front and rear halves.
The baby kangaroo requires paper one-quarter the size of that needed for the grown kangaroo. Duo-colored paper was used for the jumping pony; (folding sequence on p. 101) rough textured paper was used for the kangaroo.

Try to make a double-humped camel. If you use slightly stiffer paper for the reindeer its antlers will not droop. Use your ingenuity to make a running reindeer.
Kangaroo

Same process for adult or baby kangaroo. Latter uses 1/4 size paper. Scissors used to form ears and front legs.

1. Same as camel.
2. Cut to make ears and front legs.
3. Same as camel.
4. Turn over 3.
5. Head tail and rear legs in usual kangaroo erect.

Begin with the basic crane fold. As with the camel, two sheets of paper are necessary.

Front half

1. Rear half
2. Fold 4 in half.
3. Narrow folds form legs.
4. Narrow folds form legs.
5. Make head with one pointed section of 4, make antlers with other.
6. Join two sections.
7. Form rear leg stakes. Head tail down.
8. Form antlers by cutting.

Reindeer
Horse

Pay close attention to leg angles when joining front and rear. Experiment with various leg stances.

(folding sequence on p.98)
Giraffe

1. Basic camel fold.
2. Make tail with narrow part.
3. Cut to make ears.
4. Make head with narrow part.
5. Open out 4. Cut and fold to make horns.
6. Fold in half lengthwise.
7. Turn over 6. Fold in half lengthwise.
8. Join front and rear.

Elephant

1. Basic camel fold.
2. Fold ears.
3. Decide body length, fold back rear portion.
4. Decide head size and trunk length.
5. Fold 4 in half lengthwise.
6. Pull until front legs line up.
7. Fold inward to make rear legs.
8. Adjust trunk and ears for various expressions.
Dinosaur
(folding sequence on p.103)
Snakes are easy to fold.
Practice having snake raise its head while coiled.
Goof sh

Carp

Boys' Day carp streamers can be made with this form. Other fish can also be made. Put some masu at one o' clock.
Origami aviary
The heads and legs of all birds are folded similarly. Compare your adult and young ravens closely. Great pleasure is gained when one creates lifelike animals from sheets of paper. It is a pleasure often forgotten in busy, modern life. Folding origami is refreshing and helps one to recall the simple joys that children experience. Origami also helps to develop creativity in children, and stimulates their interest in their surroundings.
Raven

A baby raven needs one-quarter the paper required for an adult raven. Attend closely to the shape of the raven’s body.

The crane fold is complicated, and an adhesive probably is necessary. In the illustrations, the standing crane is made of mitsumata paper while I used saum paper for the flamingo.
1. Open wings and fold in half lengthwise.
2. Fold along indicated.
3. Turn over 4 and fold as indicated.
4. Fold along dotted line.
5. Fold neck in half along dotted line. Bring legs together again.
6. Open bottom section outward.
7. Fold neck in direction of arrow.
8. Pull wings up as high as possible.
9. Open left portion (leg) and fold back along dotted lines. Open neck part and fold down.
10. Refer to insets to form head.
11. Open wings, and fold down.
12. Standing crane fold.
Java sparrow
I made this sparrow with thick, smooth tori-no-ko paper.
(folding sequence on p. 106)
As with parrot, working paper is in isosceles triangle shape. The easiest way to prepare the triangle is to cut a piece of square paper diagonally in half. The triangle shape can be used to experiment folding various shapes.
Bird in flight

With duo-colored paper, you can obtain color variations by folding one time from one side and the next time from the other side. (folding sequence on p. 109)
Be especially careful not to tear petals when folding Use soft paper.

**Camellia**

Use only slight pressure when folding to give the camellia edges their proper shape. More striking results achieved with duo-colored paper.

**Water lily**

Folding sequence on pg.
I used folkraft paper for the iris, Torinoko paper for the broad bellflower, and "starmine" paper for the lily. Paper used is monochrome, although I used a different color for each flower.
Hydrangea parts are pasted on a foundation about the size of a fist. The snail's head may give you some trouble.

Make many small flowers and fix them on branches to gain the best effect.
Hydrangea is an aggregate flower. Many towers set together make one hydrangea. The folds are complicated from step 7 so study the illustrations closely.
Butterfly

Caterpillar

Foliage plant

Use glossy paper.
Butterflies can be made very beautiful by carefully selecting colors. Try on your own to fold various butterflies.
Colorful varieties of kites depend on whether you fold from the front or the back. Try to alternate.
Jet plane

1. Cut a cross and lines across and 7
2. Cut a cross dotted line
3. Open right and left and press flat
4. Fold wing tips up.
5. Open, cut center and press flat
6. Fold on dotted line

Kite

1. Refer to fold for bird in flight p.109
2. Fold down to make eyes
3. Fold to make creases
4. Hold along creases as in base crane fold.
5. Cut from plane
I used folkcraft paper to make these. The paper may be purchased at department stores and folk-art shops.
Use paper with colorful patterns or wrapping paper.

Hanging ornaments
(folding sequence on p. 117)

The camellia provides the basic fold for the ornamental ball. If you intend to use this as a lampshade do not use flammable material.
Card case

Mat

Make numerous mats and join them together to form various shapes.
Bamboo boat

The bamboo boat can be a simple decoration or a mobile.

Small box

Lantern

The small lantern can be made using the cut-out method. For the folding sequence, please see page 116.
Use as hanging decoration or lamp shade. Do not use combustible materials next to lighted bulb.
The slightest variation in folding results in delicate shifts in the Noh stance. Experiment with your own variations. With the helmet, different colors give quite different effects. I used the same paper for the costume and the helmet.
Fold carefully. The shape changes with the slightest variation in the folding angle.
Use as colorful paper as available. Add crowns, fans, and other accessories to give realistic effect.
Girls' Day Doll

1. Fold triangle over to make two layers.
2. Fold triangle down to make a triangle.
3. Fold triangle up to make a triangle.
4. Fold triangle over to make a triangle.
5. Fold triangle to make a triangle.
6. Fold triangle to make a triangle.

7. Glue triangle to make a triangle.

8. Glue triangle to make a triangle.

9. Glue triangle to make a triangle.

10. Glue triangle to make a triangle.

11. Glue triangle to make a triangle.
Cowboy hat

Paper about two feet square will give you a hat large enough for an adult. Both these hats were made with "Texan" paper.

Sombrero
Cowboy hat

1. Fold top and side.
2. Fold top and side.
3. Fold top and side.
4. Fold top and side.
5. Fold top and side.
6. Fold top and side.

Sombrero

1. Fold top and side.
2. Fold top and side.
3. Fold top and side.
4. Fold top and side.
5. Fold top and side.
6. Fold top and side.
7. Fold top and side.
8. Fold top and side.
10. Fold top and side.

80  81
Female demon’s mask: Facial expression can be changed depending on individual taste.
Japanese paper (washi) is easier to work with. Pay close attention to eyes and mouth.

Old man's mask

1. Fold back part behind mouth to make therouch.
2. Round beard
3. Make nose
4. Pull out nose

Female demon's mask

5. Fold edges back halfway
6. Fold top layer of top section down as shown.
7. Turn over left side and pull horns out
8. Make mustache
9. Make nose fold to make edges near eyes and beard.
Buddha's mask   Golden ghost's mask

Folkcraft paper was used for these masks.

I have tried to make these approximate the genuine masks.

Mask for Chinese opera
Differently colored masks can be attained depending on which sides face forward.
The red and black mask uses two different colors folded back to back.

Experiment with Daruma's costume for different color effects and facial expression.
Red and black face

Daruma Two sheets of paper needed
Pigeons in flight

These pigeons in flight decorate a corner of the Livelihood Industry Pavilion at EXPO'70. Electricity is used to make them flap their wings as if they were flying. This kind of decoration is ideal for a child's room.
Pigeon in flight

1. Turn over and fold as shown.
2. Make head. Fold wings up over.
3. Turn over 1.
4. Fold 2 at center line.
5. Fold to center line to make crease.
6. Fold down triangle of forward flight.
7. Fold down to give appearance of forward flight.

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Horse

1. Begin with a down.
2. Fold top of front half making sure corner side is uppermost.
3. Fold top of right triangle down and fold again inside.
4. Fold legs making sure they are same length as front legs.
5. Join with front half.
6. Turn over 5.
7. Fold along dotted line 10.
8. 3. Open out 11 and press flat against right side.
9. Make sure both legs same length.
10. Turn over 5 and press flat again.
Turtle

1. Basic turtle fold
2. Fold along dotted line and open out to make head
3. Fold as shown making sure point is sharp
4. Fold one leg and crease
5. Fold one leg over
6. Fold over to make head
7. Fold one leg over to make head
8. Fold one leg over to make head
9. Fold one leg over to make head
10. Fold one leg over to make head

Jumping pony

1. Horse pony fold
2. Fold along dotted line and open out to make head
3. Open and make a U shape to make ears
4. Balance on front legs to give jumping appearance
Ray

1. Fold to form square
2. Fold right end to make head and left back again
3. Fold half again
4. Turn over 3 times right half and third half 1/6 in to center line

Dinosaur

1. Fold open section at bottom inside
2. Make sure legs are parallel
3. Hold as shown keeping top sharp
4. Make neck flat
5. Open flaps at side to form legs
6. Fold over 1 and hold both sides to center line
7. Cut as shown to make eyes

1. Fold open section at bottom inside
2. Make sure legs are parallel
3. Hold as shown keeping top sharp
Method of making Java sparrow's head

1. Fold along dotted line (from page 107).

Java sparrow

1. Basic crane fold

2. Open top and fold as shown.
Snail
Method of making head

Bird in flight

1. Fold inside to make step at bottom

2. Fold as shown and glue and flatten points to obtain

3.

5. Then lift section and fold head as shown
Make two, one with color side uppermost and other with plain side uppermost. Put one inside the other.
Crane-shaped receptacle

Rocket
Fold hands to front to form standing baby.

To make sitting baby

Form 30 of standing baby

Open top as shown

Turn over

Fold to make creases as shown

Begin with 3 of crawling baby and turn over.
Fox mask

1. Fold down along dotted lines.
2. Fold to make creases as shown.
3. Fold to make creases as shown.
4. Form nose.
5. Form nose.
6. Fold to make creases as shown.
7. Fold to make creases as shown.
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116. Fold to make creases as shown.
117. Fold to make creases as shown.
118. Fold to make creases as shown.
119. Fold to make creases as shown.
Basic forms

Countless figures can be made after memorizing origami's basic forms. The basic forms themselves, however, have various names and are approached differently depending on the school I call the forms "crane," "hat" and so forth, but they can be given different names. The basic forms have already been introduced in photographs, and the following pages show how to fold these forms. Some of the many shapes that can be made from the basic forms are listed below.

- From the basic crane fold: horse, elephant, cow, reindeer, monkey, bear, lion, cocker spaniel, standing crane, raven, Java sparrow, dragonfly, grasshopper, flamingo, female demon's mask, Buddha's mask, pharaoh's mask, praying man, others.
- From the basic hat fold: gorilla, sombrero, flower, frog, Tokyo Tower, starfish, sea turtle, others.
- From the basic camel fold: giraffe, rabbit, kangaroo, donkey, squirrel, sheep, reindeer, antelope, Dumbo the elephant, swan, parakeet, carp, crane-shaped receptacle, death mask, others.
- From the basic pony fold: jumping pony, lantern, hydrangea, mask for Chinese opera, others.

Lizards as well as dinosaurs can be made from the basic dinosaur fold, while rays and turtles come from the basic turtle fold. Birds in flight, jet planes and kites all derive from the same basic form. Goldfish and cowboy hats can also be made from the same basic fold. It is not difficult to discover new basic folds for use in many figures.

The folding sequences for the basic forms appear in a series of diagrams. The basic forms are explained in the following pages and not in the first part of this book. The reader should study the basic forms carefully in order to derive the maximum pleasure from origami.
Crane base (1)

1. Fold in half. Open out and fold along center line, pull out.
2. Fold in two. Fold again as shown.
3. Fold along dotted lines.
4. Fold in half.

Turn over and fold as in 2. Fold along center line, pull out.

Crane base (2)

1. Fold to make creases as in diagram.
2. Fold along dotted lines. Open out and fold along creases made in 5.
3. Fold in ten, fold again as shown.
4. Open out 3 as in diagram.
5. Turn over and fold as in 2. Fold along center line, pull out.
6. Open out and fold along creases made in 5.

7. Turn over 6 and repeat 4, 5, and 6.
8. Repeat on other side.

Do same as in 10 on other side.
Method of making pentagon

1. Fold along dotted lines.

2. Fold and make angles in ratio of 1:2.

3. Fold along dotted line on 3.

4. Fold back along dotted line on 3.

5. Open out as shown.

6. Turn over again and fold as before.

7. Camel base

8. Hat base
Turtle base

5) Fold along dotted lines in @ as shown.

6) Turn over @ Turn over @ Turn over @

Dinosaur base

4) Turn over 3 and fold to center line

5) Fold along dotted lines to make triangles

6) Fold back along dotted lines

7) Fold along dotted lines in 6

8) Turn over 7.
According to a noted American origami artist, there are five basic forms: bird, water bomb (Japanese playball), frog, diamond and fish. Opinions vary regarding the basic forms, and variations depend only on the individual's creative ability.

Paper folded with white side uppermost will have colored side uppermost when finished, and vice versa.

Creative Origami

Traditional and creative origami

Traditional origami is represented by the crane, yakko-san (servant) and a boat which changes its shape by manipulation. Children learn all these from their parents. But when a person puts new ideas to work and devises new forms he is working in creative origami.

In traditional origami the same result could always be obtained if there was a diagram to follow. In creative origami, however, different shapes are possible even when the same thing is made because the finished work bears the stamp of the folder's personality.

This is especially so in a mask. The folder's character and emotions appear to be delicately expressed in the work. It is strange that the size of the eyes and mouth and the length of the nose are never the same, and that every mask has a different expression. One characteristic of creative origami is that the individual's ability clearly marks his work.

Increase your observation

In order to make birds and animals with origami, you must know their shape, movements and habits, otherwise a dog will not look like a dog and a sparrow will not resemble a sparrow.

When you make a mask there is always a difference in the facial expression whether you know the mask's history and legend or not. When you make Noh and other masks from drama, you may lose half the enjoyment of folding if you do not know the drama and the particular character. For creative origami, too, you need an extensive general knowledge.
must keenly observe and study what he wants to make. The main points of creative origami are beauty and faithfulness to actual form.

Tools are not necessary

We use the words "carve" for sculpture and "paint" for painting but say "fold" for origami. We need instruments for the former two activities but none for the latter. Fingers are all one needs for origami, but they must be trained.

A sheet of paper contains unlimited "invisible" lines to fold from which we must choose the correct lines for making a desired shape. Whether the paper is folded correctly or not depends solely on the folder's skill.

Formative beauty in origami

There are certain points essential for bringing out the beauty in origami.

When we treat origami as an art, we need a delicate sensitivity even in the simplest folding action. Identical figures folded by different persons reflect the different personalities of the folders. Thus, it is important for the folder to strive for this sensitivity and to develop a sense for his material's qualities and color. One must choose the size, thickness, color and quality of paper that best fits what he intends to make.

It is not incorrect to use complicated methods when creating origami figures but it is better to use simple folding methods to obtain more realistic forms. I hope that everyone who attempts to create origami figures will observe certain principles, and study ways to express beauty in their work.

Principle of creative origami

A group I established for studying creative origami forbids the use of scissors on principle. Abiding by this rule creative origami's enjoyment becomes twofold. If you use scissors too freely, origami approaches too closely to *kirigami zaiku*, the art of cutting paper to make various shapes. Productions lack creativeness because of the short-cuts scissors introduce. This does not mean scissors should be ruled out completely. Primarily, however, they should be used solely to make incisions for gaining better effects. No part of the paper should be cut off. In classical origami scissors were used to make the thousand cranes, but only incisions were made.

Compound forms

Certain origami figures require more than one sheet of paper. Before you introduce scissors to obtain the real shape of what you are making, try using two or more sheets of paper to make different parts and then join them. When two or more parts are joined to make a figure it is called a compound form.

The grasshopper, with its raised forelegs, triangular face and wings, is once such form. It is impossible to make a grasshopper using one sheet of square paper, although it can be made from one sheet of triangular paper. In this book I demonstrated folding a grasshopper with two sheets of paper: one for the face, forelegs and wings; and the other for the remaining legs and the rear half of the body.

Some animals are made by folding the front and rear halves separately. A combination of a mask and a person requires three sheets of paper: one for the mask, another for the upper half of the body and the third for the lower half of the body.
With two sheets of paper you can make Buddhist images, Pan, the Japanese gods of wind and thunder or beautiful nudes.

**Invitation to creative origami**

I recommend that beginners memorize all the basic forms and study carefully how to develop the figure desired. One should observe in real life what one wants to make to grasp the correct shape and character. It is a good idea to study using a picture book or an art book.

Two or three questions would quickly test your power of observation. Do you know, for example, that a whale’s tail extends horizontally not vertically? Do you know a chimpanzee holds its arms up while an orang-utan lets them dangle? It is important to use your eyes all the time, and to sketch the shape of things in your mind. After mastering realism you can then make your work more symbolic and abstract. The classical origami crane has a formative beauty that is not merely a copy of a real crane.

Intensive research into the crane’s formative beauty determined that the classical fold was most fitting. The crane is origami’s greatest masterpiece and is readily understood by the present generation. Foreigners immediately associate the classical crane with origami.

When you do research into origami’s symbolization and abstraction, an acute creative sense and keen observation are helpful. In order to develop these senses, one should study art, sculptures and flower arrangements.

There are special difficulties in making masks. A mask should express joy or anger but will not if paper is only folded twenty or thirty times. When the sculptor makes a Noh mask he applies his whole heart and soul to his work. The origami artist must likewise apply himself to capture the delicate expression in an origami mask.

It is easy to enter the world of creative origami, but creativity is profound. I hope you enjoy this world and will contribute your own ideas to make it richer.
The educational value of creative origami

Children who merely copy how to fold origami do not reap any great educational benefit. It appears simple to make an origami figure using a sheet of paper and nothing else, but, on the contrary, it needs a highly creative sense.

Whereas painting needs a canvas and sculpture needs space, origami needs only a sheet of paper. In the sheet of paper, however, exist endless folding possibilities. To make origami forms one must have the insight to see the paper’s “invisible” lines in order to fold and produce something. Moreover, while other arts depend on brushes, paint, chisels and other tools or media, the fingers make all kinds of origami shapes and forms. Actually, the person who disagrees with the role origami can play in formative education probably lacks a true understanding of origami.

Problems exist, too, in teaching origami. Children taught established ways of folding origami, for example, adopt a passive attitude. Moreover, children who learn fast tend to feel superior when they quickly memorize a sequence while children who experience difficulty in folding paper correctly or following directions become depressed. Origami taught that way stifles creativity instead of nurturing it.

Children should learn how to fold paper correctly but should not be taught that only by folding in a certain way can such and such an animal or object be made. If the teaching method is correct, origami becomes a most convenient educational material.

Origami seems to be better understood today, and is used more often in kindergartens and nurseries. Teachers who use origami in kindergartens find the children so enthusiastic that they forget the time.

Children surprise themselves by making various shapes without cutting the paper. Their favorites are squirrels, penguins and elephants. Children see something magical in origami.

It is possible to make forms quickly, using many colors and without taking up much space. Children realize their dreams by producing many figures they can play with afterwards. Children tend to enjoy producing various figures when they realize they are creating “playmates.”