

# Knitting with Glass

## KNITTING WASN'T YET "COOL"

when I was a kid. My grandmothers both knitted, but other knitters were few and far between. I distinctly remember entering a yarn shop at the age of eleven and being mesmerized by the circle of women knitting socks in a round on four tiny needles. I had to learn. Patterns, knitters, and fine yarns were hard to come by. *Paton's*, *Pingouin*, *Vogue Knitting*, and later *Threads* magazine, along with knitting authors Barbara Walker and Deborah Newton, were my guides as I taught myself. But without an interest in fashion and clothing design, knitting wasn't a vocation, it was clearly a hobby.

Fast forward many years . . . I'm now a sculptor working in cast glass and metal. One day I was adding sprues to a wax piece I was going to cast in bronze. I had lots of delicious-looking strands of red sprue wax (this is a fairly soft dimensional wax that comes in two-foot lengths) lying around my studio and I thought, "I wonder if I can knit with that?" It turns out I couldn't knit it with needles, but the question started me down a road of trial and error and experimentation until I figured out how to make it work.

The basic process I use is the ancient art of lost-wax casting used by foundry workers, jewelers, and sculptors.

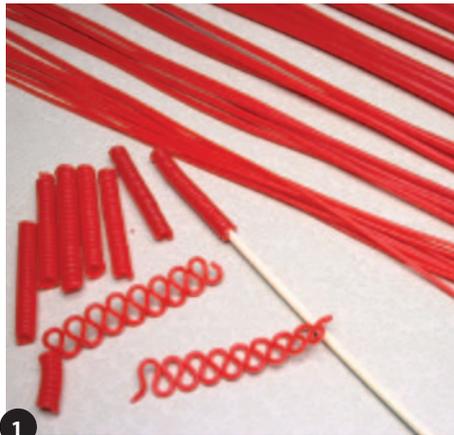
A. I knit something in wax.

B. I surround the wax with a heat-tolerant refractory or investment material.

C. The wax is melted out, leaving a shell of investment around the space that was the wax object.

D. The mold is placed in a kiln, and glass is melted into the empty space.

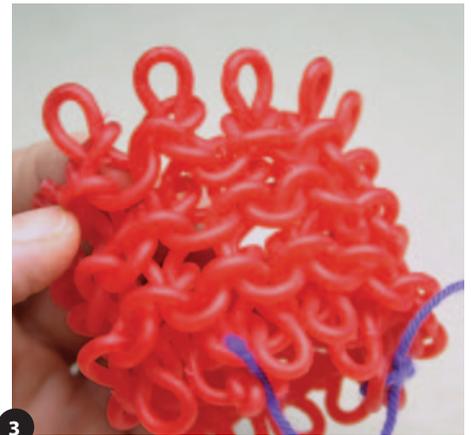
E. The mold is removed (and destroyed in the process) to reveal the knitted-glass piece within.



1 Wax strands are wrapped around a knitting needle or a jig, then opened into loopy zig-zags.



2 "Knitting" the pieces together by hand, twisting together the ends when adding a new strand.



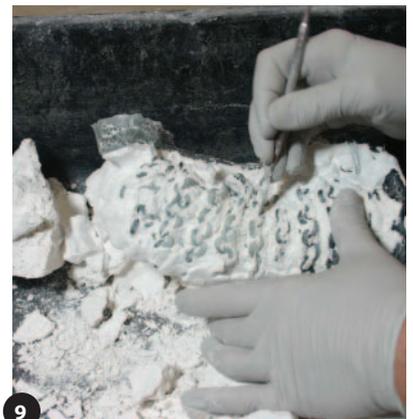
3 Gradually, the knitted wax form takes on a sock-like shape.



7 The first of several layers of mold material applied to one of the sock sculptures. The mold material is built up to a thickness of 1-2 inches.



8 The mold is placed in a kiln upside down and lead crystal "frit" or chunks are placed in the mold or in a flowerpot above the mold. The kiln temperature of 1,530°F melts the glass into the mold.



9 After the mold has cooled, material is carefully removed to reveal the finished piece.

So why do I feel compelled to knit in glass? Knitted goods exude comfort: soft, cozy, intimate, and heartwarming. Once they are in glass, the result loses most of the qualities we associate with knitting and becomes something else entirely. Where we once noticed the surface and feel of the material, our emphasis now shifts to the structure of the material itself. We notice the twisting interconnection between the stitches, the deepening of color where the stitches overlap, and the spaces between the stitches. Where it was once a flexible fabric able to mold to our bodies, it is now rigid and fragile. It is nice to look at but totally impractical to wear.

These are beautiful objects, but they are also metaphors. They speak to the fragility of life and to the tendency to judge based on appearance versus practicality.

Perhaps most importantly, I see my knitted work as a metaphor for social structure. Individual strands are weak and brittle on their own but deceptively strong when bound together. You can crack or break single threads without the whole structure falling apart. And even when the structure is broken, pieces remain bound together. The connections are what keep it intact, bringing strength and integrity to the whole. Fa

The artist's website is [www.carolmilne.com](http://www.carolmilne.com). Milne's work is included in *Beyond Glass* at Gallery IMA in Seattle, Washington (June 2–July 3), [www.galleryima.com](http://www.galleryima.com); and *The Perfect Fit: Shoes tell Stories* at the Boise Art Museum in Idaho (through July 31), [www.boiseartmuseum.org](http://www.boiseartmuseum.org). Milne is also one of the winners of the 2011 *Fiberarts* Reader's Choice Studio Contest. To see images of her studio, turn to page 32.

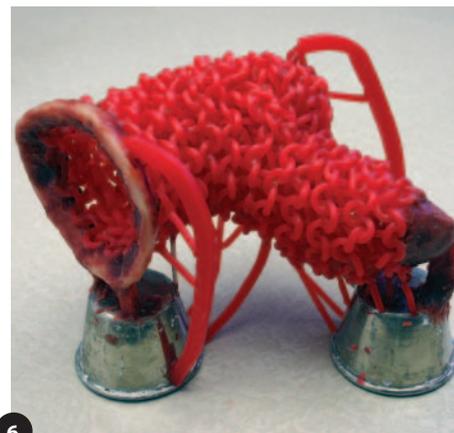
*Photos by the artist unless otherwise noted.*



**4** *The completed pair of wax socks.*



**5** *A complex set of "sprues," "gates," and "vents" are soldered to the piece with wax to provide pathways for glass to enter and air to leave the piece. Photo: Steve Isaacson.*



**6** *The "sprued" sock sculpture is ready to be "invested" or surrounded with several coats of a "refractory" mold material that withstands high temperatures. Photo: Mara Isaacson.*



**10** *The "sprues" are cut off and polished using a diamond tool.*



**11** *A final surface polish with pumice completes the pieces Salt and Pepper (2011).*



**12** *Carol Milne holds the finished Salt and Pepper pieces in her Seattle studio. Photo: Jasmine Isaacson.*