“Origami” is the Japanese word for paper folding. ORI means to fold and KAMI is the Japanese word for paper. Origami is thought to have originated in China but the art form quickly traveled to Japan and then on into almost every country and culture. It is a tradition that has been handed down from parent to child for many generations. Origami today involves the creation of paper forms entirely by folding, although sometimes scissor cutting is involved. Animals, birds, fish, geometric shapes, puppets, toys and masks are among the models that even very young children can learn to make in just one sitting.

The Origami in the Garden exhibit at the Tucson Botanical Gardens features 17 different displays of larger than life origami sculptures created by artists Kevin and Jennifer Box. In each case, the artists started off with the paper origami form, then used the techniques of lost wax casting and sheet metal fabrication to create the sculptures. The sculptures represent folded versions of horses, cranes, birds, plus other animals and geometric shapes. The folded crane is represented in 6 of the sculptures in the exhibit. It is an origami form with great meaning since it has traditionally represented life, harmony and peace.

Origami is not just an art form these days. Folding and unfolding forms are used in science, technology, packaging, and even sports. The Oru Kayak is made from a lightweight, flexible material that can fold, origami-wise, into a rectangle to fit into a shoulder bag! Engineers at NASA are exploring origami forms to create a spacecraft that could be folded into a rocket and then opened once in space. Origami has come a long way!
Before Your Class Visit:

In order to prepare your students for the exhibit, have them practice a few of the origami designs on the following pages. Once they have manipulated paper themselves, they will have a better appreciation of the intricate details and “folds” in the sculptures.

You may also want to read aloud or have students read a book about origami such as Sadako and the Thousand Paper Cranes by Eleanor Coerr or The Paper Crane by Molly Bang.

Sadako and the Thousand Paper Cranes is about a Japanese girl who develops leukemia after WWII. She is familiar with the legend that whoever folds 1,000 paper cranes in one year will be granted a wish. She, her family and friends dedicate themselves to folding the cranes. When Sadako becomes sicker and eventually dies her family continues to create the cranes to fulfill her wish for peace.

The Paper Crane is a beautiful book suitable for younger children. It tells the Japanese folktale about an origami crane that magically comes alive and touches the lives of all the families in the close knit community.
Origami in the Garden

1. Cut out the square at the bottom of the page

2. Fold along the dotted line, right side down

3. Fold in half the other diagonal and open

4. Fold down corners to make ears

5. Fold up the bottom point to make the nose
1. Cut out the square at the bottom of the page
2. Fold along the dotted line right side down
3. Fold in half the other diagonal and open
4. Turn the triangle over and fold up corners to make ears
5. Fold down the top point to make the head flat on top
6. Turn over to see your kitty face.
7. If you want, fold back the sides of the face, as in the drawing.
Origami in the Garden

1. Fold in half
2. Fold in half again
3. Fold in corners
4. Fold up edges on both sides
5. Pull the sides out and flatten
6. Fold front and back layers up
7. Pull sides apart and flatten
8. Pull top flaps outwards
9. Squish the bottom and pull the sides up
10. Ta Daaa!
Origami in the Garden

Crane

1. Turn over and repeat steps 3 and 4

2.

3.

4.

5. Turn over and repeat steps 3 and 4

6.

7. Turn and repeat steps 7-11

8.

9. Press here

10.

11.

12. Turn over and repeat step 12

13.

14.

15.

16.
During Your Visit:

At the gardens, help students use the scavenger hunt to visually connect the metal sculpture to the correct origami paper form. Have students read aloud the information at each sculpture or read from the pages given in this package.

You may also decide to have students answer the questions during the visit or after you return to the classroom.

Older students may enjoy trying to imagine how the paper could be folded to replicate the figures in the sculptures. Use the last 2 pages of this resource once students have returned to school to reinforce the learning at the Gardens.

Exhibit Sculptures include:

1. **Conversation Peace** – Like the game “Paper, Rock, Scissors”, this piece is meant to inspire conversation.

2. **Crane Unfolding** – Children will be able to see the folds that a paper crane leaves when unfolded. Even the wrinkled paper has a beauty of its own.

3. **Duo** – In nature, cranes mate for life. This sculpture represents that commitment.

4. **Emerging Peace** – A butterfly’s life cycle is illustrated in this sculpture from an egg on the leaf to caterpillar to chrysalis and then to the emerging butterfly.
5. **Flying Peace** – This work is based on an origami folded by Robert Lang. It is considered to be the most complicated crane ever folded from an uncut paper square.

6. **Folding Planes** – This sculpture shows the 7 folds needed to make a flying paper airplane from a flat piece of paper.

7. **Hero’s Horse** – A myth tells of a winged horse that came to help a hero then flew away into the heavens, unfolding into the stars of the constellation Pegasus.

8. **Nesting Pair** – These two cranes are creating their nest using olive branches, symbols of the peace and harmony needed in a successful family.

9. **Painted Ponies** – This sculpture is an example of kirigami, a folded paper art form that allows the use of cutting. Traditionally, origami involves only uncut paper.

10. **Paper Navigator** – A traditionally folded paper boat is depicted in this work.
11. **Master Peace** – An Asian tradition states that if you fold 1,000 paper cranes in one year, you will be granted a wish. This sculpture is a portion of a master work that did include 1,000 cranes as a wish for peace.

![Master Peace](image1)

12. **Seed Sower** – This squirrel represents the relationship between trees and squirrels. Trees provide food and shelter, and squirrels help pollinate trees and spread the resulting seeds.

![Seed Sower](image2)

13. **Botanical Peace** and
14. **Blooming Stars** – These standing cranes have been hand painted to represent the diversity of designs found in origami paper.

![Botanical Peace and Blooming Stars](image3)

15. **Unfolding Star** – This is an abstract self-portrait of the artist illustrating that there is usually much more beneath the surface of a person than can be seen on the outside.

![Unfolding Star](image4)

16. **White Bison** – This is based on an origami using just a single piece of paper that was white on one side and silver on the other. The bison is a symbol of peace to many Native Americans.

![White Bison](image5)

17. **Who Saw Who?** – A raptor spies a mouse who looks back in return. Who saw who first?
<table>
<thead>
<tr>
<th>Origami in the Garden²</th>
<th>Scavenger Hunt!</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Origami Crane" /></td>
<td><img src="image2.png" alt="Paper Plane" /></td>
</tr>
<tr>
<td><img src="image3.png" alt="Leaf" /></td>
<td><img src="image4.png" alt="Butterfly" /></td>
</tr>
<tr>
<td><img src="image5.png" alt="Bird" /></td>
<td><img src="image6.png" alt="Grid" /></td>
</tr>
<tr>
<td><img src="image7.png" alt="Scissors" /></td>
<td><img src="image8.png" alt="Origami Bird" /></td>
</tr>
<tr>
<td><img src="image9.png" alt="Green Crane" /></td>
<td><img src="image10.png" alt="Orange Rabbit" /></td>
</tr>
<tr>
<td><img src="image11.png" alt="Origami Horse" /></td>
<td><img src="image12.png" alt="Origami Buffalo" /></td>
</tr>
<tr>
<td><img src="image13.png" alt="Origami Crane" /></td>
<td><img src="image14.png" alt="Origami Ship" /></td>
</tr>
<tr>
<td><img src="image15.png" alt="Origami Rat" /></td>
<td><img src="image16.png" alt="Origami Horse" /></td>
</tr>
</tbody>
</table>
Origami in the Garden

1. What were the sculptures made of? ________________________________

2. What were they made to LOOK like? ______________________________

3. How many origami cranes were in the exhibit? _____________________

4. What does an origami crane symbolize to many people? ______________

5. The metal butterfly was shown just coming out of a __________________

6. "Flying Peace" is a very complicated folded piece – how many pieces of paper made the original origami? ________________________________

7. Was the sculptural "paper" airplane folded in a way that you typically fold a plane? _______________
   Explain:

8. If you could make one of the origami figures represented by the sculptures, which one would you make? ________________________________
   Why did you pick that one?
After Your Visit:

Ask your students to think about the sculptures that they saw. Here are some possible questions:

1. What steps do you think the artist took in order to make the airplane sculpture?
2. Some of the sculptures had “paper” with the fold lines visible. The artist likes the fold lines. Unfold an origami and look at the fold lines. Why do you think the artist thinks that they are attractive?
3. Imagine you have a very large piece of paper. Do you think it would be easier or harder to fold a large origami animal from this paper?
4. The artist emphasized peace and harmony and the relationships between plants and animals. Which sculpture do you think spoke to you most about peace and harmony?
5. How long would it take to make 1,000 paper cranes if it took 2 minutes to fold one? Put your answer in hours/days
6. Do you think you could design your own origami? Try folding a piece of paper to make a design. If it helps you may cut your paper.

If your students would like to continue paper folding, the following pages feature not only origami but other paper folding and cutting activities.
Origami in the Garden

Name ___________________________

Q: What do you get if you cross a fish with an elephant? A: Swimming Trunks!

Q: Why are frogs so happy? A: They eat whatever bugs them!

Q: When do monkeys fall from the sky? A: During a polar shower!

Q: Why is the letter A like a flower? A: A bee (B) comes after it!

Q: Can February March? A: No, but April May!

Q: What flowers grow on people's faces? A: Tulips (two lips)

Q: What did the big flower say to the little flower? A: You're really growing, bud!

Q: What goes up when the rain comes down? A: An umbrella

Origami Directions:
1. Fold the paper in half along the middle crease.
2. Open it up and fold each corner to the middle crease.
3. Fold the paper in half along the middle crease again.
4. Open it up and fold each corner to the middle crease.
5. Flip the paper over to the other side and repeat steps 2 and 3.
6. Cut along the creases, but do not cut all the way through.
7. Unfold the paper to create the origami fortune teller.

Flowers:
- Marigold
- Poppies
- Lupine
- Prickly Pear
Origami in the Garden²

Toothy Corner Bookmark

Directions:
1. Gather scissors, a glue stick, and crayons or markers.
2. Cut out Toothy along the solid lines.
3. Find the triangle with the stars on it.
4. Fold it away from you along the dotted line.
5. Put a little bit of glue on the stars.
6. Find the triangle with Toothy’s face on it.
7. Fold it away from you along the dotted line.
8. Press on Toothy so that he sticks to the glue.
9. Color Toothy’s face.
10. Now you have a corner bookmark!
Origami in the Garden

Name ___________________________

This cup can hold snacks or water, even if made of paper!
Origami “Jumping Frog” Template for Leap Day

Print this cute frog pattern for a simple origami activity to mark Leap Day (or to do anytime).

Steps to make Leap Day origami “jumping frog”

1. Cut out frog rectangle on the dotted line.
2. Turn the paper over so the printed side is down.
3. Make the diagonal folds shown in this diagram, opening back up after each diagonal fold.
4. Turn the printed side back up. Make the horizontal fold by bringing the lower edge up even with the top of the triangle head. Crease, then open back up flat. Your paper will now have creases where the dotted lines are.
5. Fold the front legs forward (legs begin at blue dot).
6. Next, fold the sides of the body in to the center. Repeat body then leg fold on other side.
7. Press down on the back of the head (over legs) to make the frog “leap.”