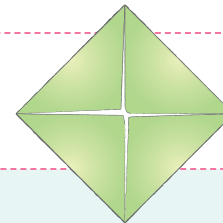


LESSON 2: BLINTZ BASE



Activities

Activity 1: Fold a Blintz Base

Activity 2: Simple Picture Frame

Activity 3: Multiform - Lantern, Shirt, Pants, Camera

Models for this lesson:

Blintz Base, Picture Frame, Multiform creating a Chinese Lantern, Shirt, Pants, and Camera

Materials needed:

Square paper - ideally 8 inches or larger, especially for the Multiform

Targeted grade levels:

Kindergarten, 1st- 6th grades

Math Concepts:

Shape, symmetry, counting, pattern, division, fractions, midpoint, congruence

NCTM Standards:

1. Recognize and describe the attributes of length, area, angles, and shapes;
2. Investigate and predict the results of putting together and taking apart two and three-dimensional shapes;
3. Explore similarity and congruence;
4. Sort and classify objects according to their attributes and organize data about the objects;
5. Understand that measurements are approximations and how difference in units affects precision.

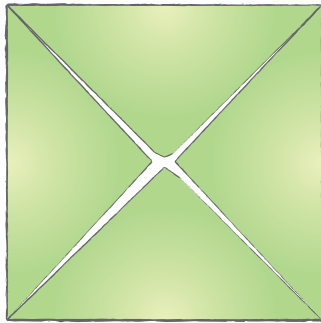
Math Vocabulary:

Triangle, midpoint, intersection, diagonal, angle, altitude, similar, congruent, line of symmetry, trapezoid, perpendicular

Teaching Tips and Techniques:

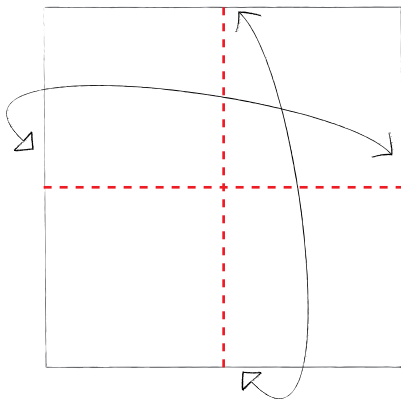
- Practice folding the model. You should be familiar and comfortable with all the steps before teaching others
- Think of the math concepts you want to include in the lesson. Ask questions about shapes, area, and numbers, as appropriate, with each step of the model.
- Keep your words consistent.
- Have students learn in clusters. Remind them that in origami looking at your neighbor's paper is good.

ACTIVITY 1 - Fold a Blintz Base

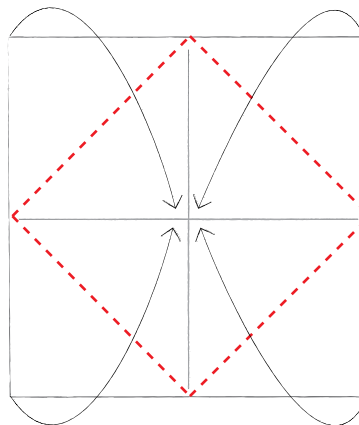


1. This step is often referred to as a book fold. What did the crease do to the square? What kinds of rectangles were formed? 2:1
2. Where is the intersection of the two lines? Is this the midpoint of both lines? Can you get to this stage if step 1 was a diagonal fold? Yes, the point of intersection would be the same.

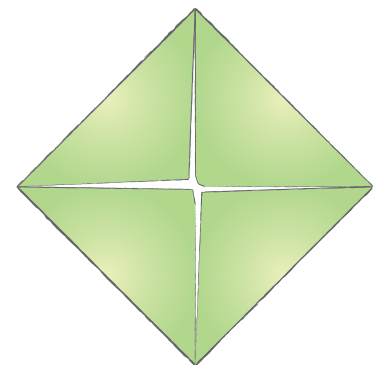
BLINTZ BASE *Traditional*



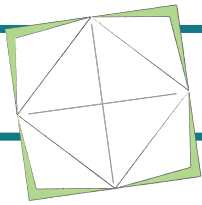
1 Start with white side up. Fold in half and unfold. Fold in half the other way and unfold.



2 Fold each corner point into the center.



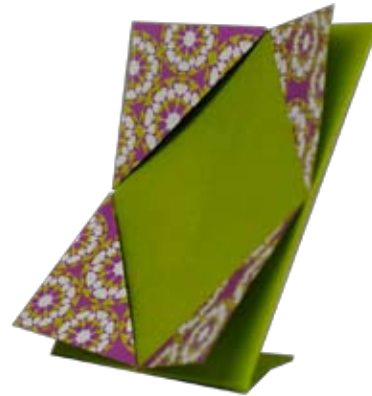
Finished Blintz Base!



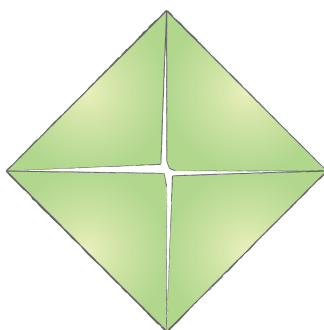
ACTIVITY 2 - Simple Picture Frame

PICTURE FRAME

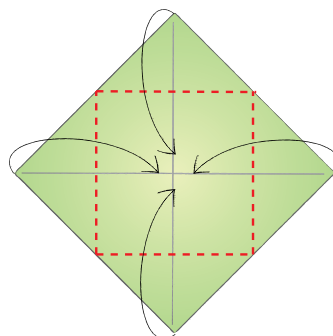
1. Start with a Blintz Base. You can refer back to the diagram.
2. After you form the second Blintz, have students unfold the paper. Find the trapezoids, hexagons, isosceles triangles, 45-degree angles, and 90-degree angles. Have students draw around the shapes.
- 3-4. Have the students refold the double Blintz and continue to finish the model. Try a variation by not folding the points all the way to the outer corners but leaving a gap. What does this change do to the area of the center of the frame?



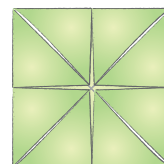
PICTURE FRAME *Traditional*



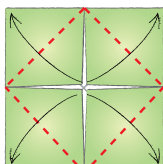
1 Start with the Blintz Base. Turn over.



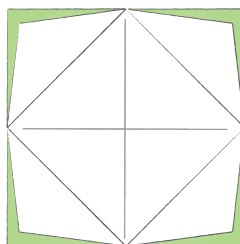
2 Fold each corner point into the center.



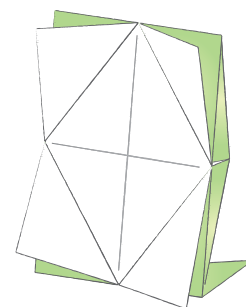
3 Turn over.



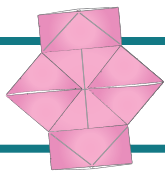
4 Fold each inner point out to the corner.



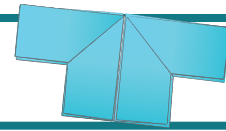
Finished Picture Frame!



Side view



ACTIVITY 3 - *Multiform*



MULTIFORMS

Multiforms are models that change with the addition of one or two steps. Each builds upon the previously folded model. You will need to begin each one with the Blintz Base. In this lesson first fold the Chinese Lantern. Then fold another Lantern that you will turn into a Shirt. Fold another Lantern so you can make the Pants. Fold another pair of Pants to make the final model, the Camera.



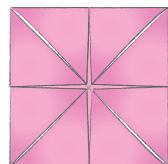
CHINESE LANTERN

- 1-2. You begin with step 3 of the Picture Frame. How many blintz moves (bringing the corners into the center) have you made? Two. Now you blintz again. How many blintz moves does that make? Three.
3. What shape is this? What shapes do you see within the square? How many different shapes do you see? How many of each?

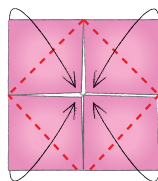
SHIRT

1. Start with a Chinese Lantern. You can either use the one you just folded or fold a second one. Is it easier to fold the second time? Why?
2. Is the model symmetrical before you fold it in half? Does it matter in which direction you fold it in half? Try both ways. Is it the same?

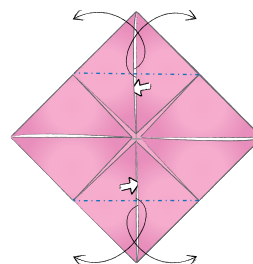
CHINESE LANTERN *Traditional*



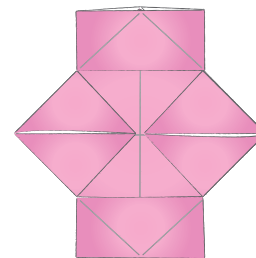
1 Begin with step 3 of the Picture Frame. Turn over.



2 Fold corners to center. Turn Over.

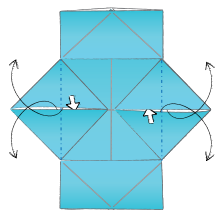


3 Pull open the top triangle and flatten, repeat on the bottom triangle.

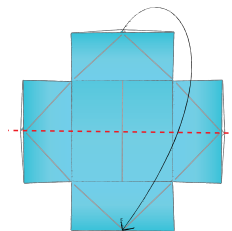


Finished Chinese Lantern!

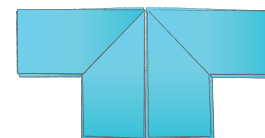
SHIRT *Traditional*



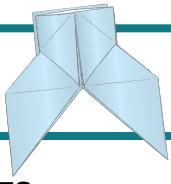
1 Start with a Lantern. Open the side triangles and flatten them (as you did for the top and bottom triangles when you made the Lantern).



2 Fold the model in half from top to bottom.



Finished Shirt!



ACTIVITY 3 - *Multiform (cont.)*



PANTS

1. Start with a Chinese Lantern. If you made the Shirt, you can unfold it back to the Chinese Lantern or fold a new Chinese Lantern.
2. Remind students that it is usually best to fold on a hard surface like a desk. For this step you must lift up your model. If students are having difficulty pulling out the sides in this step, have them turn the model over and identify the blintz. If they pull on the corners (now on the other side) they will see that they are unfolding one blintz layer that then goes to the inside of the model.
3. Can you fold this model in half both ways to make the Pants as you could the Shirt? No. Do you see different kinds of triangles?

CAMERA

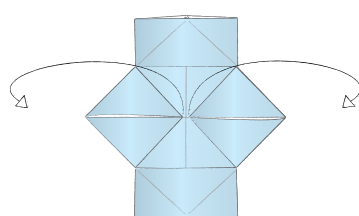
1. Start with the Pants. As for the other models in this Multiform, you can start with the Pants you just made or make a new pair.
2. Is the model symmetrical? What shapes can you find - do you see the rectangles and triangles?
3. It might be easier for some to hold the model in the air while performing this step. Is the model still flat or has it assumed a 3-dimensional shape?
4. Unfold the model completely and explore the various shapes and areas. See the addition of smaller triangles becoming larger triangles and trapezoids and squares. How many triangles did it take to make these shapes?

Extending the lesson and other activities:

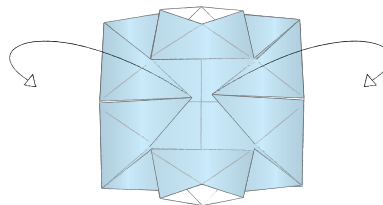
Multiforms are great opportunities for the children write a story as a group with the teacher or to write their own stories based on the models. Use the models to fire their imaginations.

The word Blintz is derived from another language. Have the children think of other words we use everyday that come from other languages and cultures.

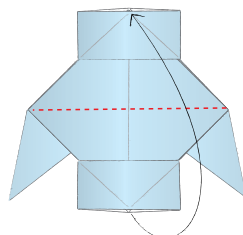
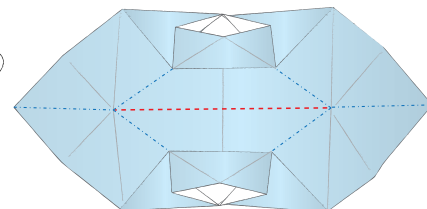
PANTS *Traditional*



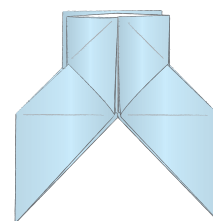
1 Start with a Lantern. Holding the model in the air, grasp the inside corner of the two squares and gently lift up to pull the model open.



2 Keep pulling the corners until the model pops into a new position. No new folds!

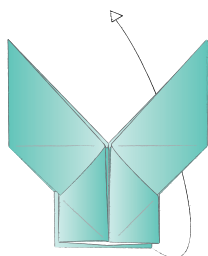


3 Fold the model in half so the two rectangles from the lantern meet at the top.

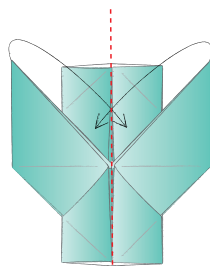


Finished Pants!

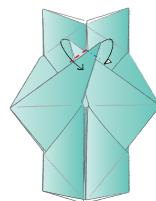
CAMERA *Traditional*



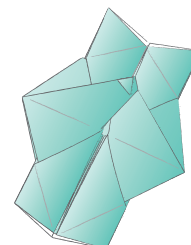
1 Start with a Pants model with the legs facing up. Pull the bottom layer of the Pants up from behind.



2 Stand the flaps (Pants legs) upright. Start folding the model in half lengthwise until the two flaps cross over each other.



3 Fold the tips down (one to the front, one to the back) so the flaps are locked together.



4 Finished Traditional Camera! To operate your camera, have the flaps facing away from you and push with your thumb on the back of the camera. You will hear a "pop" and the flaps will open.

If your camera doesn't work, make sure the tips you folded down in step 3 are not too large. You can put a picture inside the model under the flaps to "capture" your shot.