

intermediate

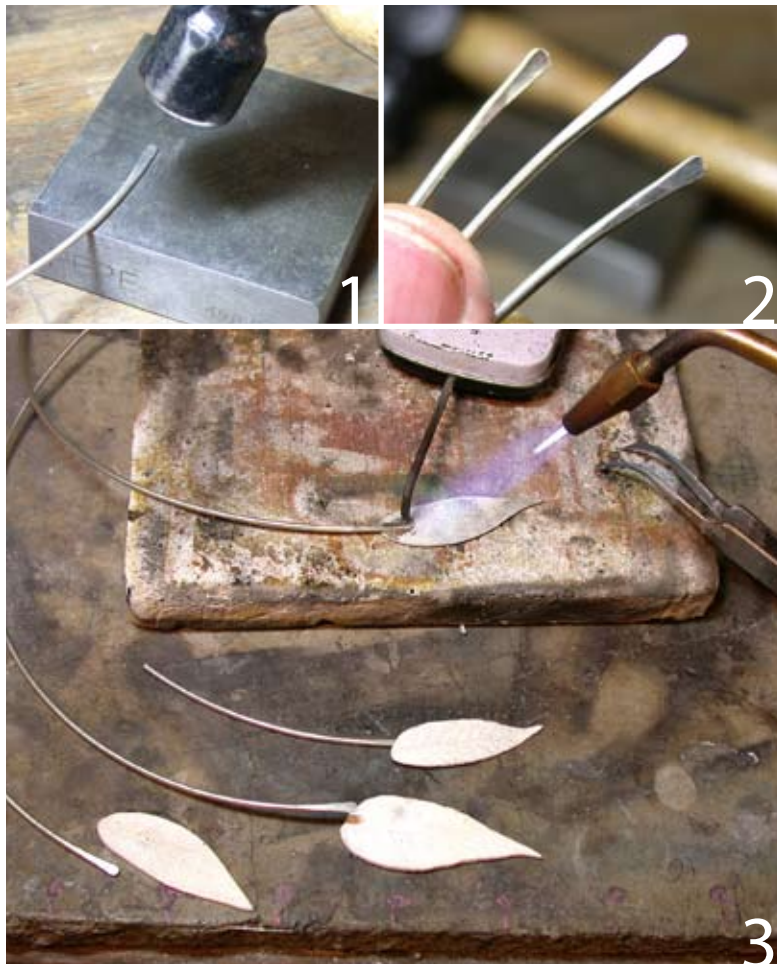
metal

Swirling Leaf Necklace

*Use keum-boo to
enrich a handmade,
asymmetrical collar.*

by Noël Yovovich

Inspired by ancient “torques,” rigid collars that open in the front, this delicate, contemporary necklace has come a long way from its heavy, classical roots. While most necklaces hang evenly, this one sweeps asymmetrically, culminating in a single leaf on one side and a spray of three leaves on the other. Donning and removing the necklace is simple because of the almost-invisible friction clasp.



Prepare the wire. The necklace is made from four curved 14-gauge (1.6mm) sterling silver wires. Curve the wire evenly before cutting it into separate pieces by bending it around a coffee can or other round object with an approximate 7-in. (17.8cm) diameter. If your wire is already coiled, adjust the diameter of the coil to approximately 7 in. (17.8cm). Cut the curved wire into four pieces, one in each of the following lengths: 3 in. (76mm), 4½ in. (11.4cm), 8 in. (20.3cm), and 10 in. (25.4cm).

Flatten the wire ends. Using a planishing hammer and an anvil, flatten one end of each piece of wire into a spatula shape [1]. This provides a broader area at the end of each wire for soldering the leaves [2].

Cut out the leaves. On a piece of paper, draw four stylized leaves ranging from 1¼–1¾ in. (32–44mm) long. Cut out the leaf drawings and use a glue stick to adhere the drawings to 20-gauge (0.8mm) sterling silver sheet. Saw out the leaves using a jeweler's saw with 2/0 blades. File and sand the edges of each leaf smooth. Alternatively, capture vein detail by coating actual leaves with metal clay; see "Make Metal Clay Leaves," right. (Editor's Note: Dried leaf skeletons found at craft stores can be roll-printed onto silver sheet to achieve a similar effect.)

Solder the leaves. Flux a leaf and the flattened end of the 8-in. (20.3cm) wire, and solder the join using hard solder [3]. Repeat with the remaining leaves, attaching them so they point opposite the leaf

make metal clay leaves

For the kind of detail and realism that only Mother Nature can provide, make the leaves by using metal clay paste and real leaves. Look for leaves with strong, clearly visible veins on the underside. Rose leaves work well, and they're available year-round.

Use one of the low-fire metal clay pastes to make it easier to solder the wires to the sintered metal clay leaves. Burnish the backs of the sintered leaves where you will be soldering the wire. This reduces the porosity of the sintered metal clay and helps the solder stay on the surface to make the join.

Coat a leaf. Use a syringe to extrude metal clay slip onto the back of a leaf [a]. Use a wet brush to spread the slip so that it completely coats the leaf [b]. Allow the slip to dry completely. Apply a second layer, spreading it to the edges with the brush, and allow it to dry completely. Repeat to add another layer or until you reach the desired thickness. When the last layer is completely dry, smooth the clay and carefully tidy the edges with an abrasive pad. For a metal clay dryness chart go to artjewelrymag.com/art/objects/pdf/drynessscale.pdf

Fire the leaf. At this state of dryness, the leaf will usually peel off. If it is stuck, it will burn off in the kiln. Fire the leaf according to the metal clay manufacturer's instructions.

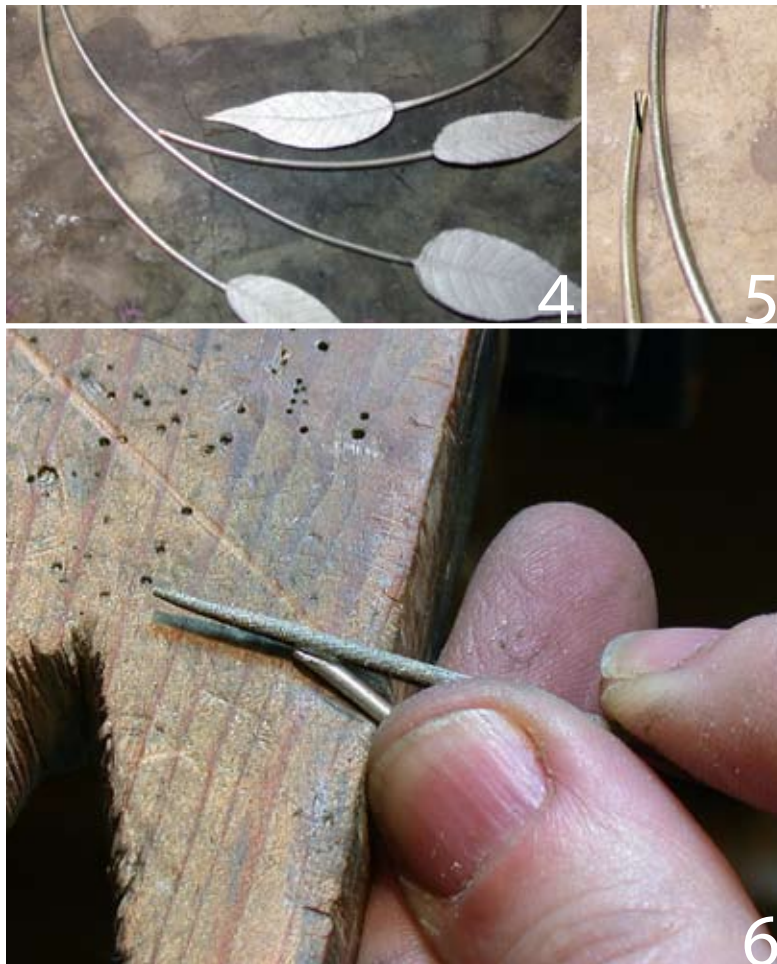
materials

- Metal clay syringe

tools & supplies

- Paintbrush
- Abrasive pad
- Kiln, kiln shelf
- Burnisher





on the 8-in. (20.3cm) wire.

The picture shows the curved silver wire being held in place with a homemade soldering weight. To learn how to make a soldering weight, see “Need a Hand?” *right*. Soldering on sintered metal clay can be difficult; see “Make Metal Clay Leaves” for helpful hints.

Because the wires will be heated twice, once at each end, you may be tempted to use lower-melting-temperature solders for each of the joins in this necklace. Note that easy solder will remain visible and will tarnish, while higher-temperature solders will blend better and tarnish slower. Quench, pickle, and rinse each piece after each solder.

Assemble the leaf spray. Arrange the wires in the way that you’ll attach them [4]. Use a permanent marker to mark each wire end with

the angle needed for it to join smoothly [5]. File each wire end to the correct angle with a large, flat file. To make a tighter join, file the wire end again with a round needle file [6], creating a groove along the length of the wire end. Flux all the parts, place pallions of medium solder on the joins [7], and heat until the solder flows. Quench, pickle, and rinse each piece after each solder.

Attach the clasp. Use a premade, curved, sterling silver friction clasp. Friction between the necklace wires and the tubing of the clasp will securely fasten the necklace.

Place the clasp on the end of one necklace wire. Put the necklace on by sliding the end of the other necklace wire into the clasp, and then adjust the curve of the wires. The measurements given for this

need a hand?

While soldering, you can’t hold the pieces of metal together with your fingers. You need a soldering weight. They are easy to make and very handy.

Start with an empty rectangular tin like the ones mints come in. In one sidewall, punch or drill a small hole large enough to fit a piece of steel wire. A piece of wire coat hanger (preferably unpainted) will do the job. Bend the wire into a zigzag shape that fits flat inside the tin, and then thread about 2 in. (51mm) of the wire through the hole. The zigzag bends will keep the wire from turning when you use the weight. Fill the tin with something heavy — rusty tumbling shot, BBs, lead sinkers, nuts and bolts, whatever you have on hand. Close the lid, and wrap the tin with binding wire to keep it closed.

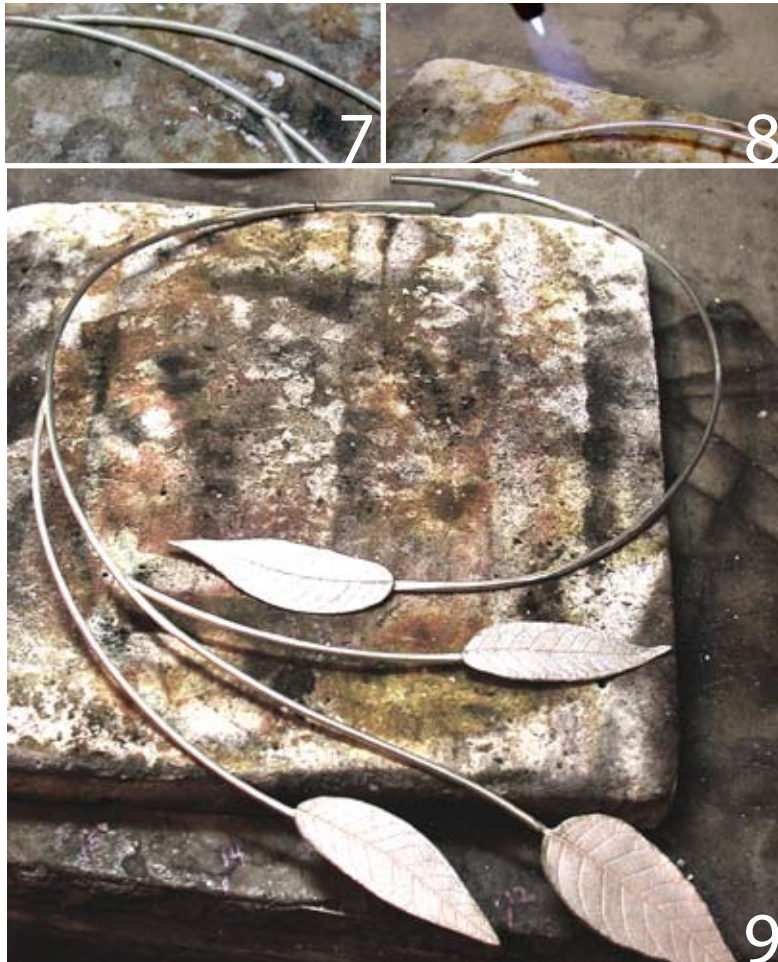
Sand the tip of the protruding wire to a dull point, and bend the last ½ in. (13mm) at a right angle. Rest the pointed tip of the wire on any object that needs to be held in place during soldering. The steel wire will draw heat away from your soldering operation, so be prepared to compensate by making adjustments to the heat of your torch.

materials

- Rectangular tin
- Steel unpainted coat hanger
- Miscellaneous heavy filling: steel shot, BBs, lead sinkers, nuts, bolts, etc.
- Binding wire

tools & supplies

- Punch or drill
- Pliers: flatnose
- Sandpaper



project will make an approximately 7-in. (17.8cm)-diameter necklace. Adjust the fit, if necessary, by trimming the end of each necklace wire. When you are satisfied with the fit, apply flux, and solder the clasp to one necklace wire using medium solder [8]. Quench, pickle, and rinse the piece.

(Editor's Note: You can make an inexpensive friction clasp by cutting a 2-in. [51mm] piece of silver tubing that has a 1.6mm inside diameter. [The inside diameter of the tubing should match the outside diameter of the wire.] Gently bend the tubing with your fingers, curving it to match the curve of the necklace.)

Polish the necklace. Lightly sand the necklace with 600-grit sandpaper, and hand buff it as needed. Wash the necklace with a degreasing cleaner, such as dish soap [9].

Prepare the leaves. When using keum-boo on sterling silver, the sterling must undergo a process of repeated heating and pickling called "bringing up the fine silver" or "depletion plating."

Without using flux, heat the silver with a torch until it oxidizes (shows black discoloration), and then soak the silver in pickle to remove the oxidation. Repeat until no oxidation appears on the silver when it is heated. This indicates that the copper has been depleted from the surface of the sterling, leaving a layer of fine silver.

Cut the gold foil. See "Keum-boo: What You Need to Know," right, before you begin. Lay tracing paper over each leaf, and draw the shape of the area you want to cover with gold [10]. Sandwich the gold foil between the tracing paper and



keum-boo: what you need to know

Keum-boo is an ancient Asian technique for inexpensively adding high-karat gold to silver. Basically, you use a burnisher to adhere gold foil to hot silver.

Use keum-boo foil, because gold leaf is too thin for this technique. Avoid touching the gold foil with your fingers; skin oils will contaminate the surface and prevent the foil from adhering properly.

To apply the gold foil, you'll need clean, fine-tip tweezers, a hotplate, and at least one burnisher. You can use an agate or hematite (stone) burnisher or a steel burnisher. Keep in mind that gold foil can adhere to a hot tool just as easily as it sticks to hot silver. This is less of a problem with a stone burnisher, but you can't quench a stone burnisher because rapid cooling can break it. You may need to have a few on hand to switch when one gets too hot. A steel burnisher is good because it can be quenched.

No matter which burnisher you choose, it's better to have more than one so you can manipulate the gold foil with both hands or switch tools quickly if one gets too hot.




Process photos by Noël Yovovich.

another sheet of paper, and cut out the desired shape with scissors [11].

Attach the gold. Use fine-tip tweezers to lay one of the gold shapes onto a leaf, and set the leaf on a hotplate set to high. Use a burnisher to hold the gold foil in position until it begins to stick [12]. Then firmly burnish the gold foil in place, working from the center of the foil outward. Press the burnisher into all the recessed areas [13]. Repeat with each leaf.

If the gold tears, or if there are areas that need additional gold, repeat the process, overlapping pieces of gold foil if necessary. The multiple layers will appear as one layer after burnishing.

Apply a black patina. After the necklace is cool, use a paintbrush to carefully apply a black patina to

the outer edges of the leaves [14]. The gold will not turn black, but it may turn orange if the patina gets on it. Rub the gold with a polishing cloth to remove any unwanted patina. Use fine sandpaper or steel wool to remove unwanted patina from the silver. 

materials

- Sterling silver wire: 14-gauge (1.6mm), round, half-hard, 25½ in. (64.8cm)
- Sterling silver sheet: 20-gauge (0.8mm), half-hard, 2 x 6 in. (51 x 152mm)
- Sterling silver curved friction clasp
- Sterling silver tubing: 1.6mm inside diameter, 2 in. (51mm) (optional)
- Keum-boo foil: 24k gold

tools & supplies

- Wire cutters
- Hammer: planishing
- Anvil
- Glue stick
- Jeweler's saw, 2/0 blades
- Files: flat hand, round needle
- Sandpaper
- Dried leaf skeletons (optional)
- Rolling mill (optional)
- Soldering station: torch, solder (hard, medium, easy), fire-resistant surface (soldering pad, firebrick, or charcoal block) pickle pot with pickle, flux, steel tweezers, copper tongs
- Permanent marker
- Tweezers: fine tip
- Burnisher: steel or stone
- Degreasing (dish) soap
- Hotplate
- Tracing paper
- Paintbrush: round tip
- Black patina
- Polishing cloth
- Steel wool (optional)

suppliers

- Sterling silver wire (Rio Grande, riogrande.com)
- Sterling silver friction clasp (Rio Grande item #690-459, riogrande.com)
- Keum-boo foil, agate burnisher (Allcraft, 800.645.7124, allcraftonline.com)
- Metal clay paste (Precious Metal Clay, pmcguild.com for a list of suppliers, Art Clay World, artclayworld.com)

Noël Yovovich makes jewelry and jewelry-related sculpture, teaches metalsmithing, and writes about jewelry making from her home in Evanston, Illinois. When she is in the mood for a change of scene, she loves traveling to teach or to take a workshop. You may contact her via e-mail at noelyovovich-aj@yahoo.com.



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