

Twisted Beads



With its eye-catching shape, this elongated little bead can serve as a spacer for other, more elaborate beads or hold its own as a full partner. Each bead is made from one-fourth sheet of metal clay for the twist, with tiny balls of lump clay at top and bottom.



Materials & Supplies

Basic supply kit, page 16
Additional supplies kit, page 17
Supplies for oxidizing, page 24

FOR THE BEAD

2-inch (5 cm) length of very straight, 20-gauge brass or copper wire, or a pin stem from a 3-piece pin finding
Low-fire lump metal clay
Large plastic straw
Metal clay slip

FOR THE BRACELET

Open-link chain bracelet
2-inch (5 cm) 18-gauge head pin for each bead
Additional beads as desired

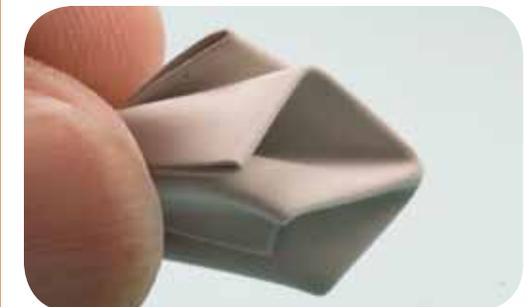
1. Begin by folding a Preliminary Base (see page 11).



2. Place the base with the open end facing you, and fold the right side of each flap to the center.



3. Pick up the folded piece by the tips at the open end, holding them together. Grasp the closed end in your other hand and, making sure the flaps go around in the same direction, twist in the direction of the flaps with one hand and the opposite way with the other.



4. Set the piece on the work surface and allow it to relax a little.



5. Push down on the tip of the folded end, to provide a bit of a flat surface.



6. Make a hole in this flat spot with a needle tool.

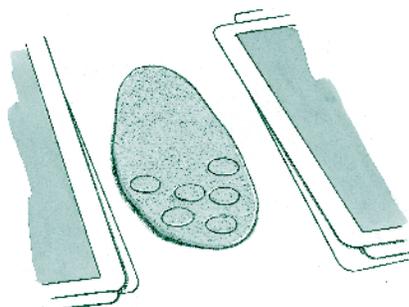


7. Fire the bead on the kiln shelf.

8. Coat the pin stem or brass wire with olive oil, and run it through the center of the fired bead, to open the hole and support the construction of the bead.



9. Roll out a small lump of metal clay three playing cards thick, and use the large straw to cut disks of clay.



10. Grease your fingers and palms with olive oil, and roll these disks into little balls. Make two balls for each bead.

11. Thread a ball onto the oiled pin, add the twist, and add another ball. Brush a little slip on the joints between the balls and the twist.



12. Leave the bead on the pin to fire, to keep the holes open and lined up with each other. The metal clay won't stick to the pin or the wire, because the pure silver is a different metal. Be sure to allow the lump clay to dry before firing.

13. Remove the pin after firing, then polish and patina the bead as desired.

14. To assemble the bracelet, thread a head pin through the bead, loop the pin through a link in the bracelet, and wrap it around itself. Add the remaining beads (or stack of beads) in the same way.

TIP: Since I planned to combine Twisted Beads with hematite beads, I wanted a shiny, antique gray finish that would complement the hematite. To achieve that, I left the beads in a liver of sulfur solution until they were uniformly black, then rubbed the patina off the higher areas with fine pumice powder. After tumbling, the beads' brilliant luster matched the hematite almost exactly.



pieces, lending an organic feel to the straight folds. Because metal clay sheet is made without water, the individual layers of the folded piece will remain separate after firing, allowing minor adjustments to be made.

Fired metal clay sheet is a thin 26-gauge fine silver that has little strength. When selecting a project, try to choose an origami design that folds back over itself, and don't leave any protruding single layers unsupported. Since the metal clay sheet is pure silver once fired, fragile areas can be reinforced using lump metal clay or traditional metalworking techniques. You can attach a fired piece of clay sheet to a heavier piece of metal by soldering or using cold connections.

Supplies You'll Need

For the beginner projects in this book, you'll be using metal clay sheet and sterling silver wire with ready-made findings. I used the 2 $\frac{3}{8}$ -inch-square (6 cm) PMC sheet for the projects in this book; however, there is a rectangular size (1 $\frac{1}{8}$ x 4 $\frac{3}{4}$ inches [2.6 x 12 cm]) that is good for projects that use quarter sheets.

NOTE: Unless otherwise specified, the projects in this book use one metal clay sheet. Projects that call for half or quarter sheets require you to cut a full sheet to the desired size. For easy cutting, leave the sheet in its plastic packaging, and use a metal ruler and utility knife to cut through both the plastic and the sheet.



Basic Supply Kit

Besides your metal clay sheet, for any project in this book make sure you have the items on the following list.



Smooth, hard surface of nonstick silicone

Needle tool

Metal ruler

Utility knife

Kiln or butane torch

I can't overemphasize the importance of a smooth, hard work surface. This surface is your first folding tool. A sheet of smooth, nonstick silicone that can be cleaned between projects is good to cover your workspace. Any lint or grit on the work surface will be picked up in the metal sheet, leaving impressions on the unfired metal clay. When the clay shrinks during firing, those imperfections will really stand out.

TIP: If you work on a plastic or acrylic sheet, you can slide the piece off the sheet onto the kiln shelf later, without disturbing it.

The needle tool is a blunt needle on a wooden handle. It's useful for when your fingers won't fit into a tiny space. You'll need a utility knife and a metal ruler to ensure straight, accurate cuts.

Additional Supplies Kit

The advanced projects will incorporate PMC+ in lump, slip, and syringe form as well as fine silver wire. In addition to the tools listed for the beginner projects, you'll need the tools listed below.



Reusable flexible nonstick sheet

Olive oil or olive-oil-based hand balm

Fine paintbrush

Distilled water

Rubber-tipped shaper

Salon file (fine)

Cotton swab

Wire cutters

Chain-nose pliers

Round-nose pliers

Round needle file

Cup warmer (optional)

Attaching Findings, Other Types of Metal Clay, & Embellishments

After you have some experience working with folding metal clay sheet, you may choose to attach lump clay to the unfired origami piece. Items you may decide to attach include wire for beads, stones wrapped in metal clay, or a formed metal clay bail. All added metal clay will have to dry thoroughly before firing, but the metal clay sheet does not.

Lump Metal Clay

Metal clay in lump form can be joined to metal clay sheet before the sheet is fired or after, with an additional firing. This lets the individual with no metal working experience make complicated multistep pieces. Developed before metal clay sheet, lump clay looks and performs much like a piece of potter's clay—it can be molded, carved, and stamped.

I can't stress enough that when using water to glue lump clay to sheet, use very little, as the unfired sheet will dissolve if it gets too wet. Because of that fact, I like to fire the metal clay sheet and then add clay and details in a second firing.

ATTACHING TO UNFIRED SHEET

The lump metal clays that work best with sheet clay are the low-fire Art Clay 650, PMC+, and PMC3. These metal clays also come in slip and syringe forms that can help you produce an innovative piece of origami jewelry.

To keep the damp metal clay from sticking to you or your work surface, put some olive oil or a balm that contains olive oil on your hands and, if you don't have a nonstick sheet, a little on your work surface. When using metal clay in lump form, pinch off only as much as you'll need for the project. Keep the rest from drying out by returning it to the resealable package. Place the folded sheet on a nonstick surface so it won't need to be moved before the added lump clay is dry; this will avoid tearing or loosening the join.

Achieving a Spectrum of Finish Colors

For some spontaneous fun, you can use liver of sulfur to finish your pieces in a variety of colors. You'll need two jars: one for the LOS solution and one for cold, clean water. The cold water will halt the color change, allowing you to inspect the piece to see if it's reached the color you want. It's important to throw out the clean water when it begins to look milky. Since heat speeds up the color changing process, you may choose to start with warm water, place your liver of sulfur solution on a cup warmer, or warm up the piece you wish to color.

To achieve an array of colors varying from yellow to red to blue, tumble your piece to a very high shine before dipping it into the LOS. Then, gripping the piece with stainless-steel tweezers, dip it in the LOS for a few seconds and then into the cold water to halt the color change. The piece will turn yellow, then proceed to a pale red, and finally to blue.



For even more variation, try adding ammonia (one tablespoon per cup of LOS solution) to the LOS solution to create an iridescent effect. Although it's hard to control the colors achieved with this method, unexpected results can add to the creative fun.



Another way to have varied colors on the same piece is to hold the tumbled piece in the LOS until it turns a uniform yellow. Rinse and dry the piece, and paint warm LOS on the areas where you want more color. After you see the color you like, let your piece sit in cold water that has had a little baking soda added to it. Rinse the piece thoroughly with soapy water.



Your desired color must be stabilized or the silver piece will carry on the natural process of oxidation and continue to turn darker. Spray the piece with an acrylic fixative—the kind artists use to seal their charcoal drawings. The satin finish spray seals the silver and keeps air out, thus halting the oxidation process.

Supplies for Oxidizing with Liver of Sulfur

Liver of sulfur

Water

2 glass containers (custard cups or glass jars work nicely)

Plastic spoon

Stainless-steel tweezers

Ammonia (optional)

Soapy water

Paper towels

Baking soda

Pumice powder

Acrylic fixative

PRELIMINARY BASE

This is a series of four folds that are the beginning to many origami models. It's called the Preliminary Base in origami because other more advanced bases can be developed from it.

1. Begin with a perfect square.
2. Crease and unfold one diagonal.



3. Fold the opened square in half toward you, forming a rectangle.

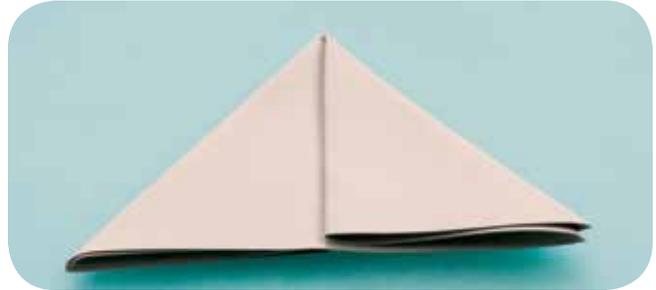


4. Bring the right corner over along the diagonal crease line so the right outside edge rests along the lower outside edge.



5. Repeat this step in reverse on the left side, folding the left top corner along the diagonal crease line on the backside of the rectangle.

6. The triangle that is formed has the long open edges facing you, and the top 90° angle is away from you.



7. Place your thumbs in the pocket at the open edge and, holding the 45° angles, bring these together forming a diamond with the top enclosed and the bottom open.



TIP: When making the crease guideline folds, make sure the edges and corners line up before pressing the crease line. Always press the clay with your fingers—don't score the creases like you would with paper by using a fingernail or a folding tool. These might tear the clay sheet. Let the work surface be a tool for holding the clay sheet, and fold against it.

The one action that might be tricky is the last step when bringing the two outside angles to the center and turning the folded piece one-half turn to make a diamond with a smooth, flat, unbroken surface.

