

GLASS PATTERNS

— • Q U A R T E R L Y • —

Winter 2017

Volume 33 • No. 4

Wildlife Issue

Stained Glass

Painterly Detail
Egyptian Cat
Celtic Salmon

Fused Glass

Sgraffito Technique
3-D Panel
Bear Luminary
Frit Landscape
Decal Advantage
Mica Magic

Mosaic

Hot Mosaic Heart



Volume 33 No. 4

\$6.00 U.S. \$7.50 Canada



www.GlassPatterns.com

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Ideas...

Amplified



Blue Ribbon Livin'

2013

14 ft. x 10 ft.

Kiln-formed glass, aluminum and copper
Washington State Arts Commission
in partnership with Valley School District



The Artist

Michael Dupille is one of the early pioneers in the kiln formed art glass movement that began in the 1980s. He creates large scale pieces as murals or individual elements using fused crushed glass. He calls his style "Soft Surrealism" due to its representational imagery that incorporates imaginative twists to embellish the narrative. Find out more about Michael and his work at: www.skutt.com/Dupille



The Kiln

"I love my GM1414! I have used them for years in my workshops, and other studio environments. They are well built, dependable workhorses with some great features. I do a variety of kiln forming techniques as well as production work and the size, depth and versatility of this model allow me to realize nearly all of what I set out to accomplish."



SKUTT

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Publisher ~ Maureen James

Editor ~ Delynn Ellis

Graphic Artists ~ Dave Burnett,

Mark Waterbury

Accounting ~ Rhonda Sewell

Circulation Manager ~ Kathy Gentry

Copy Editor ~ Darlene Welch

Advertising ~ Maureen James

Contributing Designers and Writers

Kelly Crosser Alge, Jean Beaulieu

Cherie Bosela, Dennis Brady

Cathy Claycomb, Delynn Ellis

Leslie Gibbs, Mary Harris

Arnold Howard, Lori Hudson

Susan McGarry, Chantal Paré

Roz Stanton, Kevin Thornhill

Lisa Vogt, Darlene Welch

Tina Ziegel

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P.O. Box 69, Westport, KY 40077

Telephone 502-222-5631

Facsimile 502-222-4527

E-Mail info@glasspatterns.com

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info@glasspatterns.com

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From the Editor

What Never Goes Out of Style?

I'm here to say that wildlife photos, prints, and designs never seem to go out of style. I got an early start on my Christmas shopping, and the halls were already decked with fox ornaments, coyote T-shirts, and moose dish towels. *Glass Patterns Quarterly* enjoys offering you a variety of design styles throughout the year, but we really love to bring you our wildlife and landscape issue that celebrates animals and their habitats. Glass artists seem to savor interpreting textures, colors, and paints into the best animal beauty shots.

There are only a few weeks left before the gift-giving season. Glass is the gift that keeps on giving, whether you craft a gift yourself or highlight your favorite tools that you'd like to see under the tree. Be sure to check out our advertisers and make your wish list for today and beyond.

The artists in this *GPQ* cover a lot of ground in sharing tips for fine-tuning your artwork, including painting techniques using frit, mica, and dichroic extract. Cathy Claycomb and Mary Harris present wonderful advice on creating realistic eyes, both painted and drilled. Kelly Crosser Alge helps you find copyright-free images to use as reference photos. Learn how to add texture with Lori Hudson and pick up some last-minute gift ideas for creating beautiful fused pendants from Susan McGarry. Cherie Bosela's Radiant Heart is a great gift for any occasion, and you will never go wrong with Lisa Vogt's projects and detailed instruction. This time she's creating a festive Bear Luminary.

Want live instruction? Visit www.glasspatterns.com to check out our list of upcoming Webinars, which viewers say are well worth the price of admission. You can bring these master artists/instructors, many of whom are also contributors to our magazine, into your workshop with this glass expert lineup. I love the full circle of sharing that comes from offering Webinars, tutorials, and master classes.

Ultimately what never goes out of style is advancement in this timeless craft that we call glass. *Glass Patterns Quarterly* is in the business of sharing sparkling new ideas. Inspiration is all around us. We strongly encourage our readers to try crossover techniques, from hot mosaics or fused and painted elements to foiling and soldering. If you take away even one new idea that you can incorporate into your work, we've done our job. The challenge for the new year, for all of us, is to keep generating that innovative spark. The folks here at *GPQ*, *The Flow*, and *Glass Art* wish you and your family a very joyous holiday season and a happy New Year.

Happy 2018,

Delynn Ellis

Delynn Ellis

Managing Editor

Bear Luminary
by Lisa Vogt



Upcoming Submission Deadlines

Summer 2018 *Slice of Summer - A Nostalgic Look at Scenes of Summers Past and Present*

Editorial February 20, 2018

Ad Closing April 20, 2018

Ad Materials April 30, 2018

Fall 2018 *Autumn, Halloween, Christmas, and Holiday Ornaments*

Editorial May 20, 2018

Ad Closing July 20, 2018

Ad Materials July 30, 2018

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Photo by Jon Gibbs.

On the cover: Celtic Salmon by Chantal Paré
with details of Ski Retreat by Kevin Thornhill,
Day Meets Dusk in the Wilderness by Roz Stanton,
and Gesture of a Tree by Kelly Crosser Alge.
Tree photo by Kelly Crosser Alge and Kwynn Alge.

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HAKKO

FX-601

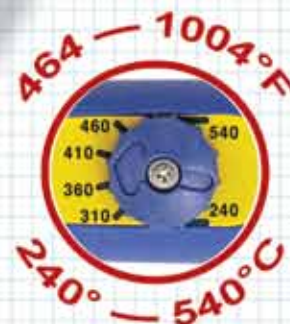
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For more information, including tips and accessories, visit HakkoStainedGlass.com

Hidden Images in Glass

An Introduction to Creating Painterly Detail for Wildlife

by Cathy Claycomb

Wildlife was *everything* to me as I started my glass career. Initially, I started as a wildlife oil painter, which is very detailed work—the more the better.

The Eyes Have It

I loved to define the feathers, muscle, and expressions of my wildlife subject matter. I was particularly fascinated with the “eye” of every bird or creature that I rendered, believing to this day that the shape and detail of the eye sets the mood for the entire piece.

Any slight deviation in shape or position of the eye or its pupil changed my subjects from happy to sad, animated, or *evil*! That attention to and love of detail literally pushed me into the techniques I later developed for glass.

The bird's realistic eye in Bed and Breakfast by Cathy Claycomb makes the animal come to life.



The Lure of Glass

One fateful day, I decided to travel to Kokomo Opalescent Glass (KOG) in order to take a factory tour. It was there that I became fascinated with stained glass—the colors, the light transmission, the click of it when it snapped after a good score. All of those things seemed so much more animated than the solitary hours I spent painting.

Soon after my trip to KOG, I realized my painting days were over. The dilemma I then faced was how to translate the detail I had achieved as a painter to glass. Immediately, I became frustrated by the sheer mechanics of traditional stained glass, including the thickness of even the slimmest solder line, the bulk of even the smallest cut piece, and the mandatory cut lines throughout the background from the subject matter to the perimeter. Certainly I could craft a graceful figure, but I constantly searched for ways to create more realistic detail within each cut piece. That was the frustrating part of this new medium where I had hoped to interject the minutia of detail that I so enjoyed.

Since necessity is the mother of invention, I decided to devise a way to work with glass and have the fine lines, clear spaces, and detail that I craved. I had played with copper foil overlay before. At that time, it seemed an interesting spot of decoration in the corner of a typical two-inch strip of perimeter glass. But what if copper foil overlay could be used for the main image? What if I could cut as much detail as my X-Acto knife would allow? Then I would only be limited by my cutting skills. The “eureka” moment had arrived! Now, with what seemed a clear path before me, I set about gathering what I would need for the next step.

Sketches for Kentucky's Finest by Cathy Claycomb.



Designing the Pattern

In the process of designing any wildlife work in any medium, whether realistic, abstract, or whimsical, a body of sketches must be made. Unless the intricacies of a bird's wing, the muzzle of a horse, or the way a deer's knee bends are ingrained in your memory, reference materials are your go-to in a pinch.

One good reference source would be to gather photographs you have taken or check the library to tighten up your sketches. Reference photos can also be found on the Internet. I have listed several websites at the end of this article that provide free photos and have also added some excerpts from those sites to help clarify how they can be legitimately used.

The photos on these free sites can be traced, enlarged, referenced, or generally utilized in any way to create your wildlife patterns for traditional or nontraditional stained glass, mosaics, glass painting, and other glass techniques. I searched for “Royalty Free Photography,” meaning you do not pay to use them.

In the past, I have traced reference material right onto the pattern from the computer screen. The illuminated screen can act as your own light box. Be very careful, however, to not scratch the screen. Do not use a pen or marker that might bleed through the paper and mar the computer screen.

When designing patterns, many ideas and references come together to form each one. I do research to make sure everything that happens within the pattern also happens in nature. For example, I love the form of whales gliding through the depths of the oceans as well as sea turtles, stingrays, and plant life. I like to make sure the correct whale is interacting with the proper species of turtle in an area that might support a particular type of vegetation. Not every design requires realism, however. Your work can also be abstract, whimsical, or any style in between.

Now, Onward

Once you have your pattern, adjust it to suit your medium. One possibility might be to add a background or border and adjust your pattern to fit the proportion of the project you desire to create. I modified my pattern to capture my eureka moment, the first technique that I called *Hidden Images in Glass*.



Cathy Claycomb uses copper foil overlay in Seascape to capture more detail.

In a nutshell, I now trace my patterns onto a 12" x 12" self-adhesive copper foil sheet and use the foil as economically as I can. After making sure that all of the detail has been traced from the pattern, I cut a rounded shape surrounding my traced pattern, peel off the backing, and carefully apply the copper sheet to clean glass without creating major wrinkles. Next I take my X-Acto knife and cut away all of the surrounding and unnecessary copper sheet from around my subject matter and cut the detail I have designed into my pattern from the interior of my subjects.

After burnishing my newly cut image, I add solder with controlled heat and patience as the glass cools between applications. Finally, I cover the copper foil and add sculptural thicknesses of solder where the pattern and subject matter dictate. Yet, even as I developed what was my first nontraditional technique, circumstances would develop allowing me to use these same patterns to produce three separate techniques.



Examples of adding details with copper foil overlay techniques.

Wait a Minute

I never teach down to my students, since I like to think that all skill levels would enjoy my classes. Learning something different with nontraditional techniques puts everyone at the same starting line. You cannot charge ahead if you have never approached a subject in this way. People tiptoe carefully at first, then quickly increase stride together as they become familiar with simple but unfamiliar steps. Providing new knowledge interests everyone. The challenge is to guide students, whether novice or experienced, to the finish line at their own pace with equal bragging rights.

Having said that, in a particular classroom setting I was charged with leading a group of early high school artists through the introduction, instructional, and fabrication segments of a project in two hours' time. My goal is always to produce a professional quality product, no matter who the students are or what their skill level. Students must recognize a goal, use instruments they are familiar with even if they have never worked with glass, and realize the benefits of using glass-oriented products. Painting on glass with ordinary paints, for example, does not produce the same product as painting on glass using paints made specifically for glass.

Rather than copper foil and solder, the same pattern can be used to place an image on both sides of the glass, successfully achieving a hidden image in a fraction of the time, with permanence and a quality look. Instead of tracing the pattern onto a copper foil sheet, the pattern is traced onto transparent wispy glass using Color Magic paints.

In the case of the flying birds, black was the color choice, because it again allowed for a silhouette approach on the front of the glass with a slightly distant look when applied to the back of the glass. I found the black to be a very dense, velvety color, making application quick without reapplying. When cured, a permanent work of art was created with a very attractive matte finish. Careful glass selection also allowed for a corresponding background. In this case, wispy clouds lifted my geese friends on their way.



Painting on both sides of the glass to create depth and distance.



Stop the Bleeding

While visiting the KOG plant again, I noticed their classes were doing interesting things with alcohol ink. I couldn't help but wonder if I could reach back slightly into my earlier days and develop a more painterly approach to that medium rather than the color blending that made the inks so popular. What I needed was some way to enjoy the unique bleeding properties of alcohol inks and still have a way to control and stop the bleeding. My answer was in the patterns—the same patterns used in the first and second techniques, but used in yet a different way to produce a different technique.

I traced my pattern onto sandblast resist, carefully placed the resist on the glass, and cut the subject matter away instead of cutting away the background to create a mask. Gently burnishing the open spaces in the mask with etching compound provided a roughed, flat base to receive the color. Drops of ink, rather than strokes of ink, provided my painterly effects. I found that dark colors dropped onto a damp base of lighter colors allowed the bleeding properties of alcohol inks to create the more realistic shading and rounding I was hoping for.

Wildlife by any other name is still wildlife, but creating it in different ways with the same set of patterns is the name of the game! You can find complete instructions for creating the hummingbird design in my tutorial featured in the Spring 2016 issue of *Glass Patterns Quarterly*. My tutorial for the flying birds is available in the Winter 2014 issue of *GPQ*.

GPQ



Creating a mask to use with alcohol inks.

Applying etching compound provides a flat, rough surface that will receive the alcohol inks.



No painting, just dripping, to apply the alcohol inks for Breakfast at Rosie's.



Sources for Free Reference Photos

- www.pexels.com “The pictures are **free for personal and even for commercial use**. You can modify, copy, and distribute the photos, all without asking for permission or setting a link to the source. The only restriction is that identifiable people may not appear in a bad light or in a way that they may find offensive, unless they give their consent. You should also make sure the depicted content (people, logos, private property, etc.) is suitable for your application and doesn't infringe upon any rights. **Note:** Attribution is giving credit to the original photographer.”

- www.Pixabay.com

- blog.snappa.com/free-stock-photos “A curated list of websites with beautiful **free stock photos** that can be used for personal and commercial projects. Many of these photographs are free from copyright restrictions or licensed under creative commons public domain dedication. This means you can copy, modify, distribute, and perform the work, even for commercial purposes, all without asking permission.”



Cathy Claycomb, a glass artist whose work is displayed in private collections across the globe, credits her marketing background with expanding the scope of her glass business and career. Cathy continues to develop her series of Let's Learn Something Different classes, which she teaches across the country. These classes include Hidden Images, Sticks and Stones, Working with Solderfields, Floating Rondels, and Dancing Glass, as well as eight others. The first three are now available in DVD format. Cathy is also a writer for the stained glass industry and presents live Webinar classes for *Glass Patterns Quarterly*. You can view her glass show and class schedule at www.cathyclaycombart.com.



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Make your jewelry fit your mood with SNAP & SWITCH! Personalize each day's accessories by the day, minute or hour. Attach the connector to the back of your glass pieces with adhesive, the pop them in and out to suit your mood anytime of the day or night. Modular jewelry for everyone!!

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C. FMT-SS Flat Top



KEY HOLDERS



- A. KH Original Round
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AANP-02

AANP-13

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AANP-10

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AANP-08

AANP-09

AANP-14

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AANP-11

Earrings



AANP-12

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SQBL



SQBM



SQBS

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GB34UF600 3/4" Ultra Fine 600



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GJBL Large
GJBM Medium
GJBS Small
ITEM# **.925 SILVER**
925L Large
925M Medium
925S Small

Heart Bails



- ITEM#** **SILVER PLATED**
SHBL Large
SHBM Medium
SHBS Small
ITEM# **GOLD PLATED**
GHL Large
GHM Medium
GHBS Small

Earring Bails



- ITEM#** **DESCRIPTION**
SEBS SILVER PLATED
GEBS GOLD PLATED
HEART EARRING BAILS
ITEM# **DESCRIPTION**
SHBS SILVER PLATED
GHBS GOLD PLATED

Pattern Bails



- ITEM#** **SILVER PLATED**
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B. SPBL-H Hashmark
C. SPBL-L Leaves
D. SPBL-T Tortoise
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SPBL-A Assorted (5 in 1)

New Design Bails



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C. SPBS Paw

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Bastet, Egyptian Cat Goddess

Design, Fabrication, and Text by Leslie Gibbs

Photography by Jon Gibbs

Between 5,000 and 6,000 years ago, domestic cats were highly regarded in Egyptian society. So revered were these felines that families who owned cats took great care to give them every courtesy and comfort possible. Cats were so well regarded and admired that, even in death, deep respect was given. When a household cat died, the entire family would go into mourning, shaving their eyebrows as a mark of their sadness.

With esteem like this, it is only natural that the cat became venerated royalty, and that is how the Egyptian cat goddess Bastet came to be. Known as the goddess of joy and protector of women, Bastet statues can be seen in several museum collections. In these sculptures, Bastet is sleek and stately, befitting her regal status. Those of us who also “own” cats, have a studio cat, or are acquainted with cat lovers can pay homage to the breed with this glass panel of Bastet. Just like our live felines, the glass cat in this 8" x 11-1/2" design will seek out a bit of sunlight from a window and display a haughty disregard for all.



Art Glass

Dark Gray Iridized Cathedral
for Head and Body, 8" x 8"

Iridized Green for

Left and Right Borders, 6" x 6"

Deep Royal Blue Iridized

for Top and Bottom Borders, 7" x 2"

True Blue for Top Background Panel, 7" x 3"

Turquoise Blue Iridescent for
Center Background Panel, 4" x 3"

Turquoise Blue for

Bottom Background Panel, 5" x 3"

Orange Iridescent for Sun, 5" x 5"

Light Orange Iridescent for Horizontal Bars, 5" x 8"

Thin Orange Iridescent for

Bottom Layer of Collar, 3" x 1"

Clear for Capping

Dichroic Glass on Eye Section, Scrap

Mixed Pattern Dichroic Sizzle Stix
for Collar, Assorted Scraps 1/2" Long

Dichroic Glass

Dichroic Thin Blue Gold for Eyes, Scrap

Additional Glass

3 mm Wavy Dichroic Fire Sticks

for Optional Top and Bottom Border Accents, 12" strip

Tools and Materials

5/32" Silver-Backed Copper Foil

Kem-O-Pro Polishing Wax

Soft Cleaning and Polishing Cloths

Horseshoe Nails 3/8" U-Channel Zinc

Black Patina Cotton Swabs

Craft Glue 60/40 Solder Flux

Steel Pushpins Flux Remover

Toothpicks Old Toothbrush

Hanging Hooks (optional)

1

Make two
copies of the
pattern, one to
cut and one
for layout.



2

Cut all
of the glass
sections, making
sure to cut the
collar base outside
the pattern line to
allow for shrinking
during fusing.



3

Grind and
clean all of the
glass sections.



4

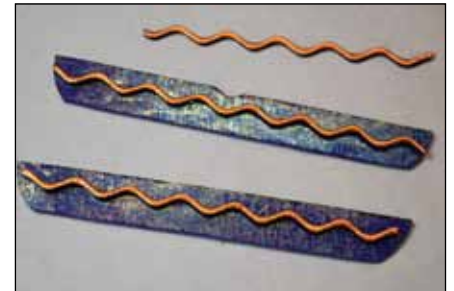
Add cut sections
of the Fire Sticks
to the collar, using
a drop of craft glue
to secure the sections
in place, and let the
adhesive dry.



You can also make your own "jewels" for the collar by cutting narrow strips of fusible iridescent glass in assorted colors.

5

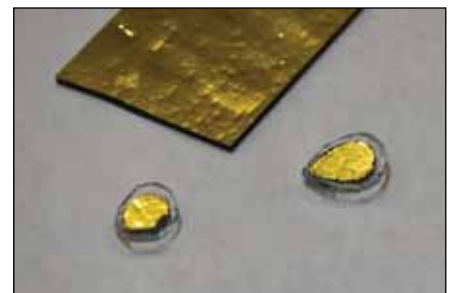
If you will be
using the optional
accents for the
borders, cut and
place those now.



Cut the wavy dichroic fire sticks to fit on the top and bottom border sections. Using a toothpick, apply a small dot of craft glue to the fire sticks and place them on the border sections. Let the adhesive dry completely before firing.

6

Prepare the
eye sections.



After cutting the dichroic eye sections, cap with a larger section of clear glass, secure in place with a dot of craft glue, and let dry. If you prefer, you can use a scrap of double-rolled iridized glass instead of dichroic and avoid fusing the eye pieces.

7

Place the border sections and the collar sections into the kiln and tack-fuse.



Vent the kiln until the temperature reaches 1000°F to burn off the adhesive. Close the kiln and ramp the temperature up to 1350°F while monitoring your kiln's progress.

The eye piece will require a full fuse unless you choose to use a scrap of double rolled iridescent glass for the eyes, which does not require fusing at all.

8

Foil all of the glass sections.



9

Position all of the foiled glass sections on the pattern and brace in place using steel pushpins.



The pins will keep the pieces from shifting as you flux and solder the panel.

10

Flux the glass, solder the front and back of the panel, and clean off any excess flux with flux remover.



11

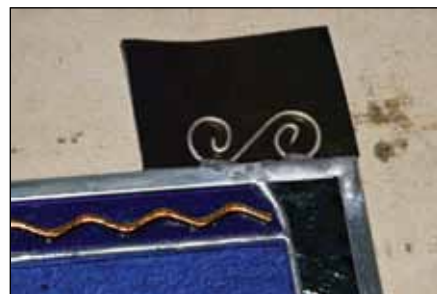
Cut strips from the 3/8" zinc U-channel to fit the outer edges of the panel and secure them in place using horseshoe nails.



Flux and solder the zinc frame together at the corners and at each segment where the solder lines meet the zinc on both sides of the panel. Clean off any excess flux.

12

Add decorative hooks for hanging if desired.



If you choose to add hanging hooks, flux the area at the top of the zinc frame, place a section of scrap glass beneath the hooks, and solder the hooks to the zinc.

13

Apply patina to both sides of the panel including the zinc frame, rinse off any excess patina, and let the panel dry.



14

Wax and polish the panel.



Using a soft cloth, apply wax to one side of the panel and let it dry to a hazy finish. Turn the panel over and apply wax to the other side. Let the wax dry completely before polishing.

15

With a clean, soft cloth, gently polish the waxed panel until it shines.



An old toothbrush is handy for removing dried wax from hard to reach areas. Now you have completed your homage to cat royalty and can remain calm and carry on until your own tabby decides it's dinnertime or time to knock everything off your worktable. And yes, I am privileged to be the caretaker of a very spoiled and aloof Abyssinian cat. I hope she doesn't read this, or things will not go so well for me.

GPO



CS-5630 Dimensions

- Exterior with top closed: 70 1/2" W x 53" D x 52" H
- Exterior with top raised: 70 1/2" W x 63" D x 76" H
- Interior: 56" x 30" x 17" (15 1/2" deep when measuring from quartz tube surface)
- Flat load floor, 30" from ground level

Introducing the Paragon CS-5630 clamshell kiln with quartz tubes

Deluxe quartz tubes

Imagine the huge glass pieces you could make inside the new Paragon CS-5630. Enjoy complete access to your artwork from the sides and front. Add delicate stringers or frit without having to move the shelf into the kiln later.

The roof elements are protected in 10 quartz tubes for a cleaner kiln interior. There is less dust in the kiln, because there are no element grooves in the top.

Heat from the top, walls, and floor

The CS-5630 is 56" x 30" x 17" high. With elements in the floor, walls, and roof, you will enjoy unsurpassed heat distribution. The digital controller uses Power Ratio technology to vary the heat output between the top and bottom elements.

Extra insulation and woven gasket

Lift the kiln top section with handles in the front and sides and with assistance from gas springs. The roof is 3" thick ceramic fiber, and the walls are 3" firebrick backed by 1" of ceramic fiber board (4" of total wall thickness). The extra insulation helps to maintain even temperatures. A woven gasket between the kiln top and floor helps to hold in the heat. The floor

surface is a convenient 30" high from ground level. The 4 1/2" thick firebrick floor includes two expansion joints.

Watch the glass through 2" x 3" peep-holes mounted in the left and right sides. The kiln includes locking casters.

Motorized vent for firing molds

If you fire molds, you will welcome the motorized Orton Vent Master, which is mounted in the back wall of the kiln. The vent, mounted on rubber isolators to prevent vibration, removes moisture from the kiln to reduce rust. The vent is standard on the CS-5630 and plugs into an auxiliary output in the back of the kiln. This allows you to turn on the vent through the digital controller.

Low maintenance

Deluxe, long-lasting mercury relays are standard. Gain convenient access to the electrical components by removing a single panel. The kiln includes access panels for replacing quartz tubes.

Rugged

The CS-5630 is the very picture of ruggedness. A ledge in front of the kiln protects the brick floor from damage caused by leaning into the kiln. The digital controller is mounted away from the

heat for long life. The kiln base is welded from 2" x 2" steel tubing; the upper kiln frame is welded from 1" x 1" steel tubing.

Optional touch screen controller

Order your CS-5630 with the optional Sentinel Smart Touch controller. The Sentinel can check the voltage and amperage and can be programmed with easy-to-follow screen descriptions.



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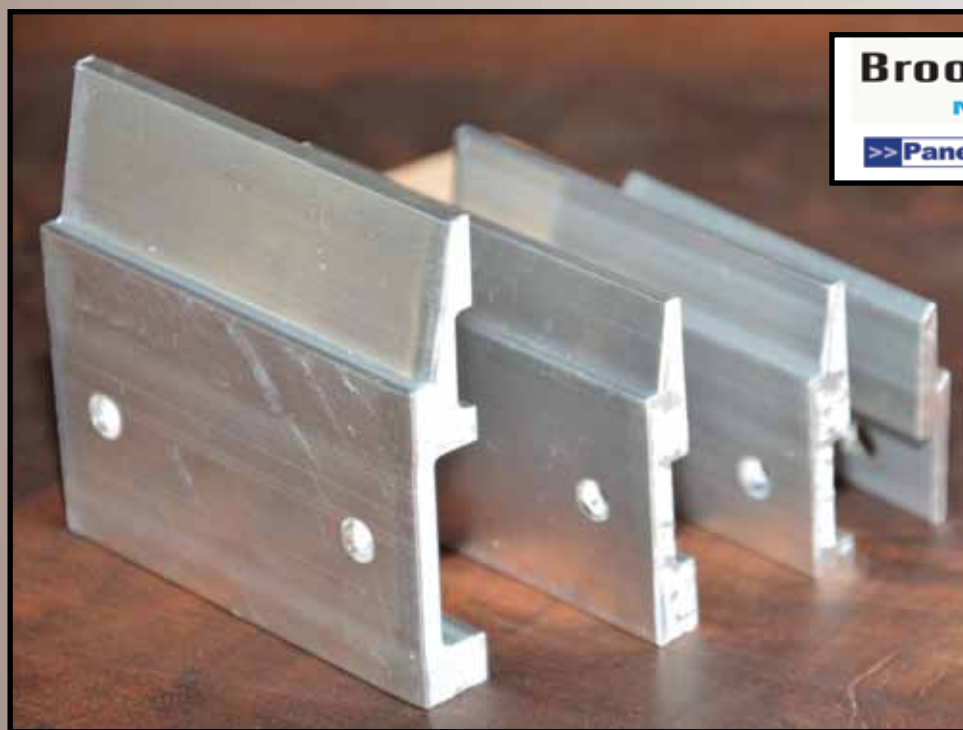
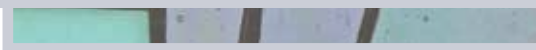
GAS

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With a main focus in drawing and painting, Leslie Gibbs enjoys transforming her more traditional artwork into glass. Charmed by both wildlife and the creatures of the sea, she often depicts the real along with the fanciful denizens of these worlds in her design and pattern books.

Leslie is a longtime Florida resident. She currently lives and works in a small beach town in Northern Florida, having forsaken the Badlands of South Florida for a more peaceful lifestyle featuring more wildlife and less concrete. A relentless jokester, the artist tackles life's common absurdities with a wicked sense of humor and a relaxed attitude. Visit www.facebook.com/lesliegibbsstudio to learn more about Leslie and her art.



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Celtic Salmon

Design, Fabrication, and Text by Chantal Paré



"Smooth runs the water where the brook is deep." – William Shakespeare

In Celtic lore, the salmon is emblematic of knowledge and wisdom. Unfortunately, no one knows if the knots that the Celts were so fond of carving and drawing had any particular meaning. What *is* certain is that their artistic appeal has endured throughout the centuries.

To highlight the aquatic theme of this 15-3/4" x 19-1/2" project, I chose a multicolored, cathedral streaky glass with a granite texture. The color variation of this outstanding glass is organic and reminis-

cent of iridescence with its blue, purple, green, and brown palette. Except for the fish eyes and a few pieces of light green glass, the fish are entirely made out of this single, multicolored glass sheet.

The clear background is Pilkington Flemish, chosen for its subtle, large-scale, fluid pattern. The flow of textures catches the light-like waves on water, complemented by the colors reflected by a loch. I hope you will enjoy the final effect.

Wissmach Glass Co.
 199-LL Medium Amber/
 Dark Amber Brown Ripple, Scrap
 441-LL Dark Purple/Dark Blue/
 Medium Green/Opal/Crystal Granite, 4 Sq. Ft.
 346 Dark Yellow Green Granite, 1 Sq. Ft.

Pilkington Textured Glass
 Clear Flemish™, 4 Sq. Ft.

Tools and Materials

Fine Metallic Silver Marker Fine Black Marker
 7/32" Black-Backed Copper Foil 60/40 Solder
 Soldering Flux Flux Brush Miter Saw
 1/2" Zinc U-Came Masking Tape
 Black Patina Flux/Patina Remover
 14-Gauge Pretinned Copper Wire
 Black Patina Flux/Patina Remover
 Acetone or Nail Polish Remover

Prepare two copies of the pattern, one for cutting apart and one for laying out the glass pieces.



Because of the directional pattern of the glass texture, draw a line with a marker on each glass piece to represent the orientation that best suits your artistic vision. Take one of the patterns and cut out all of the pieces, removing the black lines either with normal scissors or pattern shears.

Use a silver metallic marker to trace the numbered pattern pieces onto the dark, flat underside of the Wissmach streaky glass.



Score and break the glass.



A few of the pieces have deep undercuts. Cut as deeply as you can, bearing in mind that you can carve out the deepest undercuts later with the grinder.

Smooth the edges to fit the pattern with an electric grinder.

4



Wrap all of the glass edges with 7/32" black-backed copper foil.

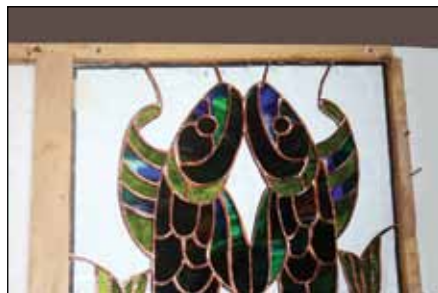
5



Carefully crimp the edges using the sides of a pair of small craft scissors or a fid.

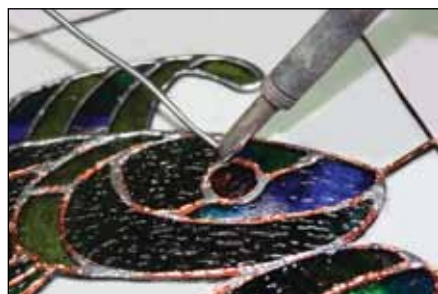
Make a jig using a carpenter square to ensure the right corner angles and place the wrapped pieces on the pattern inside the jig.

6



Brush the copper foil lines with flux, one small area at a time, and solder the panel.

7



Take care to make a nice bead over each line. Leave some space around the edges of the project free of solder so you will be able to slip the zinc U-came frame onto the edge of the glass later. Flip the project over and solder the other side of the glass.

Cut the zinc U-came with a manual or electric miter saw to the correct lengths to create a frame around the panel.

8



Tack-solder all of the lead lines where they join the frame.

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9

Solder the corners and add hooks for hanging the panel.



Use masking tape as resist to ensure straight solder edges at the corners. Fold over two 1-1/2" lengths of pretinned 14-gauge copper wire to form hanging hooks and solder them in the grooves of the uppermost joints in the frame.

10

Clean the panel with soap, pat it dry, and apply the patina.



Pour a bit of the patina solution and spread it on the lead lines with rubber gloves. Clean the panel with flux and patina neutralizer.

11

Remove any trace of the markers on the glass using a bit of acetone or nail polish remover.



Your Celtic salmon panel is now ready to hang and catch the sunlight. **GPQ**

A decade ago, Chantal Paré quit the fast-paced world of molecular biology to devote herself to the full-time pursuit of glass. She's liable to melt it, blow it, break it, paint it, or cast it, sometimes just to show it who's boss. Nothing else comes close to creating an object through which light can pass the same way it does through water.

In her free time, Chantal draws patterns in a variety of styles ranging from Victorian to geometric and self-publishes them on the Internet. Lately, she's concentrating her efforts on glass painting.



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Gesture of a Tree

Sgraffito Drawing with Glass Powders

Design, Fabrication, and Text by Kelly Crosser Alge
Photography by Kelly Crosser Alge and Kwynn R. Alge



Freehand drawing with glass can seem intimidating at first, especially for those with limited art experience. If you fall into this category, I have great news for you! Drawing is a skill that anyone can learn and doesn't require special talent. In many ways, drawing with glass is actually easier than pencil drawing and can be a relaxing way to work intuitively. This project is designed to introduce you to drawing with a painterly approach using glass powders to capture the essence of a tree in a landscape drawn freehand.

For those of you who attended the 2017 Glass Craft & Bead Expo in Las Vegas, Nevada, you may remember the winner of the amateur category in the Fused/Cast/Kilnwork Division, Kristine Kelly's *Sentinel Bridge*. Kristine is one of my favorite students, because she is a prime example of someone who was *certain* she couldn't draw in the beginning. Yet with a little practice and a punch of determination, she's been able to achieve award-winning results with her glass sgraffito drawings.

This project is written for use with 90 COE glass. Artists who use 96 COE can achieve similar results by substituting glass colors and adjusting annealing temperature according to the manufacturer's recommendations. When working with glass frit, powders, and fiber paper products, it is very important to protect your lungs from airborne particles, especially when glass is being sifted. ***Be sure to wear a respirator or N95 Particulate Dust Mask while working on this project.***

90 COE Glass
Fusible Sheet Glass
Black, 5" x 7"
Opaque White, 4-1/2" x 6-1/2"
Powder Frit
Black
Lt. Aventurine Green
Coarse and Medium Frit
Light Aquamarine
Neo Lavender
Red Opal
French Vanilla
Yellow Transparent
Spring Green

Tools and Materials

Safety Glasses N95 Dust Mask or Respirator
Plain Paper 8-1/2" x 11" Fine Round Sifter
Kiln Shelf Fiber Paper, 6" x 8"
Paper Business Card or Heavy Cardstock
Pencil with Eraser Cap X-Acto® Knife Blade
91% Rubbing Alcohol White Vinegar
Old Newspaper or Paper Towels
Found Objects (optional)

1



Prepare your workspace and materials.

Begin with a clean workspace with your glass and fiber paper already cut to the listed dimensions. Clean both pieces of the fusible sheet glass with glass cleaner made with a 50/50 mixture of 91% rubbing alcohol and white vinegar to remove fingerprints and dust and to cut any oil residue from the glass. You can add one drop of food coloring if desired.

Dry the glass with old newspaper or a paper towel. Place the smaller white piece on top of the black and make sure you have a fairly even 1/4"-wide black border around the edges. This extra edge will create a tidy black border around the drawn imagery as the piece melts and will result in a nicely finished edge without the need for cold working.

Place the clean, black sheet glass in the kiln on a shelf lined with the precut fiber paper. Lay the white glass on top of the white paper on your worktable and gather your sifter, dust mask, safety glasses, black glass powder, and a paper business card or piece of heavy cardstock.



2



Gather reference materials as a source of inspiration for your design.



Many people find inspiration for their art via websites such as Pinterest, Etsy, and Facebook. You need to be careful, however, and understand that using copyrighted materials, especially as it pertains to the creation of derivative artwork, is theft. Well-intentioned artists can sometimes unknowingly fall into trouble.

Copyright infringement is a topic that is widely discussed and frequently misunderstood by many within the art community. Therefore, in the interest of helping everyone remain on the right side of the law, I advise my students to take their own reference photos whenever possible. It's fun!

If you'd like to search the Web for images, look for resources that are copyright-free and labeled for "use and re-use" or "use with modification." A great source for finding this type of imagery is through the website CreativeCommons.org. Once you are on the website, simply click the tab that is labeled USE-REMIX, then continue with keywords for your search.

Black and white images work best as references, so for this project, I used the search keywords "black tree." I chose several reference images that reflect the personality and gesture of a *particular* tree, paying attention to things such as overall shape, branch patterns, and things that distinguish the tree as an individual element.

3

Plan your composition, deciding the orientation of the piece and where the horizon will be.



Anyone can make a generic tree, but it's difficult to make a generic tree look appealing on its own. Artists use *composition* to design how the parts of an artwork go together to create a visually pleasing arrangement for the viewer.

Composition determines the balance, flow, and overall feel of the piece. Believe it or not, composition can actually explain a lot about why your eye is attracted to a particular artwork. Composition can be a tricky subject, however, so here are two quick and simple considerations to help you compose your tree scene in an artistic way, right off the bat. Keep in mind that your goal is not to make an exact representation of the reference image, but rather to capture its essence in a painterly way.

First, determine the orientation of the piece. A traditional landscape format (5" x 7") offers plenty of room for a wide-shaped tree or a wide horizon, while a portrait format (7" x 5") might better suit a tall, slender tree that fills a larger part of the sky. Pick the format that you feel works best with your subject. My reference images will inform the tree I create. I like the long, droopy branches and the feel of a dark foreground with lots of sky, so I've chosen to use a landscape format to best fill the space.

Now determine where the horizon will be. Landscape pieces benefit from a horizon that is positioned either slightly above or slightly below the centerline. Using the "Rule of Thirds," the artist decides where to place the emphasis. For example, a composition emphasizing the land should have a horizon that is placed above the centerline, showing about 2/3 land and 1/3 sky. Reversing this theory, a lower horizon line gives more space for the sky and the things in it. By avoiding a centered horizon, you've automatically taken pressure off of viewers, who no longer have to make the excruciating decision as to whether they should focus their attention on the land or on the sky.

4
Begin by drawing the tree trunk, using a business card or heavy cardstock to shape the black powder.



There are many ways to draw with glass powders, and each artist develops his or her own favorite tools for the job. My favorite tool happens to be a simple business card. Why? Because that's what was lying on the table when I started fooling around, and it works. Seriously. Give yourself time to play with random things in your junk drawer, and you'll be amazed at how many great tools you'll come up with on your own.

Start with about 1/2 teaspoon of black glass powder in a pile where you will begin the base of the tree. Because tree trunks are usually widest at the base, you can keep adding glass there if you need more.

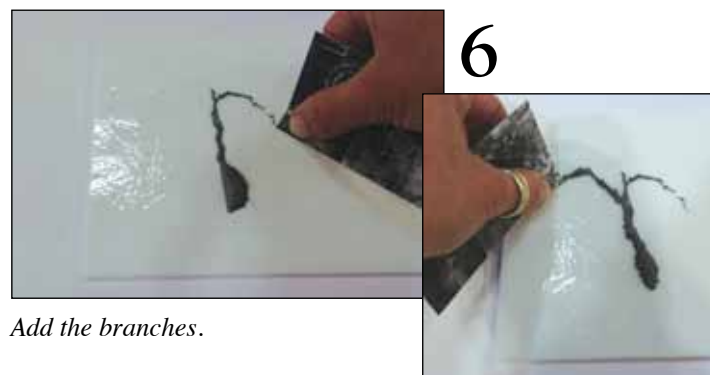
Holding the business card horizontally with your thumb in the lower left corner, grab a bit of black powder from the right edge of the pile and slowly pull it away from you with the card.

5
Draw a black vertical line coming up from the pile of black glass powder.



As a reference, begin with the card in a three o'clock position, parallel to the bottom edge of the glass. As you pull the line of powder, slowly rotate the card about a quarter turn to a twelve o'clock position as the line lengthens, finishing the line with the card almost parallel to the side edges of the glass.

Controlling the line takes a bit of practice, but once you learn to "steer the pile" with the card, it will feel more natural. The more you allow your full arm to move along with your hand, the easier it becomes, so some students prefer to stand when they are first learning. Practice with the card on a larger piece of glass to make different kinds of lines—thick, thin, curvy, straight, long, short—until you start to feel that you're able to direct the glass where you'd like it to go.



Add the branches.

Use your reference image to get a feel for where the most important branches should be as well as the overall shape of the tree. While it is not important to include everything you see, it is important to study your reference to help you decide what to leave out.

After carefully looking at your reference, you may discover that many things you know about how trees should look aren't necessarily true of this *particular* tree. There may be large gaps between areas of foliage, broken and contorted branches, or a bent character to the trunk. Embrace that knowledge! Keen observation skills will serve you well in creating a drawing that looks natural.

Begin to "draw" the branches by continuing to pull glass from the bottom pile up and along the trunk until you reach a point where a branch should begin. From there, keep the small pile of glass that is directly opposite your thumb behind the card. Begin to make an arc by turning your wrist away from the trunk of the tree as you continue this line.

While it can feel awkward at first, you will notice that it's much easier to use your right hand when pulling lines on the right side, and your left hand when working on the opposite side. Practice switching hands as you work. It only hurts your brain for a short while. If you find you still have extra glass when you've reached the end of a branch, simply slide the excess off the white glass with the edge of your card and onto your 8-1/2" x 11" sheet of paper underneath. The paper can be rolled up, and any remaining glass can easily be recovered and reused.



7
Once you have the main branches drawn, use the card to "split" the lines into smaller branches.

To do this, start at the *end* of a previously made line and use the card to cut the line in two. Small branches can be pulled upward or downward from the main branch and can often be split many more times to reveal very fine branches.

Remember that you will have some branches that cross in front of others. If you accidentally crash into a branch you already made, your tree may actually look better!



8
Flatten the base of the trunk with the back of the card if it starts to look too skinny.



9
Create shadows using the black powder.



When you are satisfied with the branches, take another look at your reference image to find areas of foliage or shadow. Holding the round sifter in your dominant hand, grab a big pinch of black powder in the opposite hand and gently release it through the moving sifter as you tap it with your index finger.

Tip: Keeping the sifter in motion as you release small amounts of powder allows you to evenly control where the powder is going while avoiding the circular clumps that tend to form when the sifting motions stop and start.

10
Use the corner of the card, a pencil tip, or the eraser end of a pencil to remove areas of powder to reveal highlights.



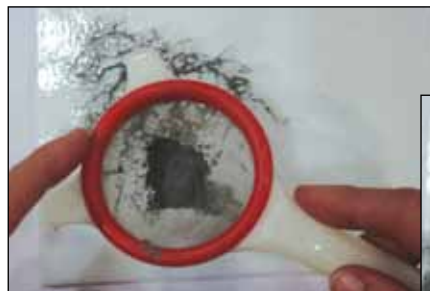
You can draw in small, light branches and highlight areas of foliage that are in sunlight by removing glass and pushing it into darker areas. Also pay attention to any gaps between dark branches where light is coming through.



Try making your own special tools.



You can make a nice tool for this step using the blade of an X-Acto knife to shape a pencil top eraser into a point, a rake, or a fine chisel tip. Experiment with other items as well to create your own tools for drawing interesting shapes into sifted areas. Keep in mind that a good balance of lights, darks, and in-between shades will yield the best finished results in your drawings.



Add the ground.



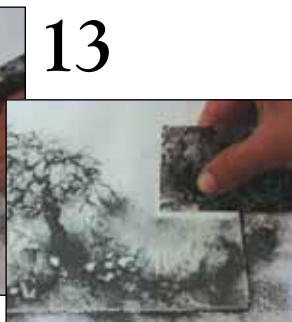
Assuming your lovely tree is alive and thriving, it should be rooted in the ground somewhere. Will it be among other trees on a rolling prairie or standing alone in a field? Depending on where your tree is situated in the landscape, you may have land showing behind, beside, and in front of where its trunk begins. For example, if your tree is in the foreground, its trunk may be rooted low in the composition, and land may be visible all around the trunk. A tree farther off in the distance will appear to be rooted closer to the horizon and will be shorter than trees in the foreground.

To add the ground, fill the sifter about halfway with black glass powder and begin lightly sifting over the base of the tree and throughout the “ground” areas of your composition. When adding this layer, hold your sifter about 10" away from the glass and tap gently back and forth with both hands at the same time. This helps to release the powder in a light, even pattern.

Tip: Sifting with only one hand doing the tapping results in clumpy, hard-edged shapes of powder that are difficult to adjust. Raise or lower the sifter as you work to adjust the amount of coverage. You can easily add more fine layers if you need more, and it is nice to have some variation in the amount of glass that piles up. Keep in mind that the deepest areas of powder will form the darkest places, while lightly sifted areas will be able to accept a bit of color to form shades and tones of color that create interest.



Scrape away some of the black to create grassy textures and the illusion of space.



I've added some details by removing a few areas of black powder to create some highlights in the foreground, and I created some grassy textures using another favorite tool—the end of my ratty braid. I also used the long edge of my card to scrape away powder in the background of my image to give an illusion of space.



14

Begin to add some color to the design.

The tree scene is finally drawn in black powder, and you're ready to add some color to the piece. Thanks to the hard work and perseverance of color chemists and glass manufacturers, we have a huge color palette available from which to pull inspiration. The color combinations you can achieve in drawings are virtually limitless! For the sake of ease and expense in this tutorial, I've chosen a limited number of my favorite go-to colors and a simplified method to get you started. As a general rule of thumb, I begin to color a drawing using sifted layers of colored glass powders, then add coarser-grained frits later.

Start by sifting a light layer of 1414 Light Aventurine Green over the black ground areas in the same manner as in the previous step. The heavier areas of black will cancel out the light green color, but the sparkle of the aventurine will remain. The green layer will show up as varied shades of color over the lighter areas of black and will be true to color in the highlight details. If your tree has green foliage, add some of this color to those areas using the "pinched through the moving sifter" technique.

15

Sift on some Light Sky Blue and Neo Lavender for the sky.



If you choose to add color to the sky, go back to the "double tap from higher up" sifting technique for even coverage. I added a heavy layer of Light Sky Blue along the top of the sky, followed by a layer of Neo Lavender closer to the horizon.

16

Build the color with coarser grains of frit, as desired, to add hints of color.



Using a combination of opal and transparent colors gives the physical illusion of depth, since transparent colors appear to sink in while opal colors appear to rest on top. To achieve an illusion of space in the piece, use coarser frit in the lower areas of the design and reduce the grain size as you move up toward the horizon. Larger

pieces in the foreground of the landscape will read as being closer than smaller pieces off in the distance. **Note:** Any large chunks of frit should be kept at least 1/2" from the edge of the glass to keep from distorting the edge during firing.

17

Sign your work, if desired.



When you are satisfied with the piece, it is ready to fire. If you choose to sign your work, simply use a sharp pencil to scrape through the powder to reveal the white glass before placing the project in the kiln. Carefully pick up your drawing by the edges, making sure that your fingers don't disrupt any powder.

18

Center the glass drawing on the black base sheet, place the project in the kiln, and fire.



Make sure that the fiber paper is neatly under the black layer to protect the kiln shelf. Fired drawings can be displayed using stand-offs, display easels, wood mountings, or frames.

This is a conservative schedule that works well for me in my studio classes. You may wish to adjust it according to your needs depending on variations in the glass used, the size of your piece, your kiln type, size, element configuration, and altitude. Firing schedules are a bit like recipes, and just as in cooking, there is satisfaction in learning to create your own. Understanding how your kiln behaves over a range of temperatures is the first step in becoming the "chef" in your studio.

Firing Schedule

- Segment 1: Ramp 350°F/hr to 1000°F and hold 10 min.
 - Segment 2: Ramp 150°F/hr to 1250°F and hold 20 min.
 - Segment 3: Ramp 9999 (AFAP*) to 1460°F and hold 10 min.
 - Segment 4: Ramp 9999 (AFAP*) to 900°F and hold 30 min.
 - Segment 5: End.
- *as fast as possible

Here is wishing you a lifetime of creating beautiful sgraffito glass drawings.

GPO

The reference photos used in step 2 are from CreativeCommons.org and are suitable for reuse and adaption. The digital adaptations are by Kelly Crosser Alge.

Kelly Crosser Alge is an award-winning glass artist and national instructor from Findlay, Ohio. She specializes in fused glass powder sgraffito drawing, a technique that involves sifting and scratching through layers of colored glass powders to create freehand, drawn imagery that is heat fused in a kiln.



The artist's background in painting, drawing, and collage work laid the foundation for her solo adventure into the magical world of glass, and she finds it to be the perfect medium for combining these techniques. Kelly has a genuine love for teaching art to people of all ages and skill levels and is a passionate advocate for quality art education for children. She is thrilled by the fantastic work being created by her students and celebrates their accomplishments wholeheartedly.


Kelly is the author/originator of the "30 Day Fused Glass Sgraffito Drawing Challenge," as well as a corresponding Facebook group dedicated to drawing with glass powders. You can find out more about the 30 Day Challenge, Kelly's current work, and class schedules on her website, www.ModernAncientGlass.com.



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GM215 Swirl Texture Sq.
6.5" l x 6.5" w x 3" t



LF168 Roses and Leaves
8.25" l x 6" w



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GLASS PATTERNS QUARTERLY/Winter 2017

25

Moose Lake

Design, Fabrication, and Text by Mary Harris

It's time to take your glass creations to the next level. It's not just about plunking in colors. Before you start any project, especially wildlife, do some research. Think about color, tone, and depth. Do you want a daylight scene or perhaps a moonlit night? With all the glass choices out there, you should have no trouble creating the stained glass of your dreams.

Take into consideration this design, *Moose Lake*, for example. Using all Wissmach glass, you can achieve a realistic and colorful stained glass design. Use different parts of your glass to get different hues of the same color as seen in the moose legs, for example. They were cut entirely from the Wissmach 71-L. Don't be afraid to think outside the box either. The sky color can greatly affect the tone of the entire piece. Just because you visualize grass as green doesn't mean it can't also be done in ambers or, yes, even blue. Mountains aren't actually purple, but that's a perfect choice for those faraway majestic peaks. Now look at snow. Is it white? Chances are it isn't. A cloudy day may render the snow as gray or, my favorite, as a light blue.

Here is an *awesome* tip that you will use repeatedly. You know that highlight in the eye—that one tiny light spot that makes the eye come alive? You can get small drill bits with the same ground diamond surface that is on your grinder heads. Drill a small hole with a Dremel in your glass. What a difference that will make. Just be sure that you drill it out *before* you foil and solder it into place. Personally, I like to drill the hole first, even before I cut out the glass piece, since that gives me a little more glass to hold on to. Eyes are small!

We all know the basics of cutting, grinding, and fitting, but remember that if you are using a clear, light cathedral glass, use the appropriate foil. With black patina, for example, use black-backed foil. I think you get the picture. Also use different sizes of foil. Large pieces can have 7/32" foil, but I use 3/16" for small pieces.

The recommended minimum size for *Moose Lake* is 14" x 36". I have included the Wissmach glass choices I used and roughly how much of each you would need for that size. Please feel free to visit both of my websites, harrisartglass.com and bestglasspatterns.com, for more design ideas.

GPO



Wissmach Glass Co.

441-L Dark Purple/Dark Blue/Medium Green/
Light Opal/Crystal for Top of Sky, 1 Sq. Ft.

444-L Light Blue, Red/Light Opal
for Bottom of Sky, 1 Sq. Ft.

51-DDXXM Dense Opal
for Cloud, Scrap

65-D Medium Brown/Blue/Dense Opal
for Water, 1/2 Sq. Ft.

112-L Dark Green/Dark Amber/Light Opal
for Bush and Tree, 1/2 Sq. Ft.

199-LL Medium Amber/Dark Amber Brown Streaky
for Antlers and Pine Trunks, 1/2 Sq. Ft.

223-LL Light Amber/Dark Brown Streaky
for Tree Trunk, Scrap

71-L Dark Brown/Green/Light Blue/Light Opal/Crystal
for Moose, 3/4 Sq. Ft.

101-D Dark Green/Dense Opal/Crystal
for Pine Needles, 3/4 Sq. Ft.

217-LL Medium Purple/Yellow Green/
Opal/Crystal Streaky for Ground, 1 Sq. Ft.

Tools and Materials

7/32" or 3/16" Black-Backed Copper Foil
Flux Solder Black Patina
Small Diamond Bit Drilling Tool



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Sparkle Mountains 3-D Fused Glass Panel

Design, Fabrication, and Text by Lori Hudson

During the beginnings of my journey in glass, I created stained glass pieces utilizing the copper foil technique. I loved making three-dimensional lamps, animals, and bowls. Now that I am working in the fused glass arena, I still strive to put that “third dimension” into my work.

I was recently awarded first prize for the Amateur Cold Working Division at the 2017 Gallery of Excellence during the Glass Craft & Bead Expo in Las Vegas, Nevada. After winning this award, I feel like sharing some tips with you to help you challenge yourself with some more advanced techniques, such as cold working and firing, taking multiple different thicknesses of glass into account.

The following tutorial uses a three-layer base glass plus pattern bar glass made from scrap. After the pattern bar is fired, it is cut to expose the different colors. As we bring these pieces together, we will create a three-dimensional piece that is reminiscent of mountains.



90 COE Glass

Dense White, 8" x 10"

Pumpkin Orange, 8" x 10" and 7-1/2" x 8"

Remainder Cut from Scrap

Red

Transparent Red

Pink

Spring Green

Canary Yellow

Sunset Coral

Dichroic Glass

Various Compatible Dichroic Glasses

Dichroic Extract (optional)

Tools and Materials

Tile Nippers Wet Saw

Fiber Paper Vinegar Water

Permanent Marker Lip Balm

Angled Rubber Piece Dish Brush

Morton Cutting System (optional)

Glue for Cold Fusion (optional)

Lap Sander (optional)

1

Select the glass you would like to use for the project.



You'll need two different colors. One color will be sandwiched between two pieces of a different color.

2

Cut two pieces of 8" x 10" glass from one base color and one piece of 7-1/2" x 8" glass from the other base color.



One of the 8" x 10" pieces will be the center color and the other 8" x 10" piece will be the outside color of the piece. Cut the 7-1/2" x 8" piece using the color chosen for the outside.

I love using a cutting system. I can always get straight cuts, and if I make all of the similar cuts at the same time before switching the measurements, I get perfect pieces. There are many systems out there, but I have had a Morton system for 23 years, and it still performs perfectly.

3

Full-fuse the 2 sheets cut to 8" x 10" and set aside the 7-1/2" x 8" glass sheet for later.



Use the suggested schedule below for the full-fuse, remembering that each kiln fires differently. You might have to make adjustments to accommodate your own kiln.

Full Fuse Schedule

Segment 1: Ramp 300°F/hr to 1300°F and hold 30 min.
Segment 2: Ramp 500°F/hr to 1465°F and hold 10 min.
Segment 3: Ramp 9999 (AFAP*) to 900°F and hold 60 min.
Segment 4: Cool to room temperature.

*as fast as possible

4

Snip the scrap glass for the pattern bar.



I am always looking for a way to use up some of my scrap. For this project, approximately 1 pound and 5 ounces of glass was used. After snipping the scrap, it is a good idea to stir up the small pieces to disperse the colors.

Be aware when picking the scrap colors that they need to blend with your theme. As I was designing *Sparkle Mountains*, I wanted the colors to represent the jewels that are hidden in the earth.

5

Set up kiln furniture to create an area about 2-1/2" x 8" for the pattern bar.



6

Line the created space with fiber paper, fill it with the scrap glass, and fuse.



Full-fuse the pattern bar using the schedule in step 3 with a longer soak at the top fusing temperature. That will ensure that the entire bar is fully fused.

Full Fuse Schedule with Longer Soak

Segment 1: Ramp 300°F/hr to 1300°F and hold 30 min.
Segment 2: Ramp 500°F/hr to 1465°F and hold 60 min.
Segment 3: Ramp 9999 (AFAP*) to 900°F and hold 60 min.
Segment 4: Cool to room temperature.

*as fast as possible

7

Take the fired pattern bar out of the kiln and rinse it off very thoroughly.



Soak the bar in a solution of 1 part vinegar and 2 parts water for 30 minutes. Use a scrub brush and completely rinse the pattern bar. I do my best to take every precaution when it comes to cleaning at every step if possible. That keeps the oils and dirt low.

Mark the pattern bar where it will be cut with a permanent marker.

8



Cover the marker line with lip balm to help keep the marker from flaking off during sawing. For aesthetics, it's best to cut the bar into an odd number of pieces.

9

Cut the pieces using a wet saw.



Use lots of water, which helps the blade stay sharp, thus providing a faster cutting experience. It's best to keep the pieces in order. I use an inexpensive tile saw from a hardware store. If you are newer to glass fusing, it is okay to start with a hardware store blade. Just make sure you buy one made for glass. Once you become more experienced, try a grit sintered diamond blade.

10

Decide the sizes of the angles you would like to use when cutting the individual pieces to create the mountains.



Lean the cut pattern bar piece against a piece of rubber that has been cut to the desired angle. The rubber shown here is an old stained glass tool that was used to solder corners and angles. Cut angles on all sides of the pieces. The angles do not have to be the same. In fact, if they are cut at different angles, it makes the piece more interesting.

11

If you have a flat lap available, smooth off the saw marks.



This step is optional, because a contour fuse will be done in future steps. A contour fuse will fire-polish your pieces and take out most of the marks created by the wet tile saw.

12

Soak all of the pieces again in the vinegar and water solution.



After all of the pieces have been cut and smoothed, soak them in the 1 part vinegar and 2 parts water solution to help remove the fine ground-glass particles. Removing this will help reduce the chance of devitrification.

13



Arrange the mountain pieces on the bottom layers.



Decide where you want the mountain pieces, which will determine whether you will need to split the top piece of 7-1/2" x 8" glass that was set aside at the beginning of the tutorial. In the picture on the left, the mountain pieces are laid at the end of the base glass to see if they would look better on the edge. If this is the choice you prefer, the 7-1/2" x 8" piece does not need to be cut. It can just be laid on the other side of the mountains.

Another option is to offset the mountain pieces on top of the bottom base piece as shown in the image on the right. In that case, you would need to cut the 7-1/2" x 8" piece of glass into two separate pieces, cut here so there is a 2" x 8" piece and a 5-1/2" x 8" piece laid beside the mountain pieces.

Return the piece back to the kiln and run a contour-fuse using this suggested schedule. It is a lower/slower ramp up and has a long annealing time, since the piece has several different levels and thicknesses of glass. Remember to make any necessary adjustments in the schedule to fit your own kiln.

Contour Fuse Schedule

- Segment 1: Ramp 150°F/hr to 850°F and hold 20 min.
- Segment 2: Ramp 200°F/hr to 1000°F and hold 20 min.
- Segment 3: Ramp 300°F/hr to 1265°F and hold 15 min.
- Segment 4: Ramp 9999 (AFAP*) to 900°F and hold 180 min.
- Segment 5: Ramp 50°F/hr to 750°F and hold 30 min.
- Segment 6: Cool to room temperature.**

*as fast as possible

**Do not open the kiln until the temperature is below 100°F.

14

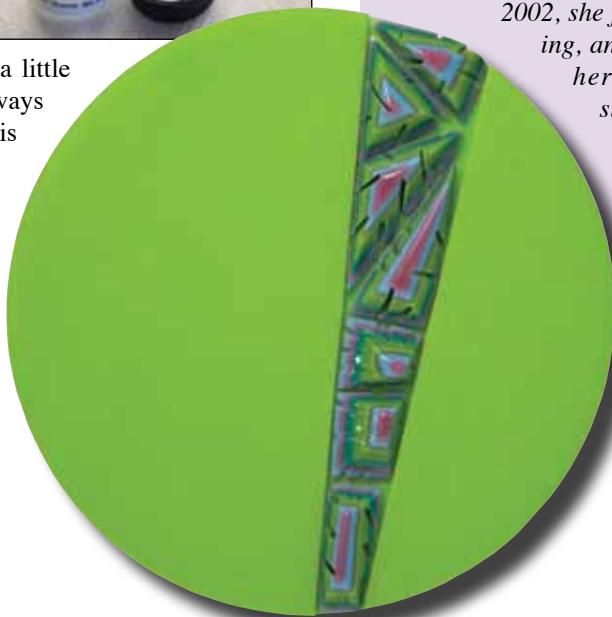
As an option, sprinkle a little Dichroic Extract on the pieces before the final firing to give a little added sparkle.



You do not need too much. It's a little expensive, but well worth it. We always want our work to stand out, and this is a good way to do it.

This finished art piece will look great hanging on a wall. As winter turns into spring, take the opportunity to look at our majestic mountain ranges and think about their beauty. Hopefully, your *Sparkle Mountains* design will remind you of what Mother Nature has given us!

GPO



Lori Hudson started working in stained glass in the early 1990s. In 2002, she found glass fusing, and this has been her passion ever



since. Lori has had the honor of studying with some of the finest glass artists around the country. She strives daily to learn something new and is always working on her skills. Most of Lori's work can be seen by visiting www.Facebook.com/Lori.Hudson.

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Mission Style Crow

Design by Tina Ziegel, Text by Delynn Ellis



A crow perched high above a tree branch in the moonlight in this dramatic 12" x 12" scene is brought to us by California artist, Tina Ziegel. She made this pattern especially for her sister. Tina says, "I tried to make the design simple and clean so the crow would stand out." She created her own Mission style design to go with the decor of her sister's house.

Let your imagination run wild with the jewel that the crow currently has dangling from his mouth. This could be a scrap piece of glass, a nugget, or a beveled jewel. Consider using glass paints for the eyes or a tiny glass jewel to reflect more light. You can see more of Tina's work at www.glassrefractions.com.

GPQ

Wissmach Glass Company

BLACK Dense Black for Crow, 1 Sq. Ft.

WO-238 Dark Purple/Dark Blue/Opal Crystal Wissy for Beak and Leg, Scrap

565-L-IR Gray Opal/Dark Gray/Light Opal Iridescent for Moon, 3/4 sq. Ft.

WO-503 Opal/Dark Gray/Brown Wissy for Background, 1 Sq. Ft.

155-LL Dark Purple/Green/Light Opal/Crystal Streaky for Branches, Scrap

100-L Dark Green/Opal for Leaves, Scrap

14-D Gold Pink/Silver/Opal/Crystal Dense Opal for Flowers, Scrap

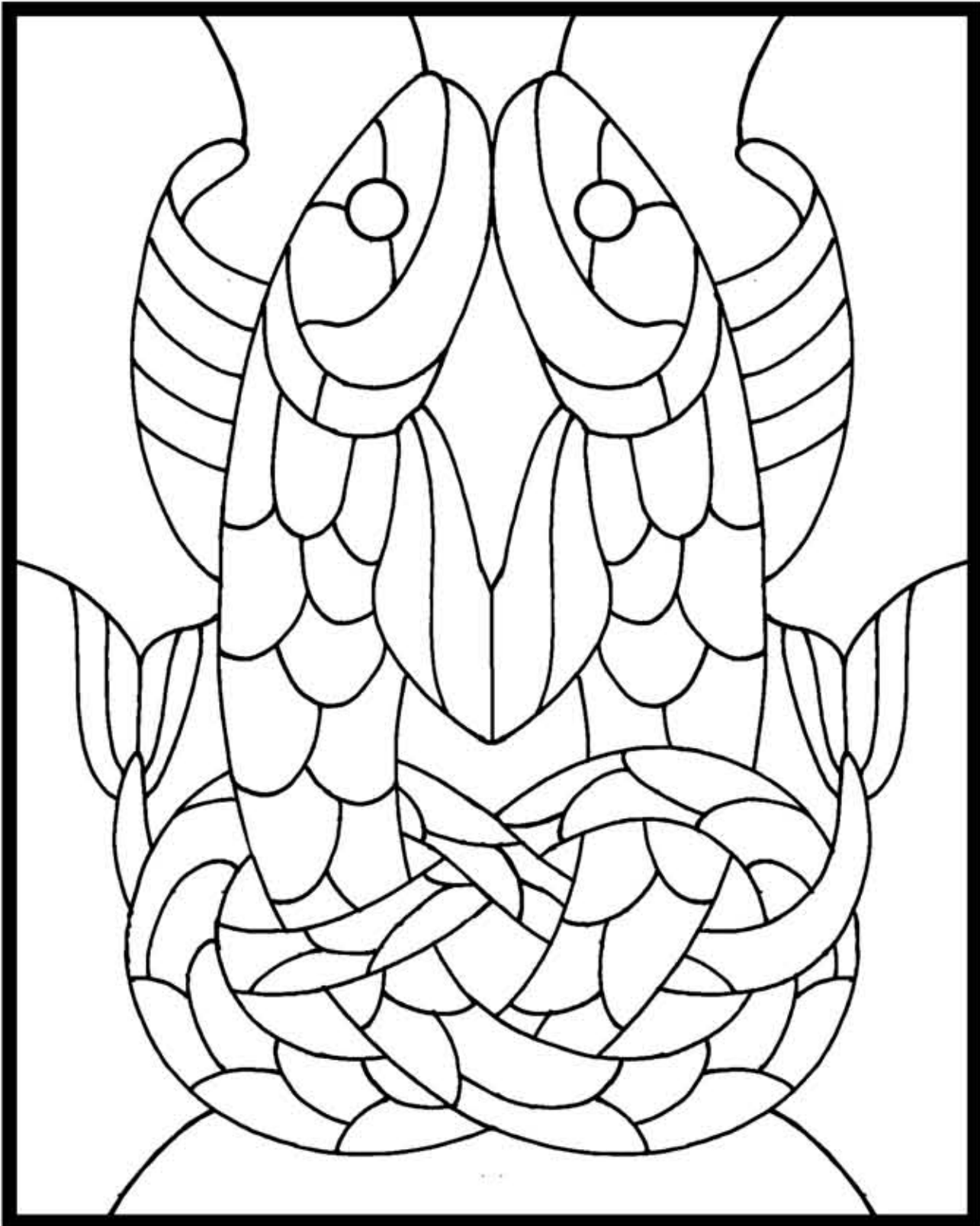
WO-217 Medium Purple/Yellow Green/Opal/Crystal Wissy for Jewel, Scrap

Tools and Materials

7/32" Copper Foil Flux Solder

Black Patina 1/2" Zinc U-Channel

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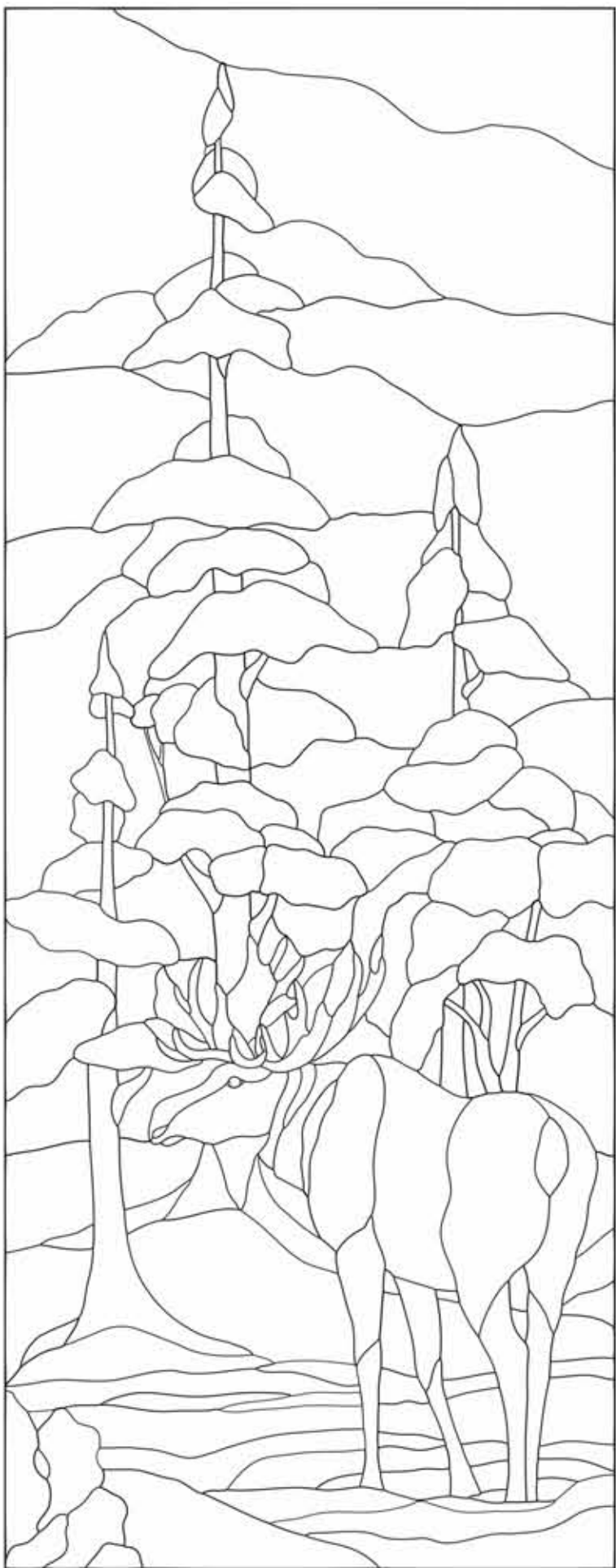
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Celtic Salmon

Design by Chantal Paré
Wissmach Glass Co.
199-LL Medium Amber/Dark Amber Brown Ripple, Scrap
441-LL Dark Purple/Dark Blue/Medium Green/Opal/Crystal Granite, 4 Sq. Ft.
346 Dark Yellow Green Granite, 1 Sq. Ft.
Pilkington Textured Glass
Clear Flemish™, 4 Sq. Ft.

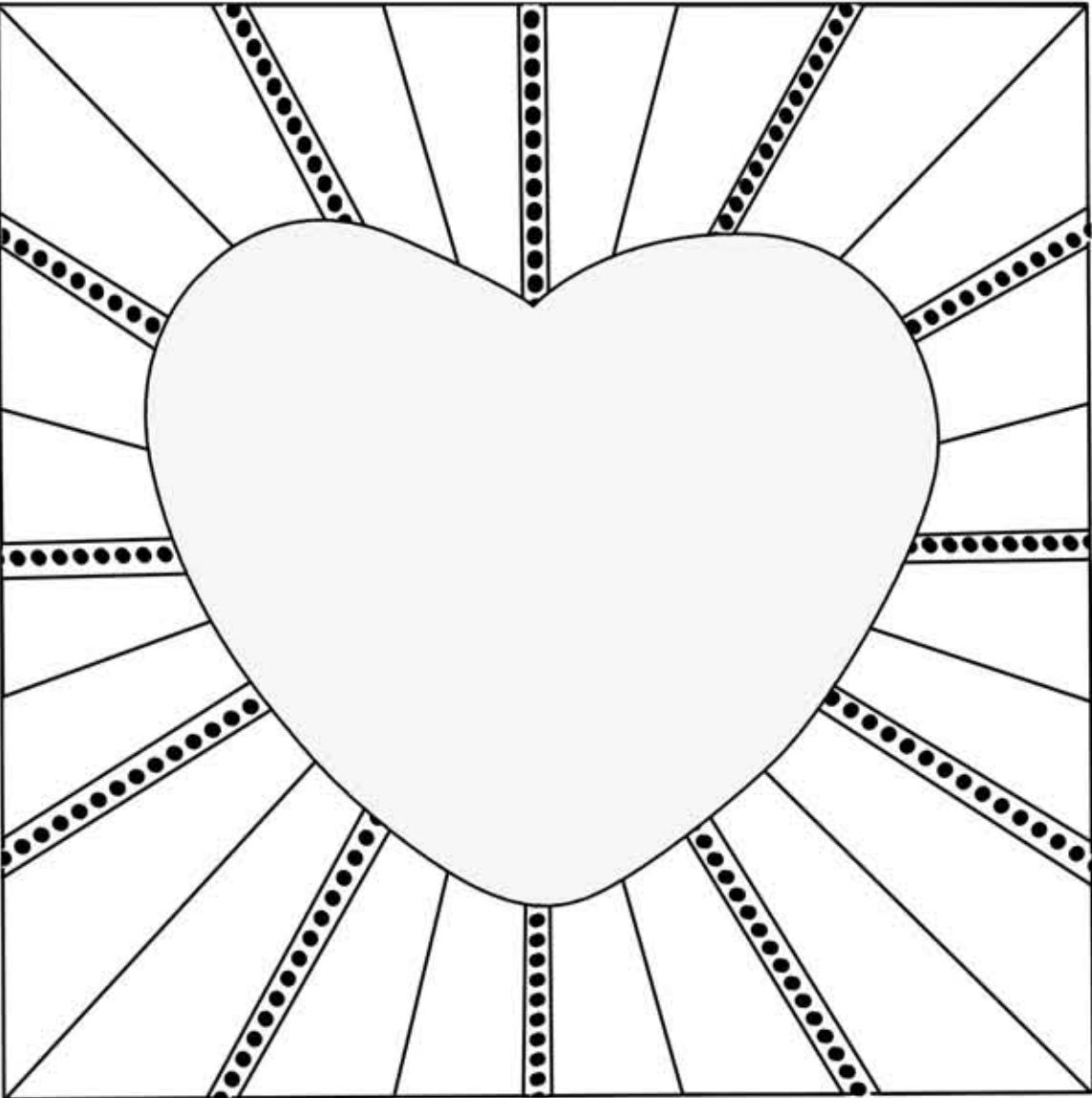
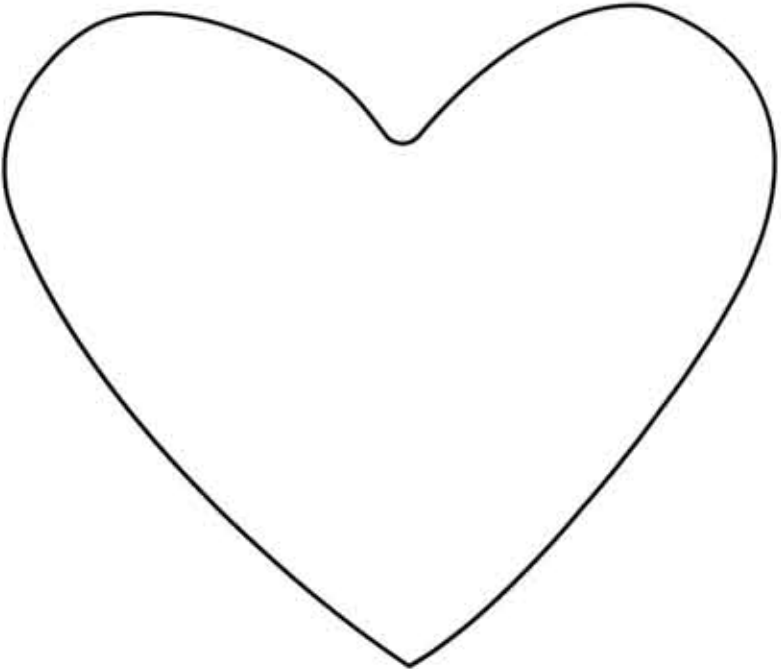
Moose Lake

Design by Mary Harris
Wissmach Glass Co.
441-L Dark Purple/Dark Blue/Medium Green/
Light Opal/Crystal for Top of Sky, 1 Sq. Ft.
444-L Light Blue, Red/Light Opal
for Bottom of Sky, 1 Sq. Ft.
51-DDXXM Dense Opal
for Cloud, Scrap
65-D Medium Brown/Blue/Dense Opal
for Water, 1/2 Sq. Ft.
112-L Dark Green/Dark Amber/Light Opal
for Bush and Tree, 1/2 Sq. Ft.
199-LL Medium Amber/Dark Amber Brown Streaky
for Antlers and Pine Trunks, 1/2 Sq. Ft.
223-LL Light Amber/Dark Brown Streaky
for Tree Trunk, Scrap
71-L Dark Brown/Green/Light Blue/Light Opal/Crystal
for Moose, 3/4 Sq. Ft.
101-D Dark Green/Dense Opal/Crystal
for Pine Needles, 3/4 Sq. Ft.
217-LL Medium Purple/Yellow Green/
Opal/Crystal Streaky for Ground, 1 Sq. Ft.



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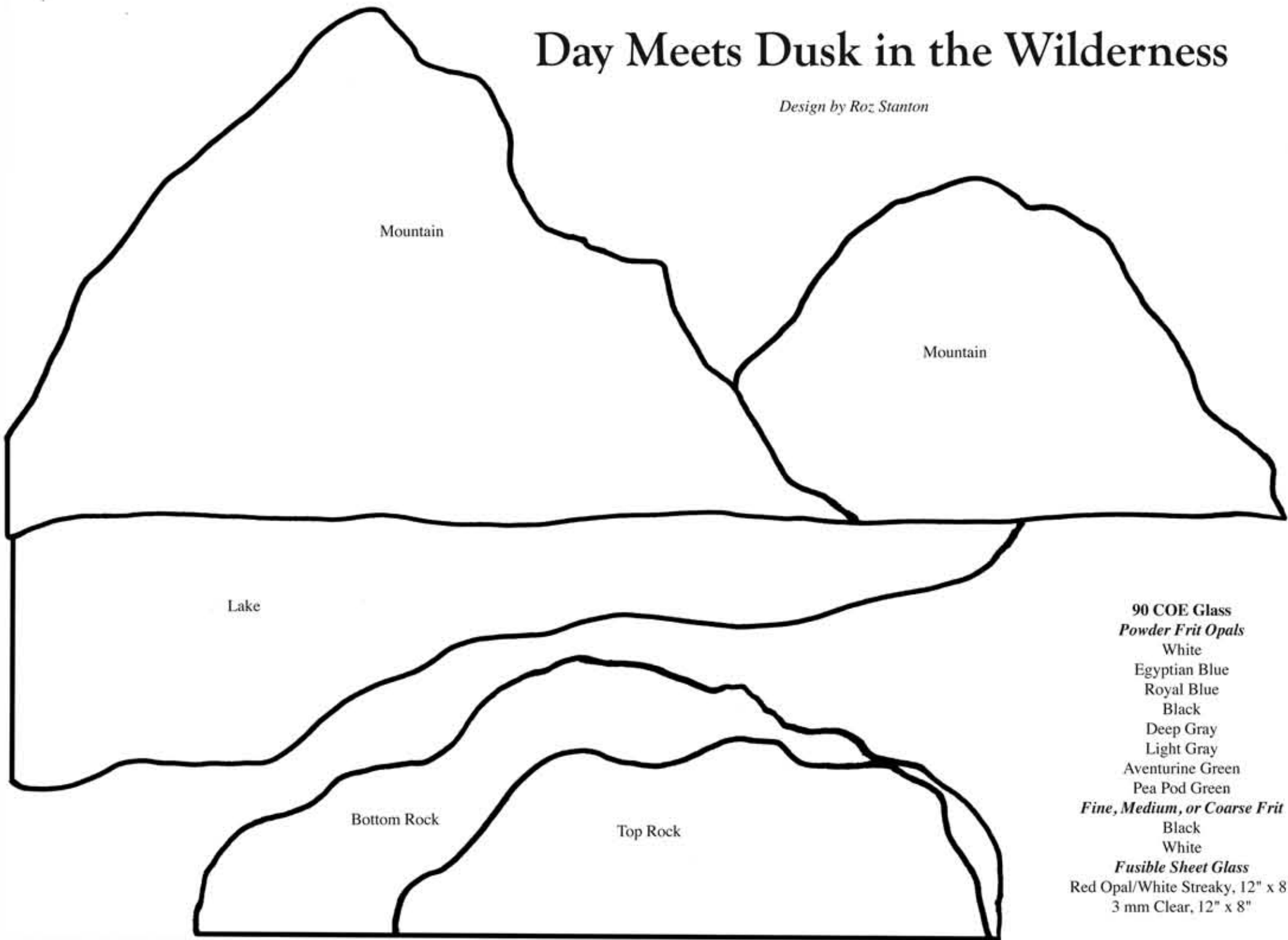


Fused Mosaic Radiant Heart

Design by Cherie Bosela
Fusible Glass
Clear
Neo-Lavender
Fuchsia Chunky Frit
Turquoise Blue Medium Frit
White and Pink 1 mm Fusible Stringers
Art Glass
Transparent Turquoise and White Streaky
Opalescent Turquoise Glass
Glass Beads
11/0 Pink Seed Beads

Day Meets Dusk in the Wilderness

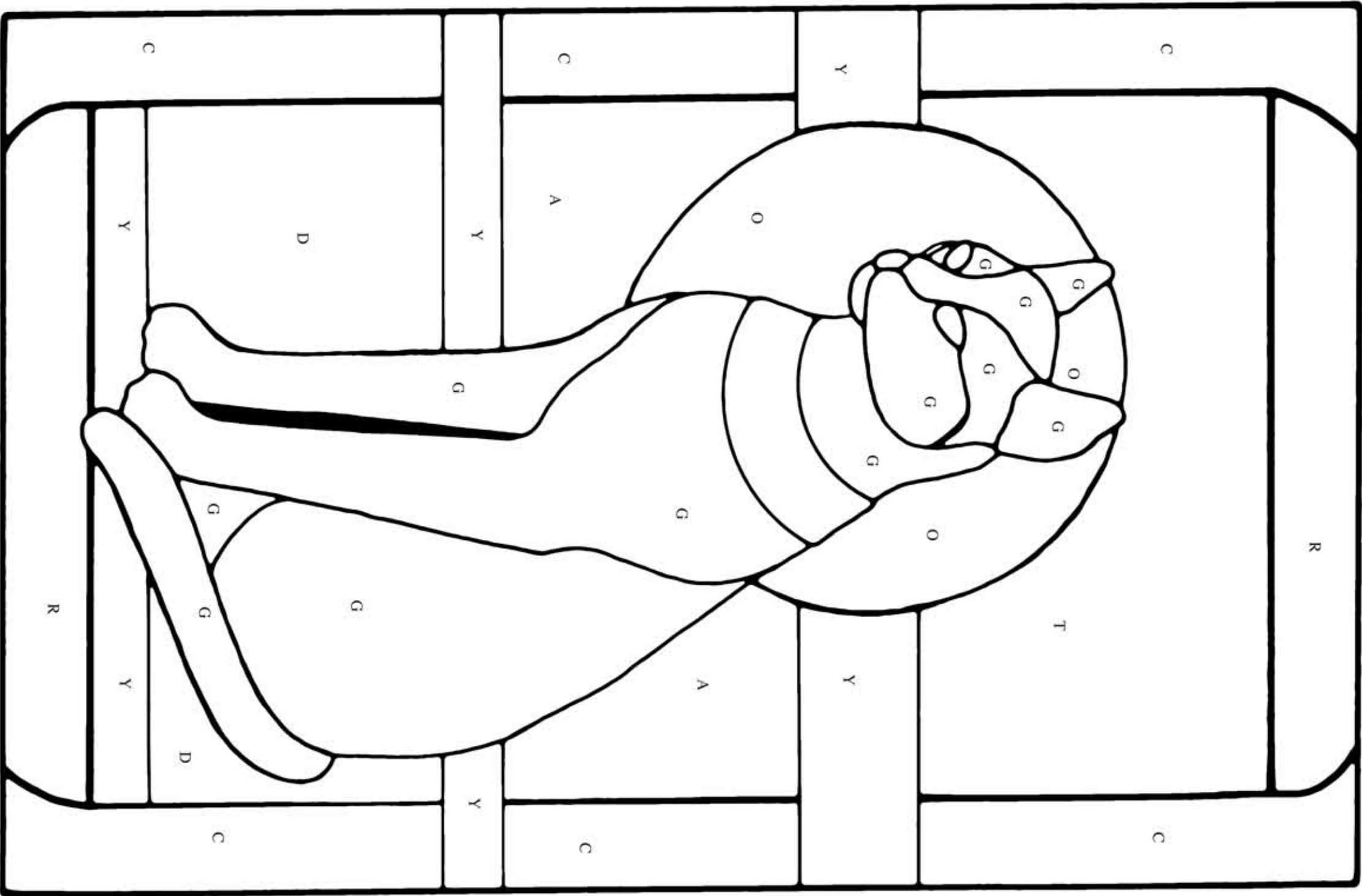
Design by Roz Stanton



90 COE Glass
Powder Frit Opals
White
Egyptian Blue
Royal Blue
Black
Deep Gray
Light Gray
Aventurine Green
Pea Pod Green
Fine, Medium, or Coarse Frit
Black
White
Fusible Sheet Glass
Red Opal/White Streaky, 12" x 8"
3 mm Clear, 12" x 8"

Bastet, Egyptian Cat Goddess

Design by Leslie Gibbs



Art Glass
G - Dark Grey Iridized Cathedral
for Head and Body, 8" x 8"
C - Iridized Green for
Left and Right Borders, 6" x 6"
R - Deep Royal Blue Iridized
for Top and Bottom Borders, 7" x 2"
T - True Blue
for Top Background Panel, 7" x 3"
A - Turquoise Blue Iridized
for Center Background Panel, 4" x 3"
D - Turquoise Blue for
Bottom Background Panel, 5" x 3"
O - Orange Iridized for Sun, 5" x 5"
Y - Light Orange Iridized for Horizontal Bars, 5" x 8"
001125.0051 Thin Orange Iridized
for Bottom Layer of Collar, 3" x 1"
001101.0030 Clear for Capping
Dichroic Glass on Eye Section, Serp
MP0100.0309 Mixed Pattern Dichroic Sizzle Silk
for Collar, Assorted Serp 1/2" Long
Dichroic Glass
DS1TB-BG Dichroic Thin Blue Gold for Eyes, Serp
F53WC/RB90 3 mm Wavy Dichroic Fire Sticks
for Optional Top and Bottom Border Accents, 12" strip



Mission Style Crow

Design by Tina Ziegel

Wissmach Glass Company

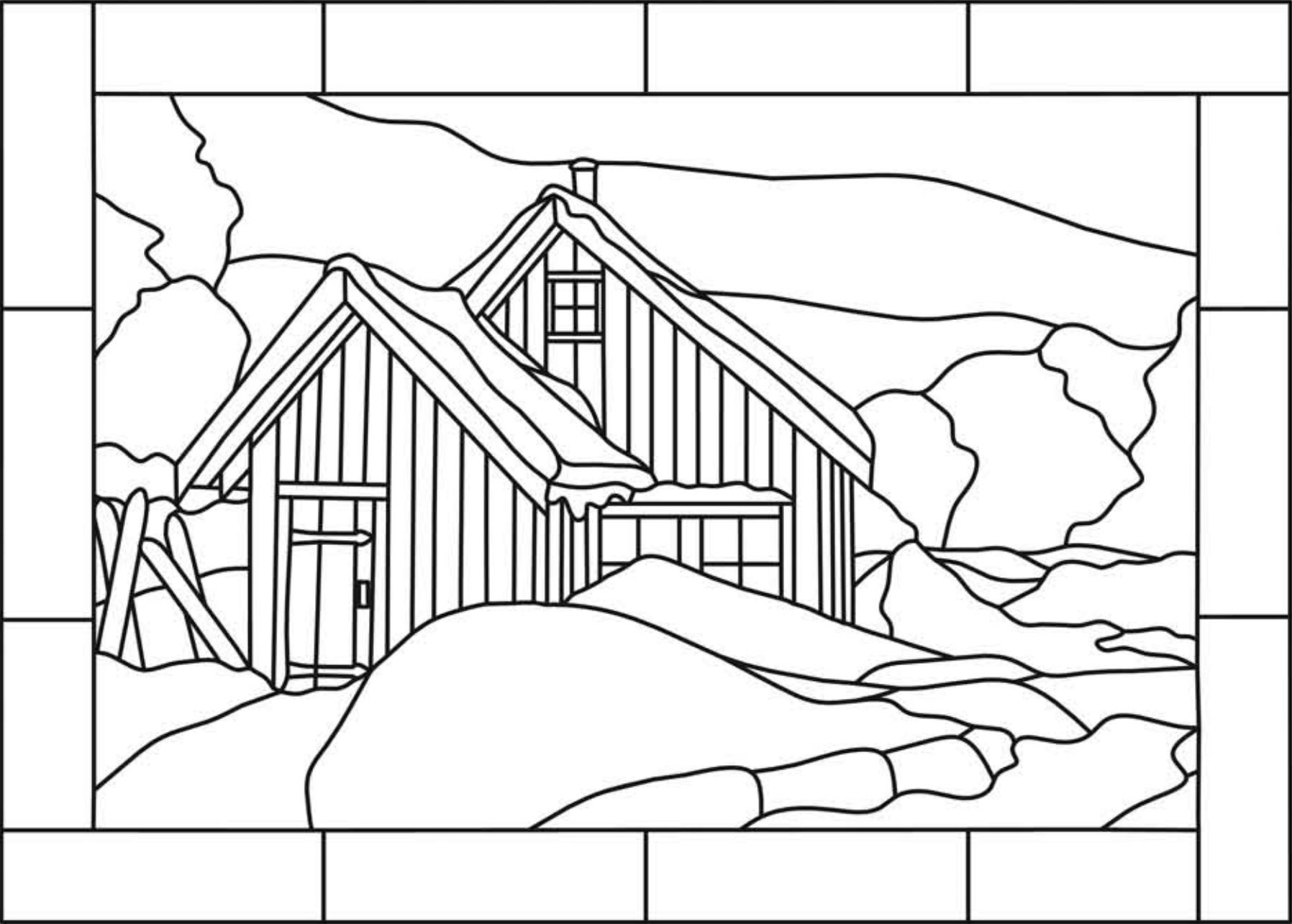
B - Dense Black for Crow, 1 Sq. Ft.
P - Dark Purple/Dark Blue/Opal Crystal Wissy for Beak and Leg, Scrap
M - Gray Opal/Dark Gray/Light Opal Iridescent for Moon, 3/4 sq. Ft.
S - Opal/Dark Gray/Brown Wissy for Background, 1 Sq. Ft.
T - Dark Purple/Green/Light Opal/Crystal Streaky for Branches, Scrap
L - Dark Green/Opal for Leaves, Scrap
F - Gold Pink/Silver/Opal/Crystal Dense Opal for Flowers, Scrap
J - Medium Purple/Yellow Green/Opal/Crystal Wissy for Jewel, Scrap

Ski Retreat

Design by Kevin Thornhill

Wissmach Glass Company

272-L Light Opal/Light Blue/Mauve Light Opal Base for Sky and Water, 2 Sq. Ft.
191-D Medium Green/Opal/Crystal Dense Opal Base for Trees, 2 Sq. Ft.
WO-101 Dark Green/Opal/Crystal Wissy for Trees, 1/2 Sq. Ft.
77-L Light Brown/Yellow Green/Light Opal Base for Cabin Siding, 2 Sq. Ft.
155-LL Dark Purple/Green/Light Opal/Crystal Streaky for Cabin Trim, 1 Sq. Ft.
315-D Medium Amber/Light Opal Base for Windows, 1/2 Sq. Ft.
WO-51 White Cast Opal Wissy for Snow, 2 Sq. Ft.
51-DDXXM-IRID Opal/Crystal Iridescent for Snow and Border, 4 Sq. Ft.
613-L Williamsburg Blue/Opal/Crystal Light Opal Base for Chimney, Scrap
WO-29 Dark Red/Opal/Crystal Wissy for Skis, Scrap
1-L Silver Yellow/Opal/Crystal Light Opal Base for Skis, Scrap



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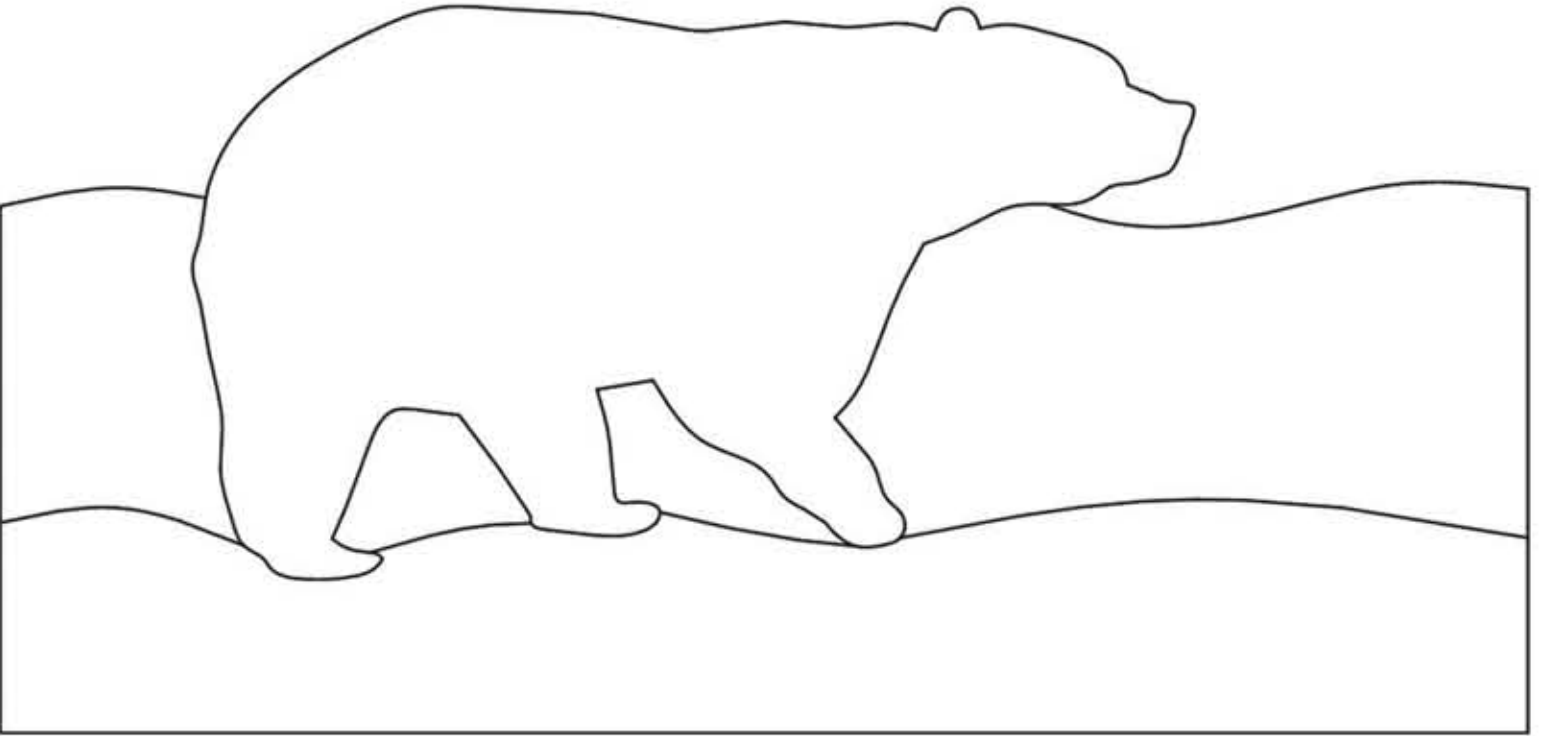
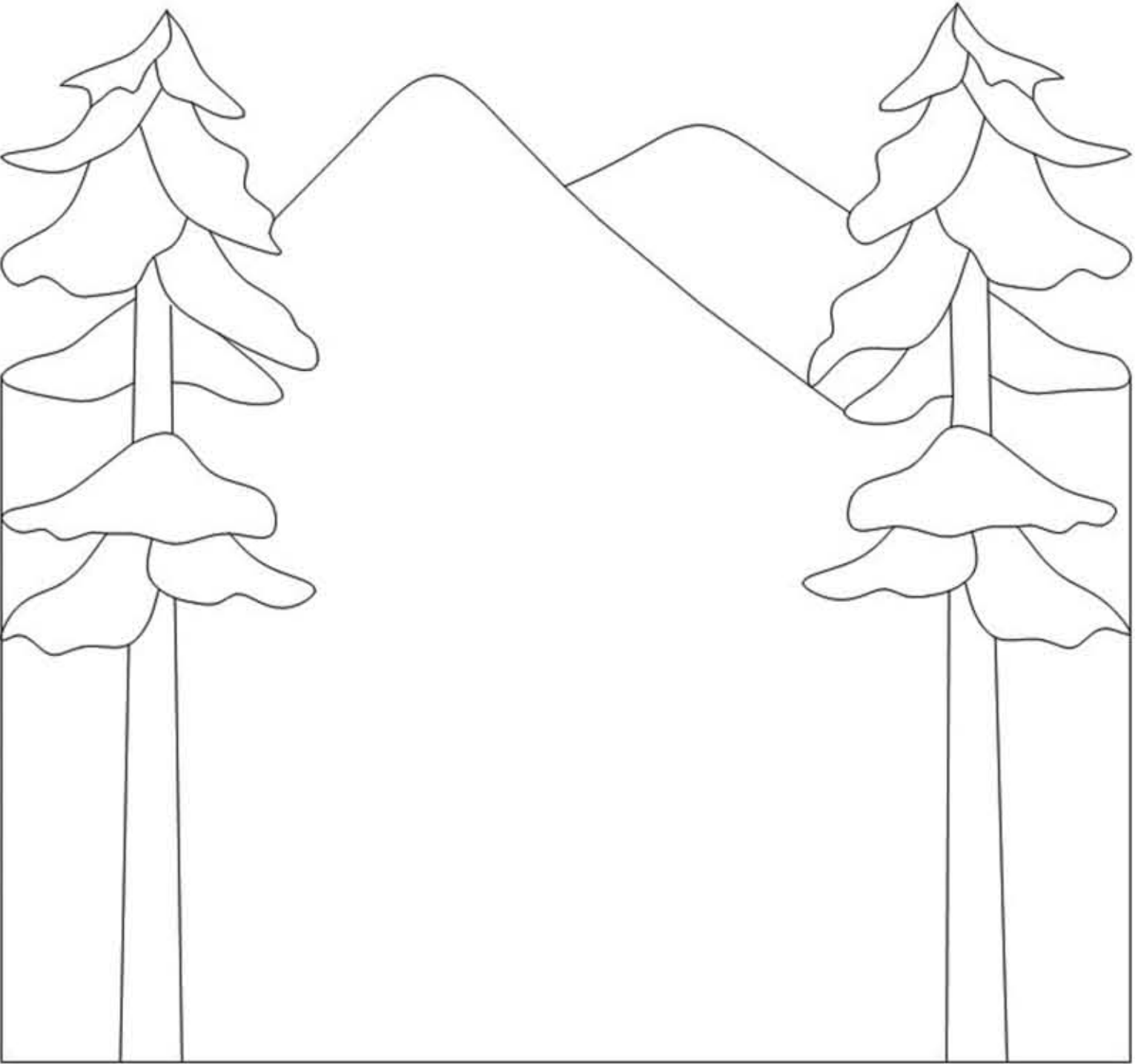
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Gray Wolf

Design by Jean Beaulieu

Wissmach Glass Company

555 Light Gray for Wolf, 1-1/2 Sq. Ft.
613-D Williamsburg Blue/Opal/Crystal Dense Opal Base for Wolf, 1-1/2 Sq. Ft.
613-L Williamsburg Blue/Opal/Crystal Light Opal Base for Wolf, 1-1/2 Sq. Ft.
1-L Silver Yellow/Opal/Crystal Dense Opal Base for Eyes, Scrap
65-D Medium Brown/Blue Light Opal Base for Background, 2 Sq. Ft.
BLACK Dense Black for Nose, Eyes, Mouth, and Border, 2 Sq. Ft.



Bear Luminary

Design by Lisa Vogt

Wissmach 96™

96-01 Clear Transparent for Base Layers of Mountain, Bear, and Stand, 1-1/2 Sq. Ft.
96-29 Dark Blue/White Prisma for Mountain, 1/2 Sq. Ft.
96-37 Reactive Blue/Oyster Pearl Prisma for Tree Trunks and Bear, 1/2 Sq. Ft.
96-35 Blue/Olive Green Prisma for Tree Limbs and Pine Needles, Scrap
96-34 Olive Green/Blue Prisma for Foreground Grass, Scrap
96-32 Olive Green/White for Background Grass, Scrap
96 COE Frit
F2-138-96-8 Aventurine Blue Fine Frit for Tree Limb Shadows
F2-200-96-8 White Frit Fine for Snow

Ski Retreat

Design by Kevin Thornhill, Text by Delynn Ellis



Imagine that this cozy cabin can be just about anywhere skiing is abundant. Have fun creating the wood slats with a strip cutter, being sure to utilize the variegated colors found in this Wissmach glass to mimic cabin siding. The snow, stream, and skis held by a snowdrift are sure to conjure up fond memories of ski trips gone by.

This 20" x 28" design is from Kevin Thornhill, retired stained glass artist and former creator of the patterns for Focal Point Glassworks. Kevin now enjoys making jewelry when the mood hits him. He creates sterling silver pendants, earrings, and rings in St. Petersburg, Florida. **GPO**

Wissmach Glass Company

- 272-L Light Opal/Light Blue/Mauve Light Opal Base for Sky and Water, 2 Sq. Ft.
- 191-D Medium Green/Opal/Crystal Dense Opal Base for Trees, 2 Sq. Ft.
- WO-101 Dark Green/Opal/Crystal Wisspy for Trees, 1/2 Sq. Ft.
- 77-L Light Brown/Yellow Green/Light Opal Base for Cabin Siding, 2 Sq. Ft.
- 155-LL Dark Purple/Green/Light Opal/Crystal Streaky for Cabin Trim, 1 Sq. Ft.
- 315-D Medium Amber/Light Opal Base for Windows, 1/2 Sq. Ft.
- WO-51 White Cast Opal Wisspy for Snow, 2 Sq. Ft.
- 51-DDXXM-IRID Opal/Crystal Iridescent for Snow and Border, 4 Sq. Ft.
- 613-L Williamsburg Blue/Opal/Crystal Light Opal Base for Chimney, Scrap
- WO-29 Dark Red/Opal/Crystal Wisspy for Skis, Scrap
- 1-L Silver Yellow/Opal/Crystal Light Opal Base for Skis, Scrap

Tools and Materials

- 7/32" Copper Foil Flux Solder
- Black Patina 1/2" U-Channel Zinc

Gray Wolf

Design by Jean Beaulieu, Text by Darlene Welch



Gray wolves, also known as timber wolves or Western wolves, evoke thoughts of the wild like few others members of the animal kingdom. Part of the canine family, they range in color from grizzled gray or black to all-white. Wolves once roamed freely throughout the United States but nearly disappeared from the lower forty-eight states due to hunting practices and a loss of habitat. Thankfully they have returned to the Great Lakes, Northern Rockies, and Southwestern areas of the U.S. through the efforts of animal conservationists and the establishment of the Endangered Species Act in the 1960s and continue to grow in number each year.

This 18" x 18" stained glass design from Jean Beaulieu is part of the offerings in his pattern book, *Wildlife: Illustrated Designs of Wildlife*, and is one of twelve designs of close-ups of larger animals. Also included are a puma, stag, deer, lynx, moose, fox, raccoon, bear, squirrel, falcon, and eagle. Each pattern is shown in full color with color suggestions included and can be used in panels or as free-form projects. Find this and other great pattern collections from the artist by visiting www.jeanbeaulieu.com.

GPQ

Wissmach Glass Company

555 Light Gray for Wolf, 1-1/2 Sq. Ft.

613-D Williamsburg Blue/Opal/Crystal Dense Opal Base for Wolf, 1-1/2 Sq. Ft.

613-L Williamsburg Blue/Opal/Crystal Light Opal Base for Wolf, 1-1/2 Sq. Ft.

1-L Silver Yellow/Opal/Crystal Dense Opal Base for Eyes, Scrap

65-D Medium Brown/Blue Light Opal Base for Background, 2 Sq. Ft.

BLACK Dense Black for Nose, Eyes, Mouth, and Border, 2 Sq. Ft.

Tools and Materials

7/32" Copper Foil Flux Solder

Black Patina 1/2" Zinc U-Channel

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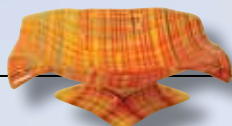
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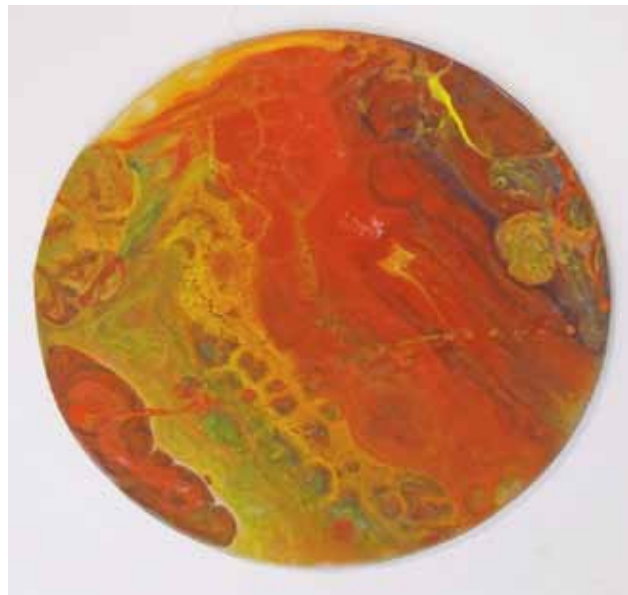
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Bear Luminary

Design, Fabrication, and Text by Lisa Vogt



This woodland luminary is a surefire cure for cabin fever. Don't let winter's long, cold days bring you down. Cozy up to this warmhearted bear, and his glowing flame will light up your home as well as your creative spirit with comfort and joy.

The freestanding aspect of this piece, paired with a combination of simple designs, makes it a lot of fun to build. It may look complicated, but once you see how the construction is broken down, you'll be eager to get started.

This project is made in three parts that are glued together to make a nature themed, stand-alone candle shelter. Let's start with the majestic mountain background.

Wissmach 96™

96-01 Clear Transparent for Base Layers of Mountain, Bear, and Stand, 1-1/2 Sq. Ft.

96-29 Dark Blue/White Prisma for Mountain, 1/2 Sq. Ft.

96-37 Reactive Blue/Oyster Pearl Prisma for Tree Trunks and Bear, 1/2 Sq. Ft.

96-35 Blue/Olive Green Prisma for Tree Limbs and Pine Needles, Scrap

96-34 Olive Green/Blue Prisma for Foreground Grass, Scrap

96-32 Olive Green/White for Background Grass, Scrap

96 COE Frit

Aventurine Blue Fine Frit for Tree Limb Shadows

White Frit Fine for Snow

Tools and Materials

Fusers Glue Small Paint Brushes
Toothpick Plastic Spoon Scissors
10" x 9" x 4" Sconce Slumping Mold
1/2"-Thick 8" x 7" Fiber Board Masking Tape
Glue Stick Permanent Marker
Industrial Strength Adhesive
Votive Candleholder Votive Candle

1

Using the pattern as a guide, cut the clear glass for the base.



I cut as much as possible by hand. Then the remainder of the design, the intricate inside curves, are drawn on the clear glass with a marker. The marker is then coated with lip balm to keep it from washing away during sawing. The tight cuts are cut with a ring saw.

I prefer to build the background portion on a single base, since it makes laying out the cut tree limbs easier. It's also easier to move the assembled project into the kiln. If you don't have a saw, however, don't worry. The base can just as easily be made up of pieces and assembled directly on a kiln shelf.

2

Cut the design layer, which includes the snow covered mountains and the pine trees.

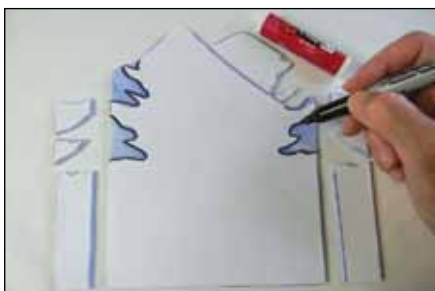


When making complex designs such as this one, I like to work from a copy of the original pattern. It simplifies the cutting and grinding steps. Working from a paper pattern also dramatically improves the overall fit of the cut glass pieces. It's a bit tedious, but the extra effort shows in the quality of the finished product.

Copy the pattern and cut out the pieces with scissors. Glue the cut paper to the corresponding glass.

3

Draw the deep inside curves of the trees on the glass with a marker, then coat the lines with lip balm.



4

Cut out the tight shapes of the notches for the tree limbs in the background glass with a saw.



5



Cut out the tree trunk and limb pieces.



Use a scissors to cut out the paper pattern pieces and glue them to the glass. Cut out the tree trunks and limbs according to the respective pattern pieces as closely as possible to the paper.

6

Grind the cut glass to smooth the edges to improve the fit.



7

Assemble the ground glass pieces on top of the clear base piece and glue the design pieces in place with fusers glue.



8



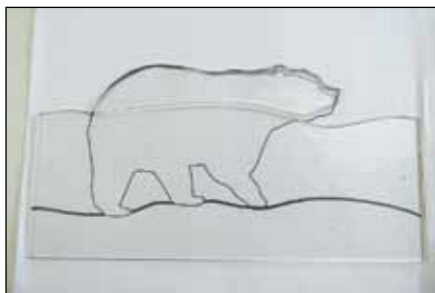
Once the glue is dry, fill in any gaps between the tree limbs with a small amount of fine dark blue frit.



The final touch is fine white frit on the tops of the limbs to represent freshly fallen snow.

9

Cut the clear glass base for the foreground panel.



The front portion of the design is much simpler, so I opted to make the clear base in two pieces. Cut the clear according to the pattern, grind the edges, and set aside.

10

Glue the foreground pattern pieces to the glass.



11

Cut the foreground glass.



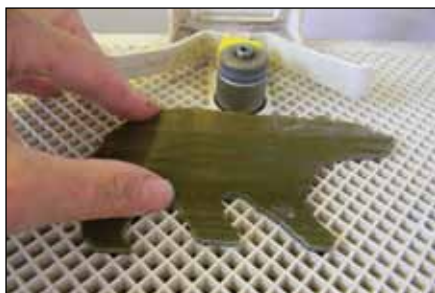
12

Draw the bear pattern on the glass and cut out the bear using a saw.



13

Grind the bear to improve his body shape and to give his ear more detail.



14

Stack the foreground design layer on top of the clear base.



15

Add a few lines of the fine white frit for a snowy finish.



16

Assemble the glass pieces in the kiln and fire to a full fuse.



Before firing the project, you will also need to cut the glass for the stand, which is super simple. Cut a piece of clear glass and a piece of white glass to 4-1/2" x 11" each. Stack the white on top of the clear and place them in the kiln along with the foreground and background pieces. Fire the three assembled glass sections to a full fuse temperature using the guide provided at the end of the tutorial.

17



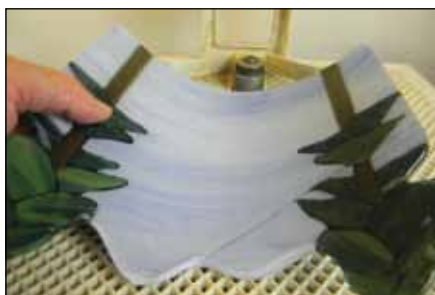
Slump the front, back, and stand portions of the project.



Slump the front and back portions over the barrel-shaped scone mold. Use an 8" x 7" piece of 1/2"-thick fiber board as a slumping mold for the stand. Follow the suggested slumping guide provided at the end of the tutorial.

Carefully grind the bottom edges of the background and foreground glass pieces.

18



Grinding the bottom edges of the background and foreground adds texture to the glass, which will increase the strength of the glue and the durability of the project.

19

Assemble and glue the background and foreground pieces to the stand.



Technique Tips

- Be sure to thoroughly clean all of your glass with water and dry it with a towel before assembling the project.
- When assembling the project, use the smallest amount of glue possible. That way it will burn off without leaving any residue.

Apply a line of industrial strength adhesive to the bottom edge of the back and front pieces. Position them on the stand and secure them with masking tape. Apply a bead of glue on the inside of the glass where the front and back vertical edges come together. Allow the glue to dry overnight. Now all that's left is to place a candle inside, light it up, and enjoy!

GPO

Lisa Vogt discovered glass while pursuing an education in fine art. For more than twenty-five years, this award-winning artist has drawn upon her fine arts background and own sense of style, drama, and whimsy to combine this historic medium with innovative glass techniques for limitless design possibilities. Her work has been on exhibit in major cities throughout the United States.

Lisa is the author of fourteen design books and a series of instructional videos in addition to frequent articles for industry magazines and fiction for publication. She also lectures at national and regional seminars and has been a featured artist on HGTV, PBS, and Glass Patterns Quarterly Webinars. A huge supporter of public art, Lisa regularly contributes artwork for auction to benefit local, regional, and national charities. Her home and studio are located north of Tampa Bay in Wesley Chapel, Florida, where she resides with her husband and two daughters. Visit www.LisaVogt.net to find out more about her work and seminars.



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Firing Schedules


NOTE: All kilns fire differently. Test-fire these guides in your own kiln and make any adjustments as needed.

Full Fuse Schedule

- Segment 1: Ramp 300°F/hr to 1300°F and hold 30 min.
 - Segment 2: Ramp 500°F/hr to 1465°F and hold 10 min.
 - Segment 3: Ramp 9999 (AFAP*) to 960°F and hold 40 min.
 - Segment 4: Cool to room temperature.
- *as fast as possible

Slumping Schedule

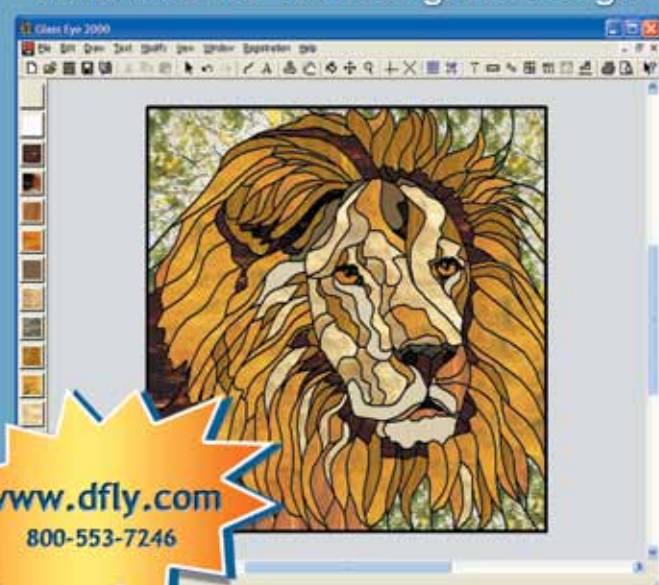
- Segment 1: Ramp 300°F/hr to 1265°F and hold 10 min.
 - Segment 2: Ramp 9999 (AFAP*) to 960°F and hold 40 min.
 - Segment 3: Cool to room temperature.
- *as fast as possible



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Fused Mosaic Radiant Heart

Design, Fabrication, and Text by Cherie Bosela

Valentine's Day is right around the corner, and who doesn't like to give and receive hearts? With the following pattern and detailed instructions on fusing, gluing, and grouting, the eclectic combination of materials is sure to make this a one-of-a-kind gift for yourself or others. You can make your own 6" x 6" Radiant Heart with the colors of fuchsia, turquoise, and lavender shown here, or feel free to choose your own. Let's begin!



Fusible Glass

Clear

Neo-Lavender

Fuchsia Chunky Frit

Turquoise Blue Medium Frit

White and Pink 1 mm Fusible Stringers

Art Glass

Transparent Turquoise and White Streaky

Opalescent Turquoise Glass

Glass Beads

11/0 Pink Seed Beads

Tools and Materials

Fusing Adhesive Glass Cutter Tweezers

Running Pliers Wet Ring Saw

Kiln Gloves Permanent Marker

Transfer Paper Pencil Clear Gel Medium

6" x 6" Wooden Cradle Board

Silver Chunky Foil Glitter

White Gesso Primer Black Paint

Dental Pick Beading Needle and Thread

Epoxy Modeling Compound

Microfiber Towel Black Sanded Grout

PVA Adhesive

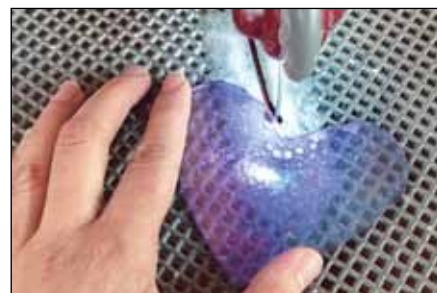
1

Trace the heart pattern onto one piece of neo-lavender glass and 2 pieces of clear glass for a total of 3 hearts.



2

Cut the heart shapes out using a wet ring saw.



3

Stack the hearts and add pieces of the white and pink stringers to the top heart.



When stacking the hearts, place one of the clear hearts on the bottom and the neo-lavender heart on top. Use a fusing adhesive to secure pieces of white and pink 1 mm stringers to the glass, replicating the look of grout lines in a mosaic.

4

Add chunky and medium colored frit to decorate the heart.



Glue on pieces of the chunky fuchsia frit in the spaces between the stringers, then sprinkle the turquoise blue medium frit all over the heart. Place the heart in the kiln and fire using the following suggested schedule. Remember that each kiln fires differently, so you may need to adjust it to fit your own particular kiln.

Firing Schedule

Segment 1: Ramp 400°F/hr to 1000°F and hold 10 min.

Segment 2: Ramp 600°F/hr to 1375°F and hold 30 min.

Segment 3: Ramp 9999 (AFAP*) to 900°F and hold 30 min.

Segment 4: Ramp 100°F/hr to 700°F and no hold.

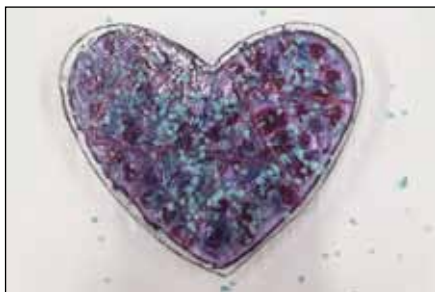
Segment 5: Ramp 9999 (AFAP*) to 0°F and no hold.

*as fast as possible

Take the fused heart out of the kiln and flip it over. Glue pink 1 mm stringers on the back side of the heart, replicating the grout lines in a mosaic as you did for the other side. Sprinkle turquoise blue medium frit all over the back side of the heart.

5

Place the second clear heart on top of the turquoise heart and sprinkle turquoise blue medium frit all over the heart again.



Fire a second time using the same firing schedule that you used in step 4. While the heart is cooling, paint the wooden cradle panel that will surround the heart with white gesso primer and let dry.

6

Place the fused heart in the center of the white board and trace around it with a pencil.



7

Use the pattern and transfer paper to trace the lines for the rays onto the white board.



8

Fill in the heart-shaped area with silver glitter.



Paint the interior of the heart shape on the white board with a clear gel medium and sprinkle the area you just painted with a chunky silver glitter foil.

9

While the glitter is drying, measure and cut the blue glass rays that will be added to the board.

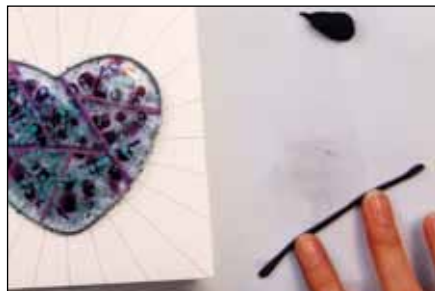


Use the pattern to trace the rays onto the transparent turquoise and white streaky glass and the opalescent turquoise glass, then cut out the rays. I like to leave the ends on, then I cut them when I glue them in place to make sure they fit exactly. Here I have alternated placing the two different shades of blue glass.

Number all the pieces to keep them in order. Cover the entire back of the fused heart with the PVA adhesive and place it on the board.

10

Mix a small amount of the epoxy modeling compound and roll it into a thin snake shape.



Place the rolled compound on one of the lines drawn for the rays.

11
String the seed beads and apply them to the design on top of the epoxy modeling compound for every other line.



String size 11/0 pink seed beads onto a beading needle and thread. Hold one side of the thread and place the beads on the snake of epoxy modeling compound, lightly pushing them into the snake. Repeat steps 10 and 11, skipping every other line on the white board until all 12 lines are done.

12
Add the blue glass rays.



After all the beads are laid down, take the first piece of turquoise and white streaky glass, lay it over the section where you will be placing it, and use the permanent marker to draw a line to indicate where to cut the glass up against the heart. Score the line and break it.

Now place the piece down on the board and draw the line for the edge of the board. Score the line and break it as you did for the heart side, then glue the piece down with the PVA adhesive. Do this for every piece of the rays all the way around the heart.

13
Grout the heart.



Mix up some black grout, which should be thick like cake frosting. Put on a pair of gloves and use your fingers to spread the grout, pushing it into all the nooks and crannies. Let it sit for about an hour before cleaning it.

Use a damp sponge to clean the surface. Have a bucket of water nearby to use for cleaning the sponge. Keep cleaning the surface until all the grout is off the glass surface. Don't worry about cleaning all of the grout from around the beads. That's the next step. Let the piece sit for about an hour.

Scrape the grout off of the beads with the dental pick, then clean the beads with the damp sponge. Let the piece dry again for about an hour. Then use a microfiber towel to do the final cleaning. Just wipe the surface with a little water. To finish the piece, paint the edges of the board. I used black paint to match the grout.

GPO

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Living and growing up in Florida, Cherie Bosela is inspired by the lush natural scenery that surrounds her and loves taking photographs of the flowers and critters. Her work is also inspired by her travels, and she always tries to capture the essence of the moment to express something that made an impact on her. She takes these photographs and re-creates them as a mosaic using stained glass, beads, millefiori, and smalti and her original photography under the glass, giving life back to that little moment and an experience to all who pass it.

About a year ago, Cherie quit her day job to become a full-time artist. Her artwork has been included in exhibits at The Museum of Glass in Tacoma, Washington, 1st Thursdays at the Orlando Museum of Art, Mayor's Gallery in Orlando's City Hall, and CityArts Factory, to name just a few. Several pieces of her artwork have also been published in Bonnie Fitzgerald's Guide to Mosaic Technique. Something new that she has started to play with is glass fusing to print her photography onto the glass and make her own glass to use in her mosaic artwork.

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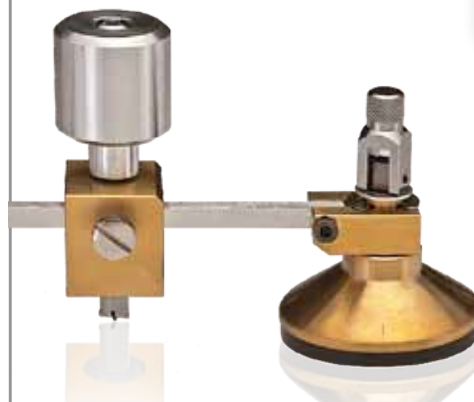
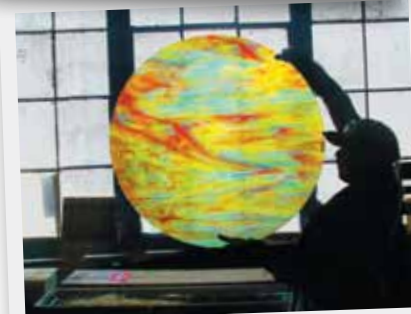
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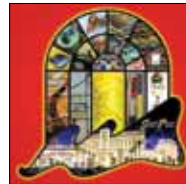
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same time. The LF166 Poinsettia Ornaments mold will fire three poinsettias at one time in sizes varying from 3" to 4-1/4" diameters that will make great ornaments for your holiday greenery or a lovely addition to a fused candleholder.

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The Glass Craft & Bead Expo has opened registration with 278 classes—more than ever, to be exact. Eighty-one highly qualified instructors will include twenty-seven new and seven returning teachers back by popular demand, all teaching the skills and techniques that artists crave. Glass Craft & Bead Expo and the International Society of Glass Beadmakers (ISGB) will also come together again to offer an amazing opportunity in 2018. ISGB will be holding its annual conference, The Gathering, April 3–8, and Glass Craft & Bead Expo classes will be held April 4–8, with the tradeshow running April 6–8. ISGB will add to the tradeshow with its Glass, Beads & Jewelry Bazaar on Saturday, April 7. This all takes place in one location at the South Point Hotel & Casino in Las Vegas, Nevada. Register now at the Expo website and visit www.isgb.org for more information on The Gathering.

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GPO

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Day Meets Dusk in the Wilderness

Design, Fabrication, and Text by Roz Stanton



I am lucky enough to live in the wilds of beautiful British Columbia, Canada. Looking out of my kitchen window, I can enjoy the beauty of lush mountains, a pristine lake, and gorgeous sunsets . . . that was until July 14, 2017, when wildfires ravaged our province, and Loon Lake became a victim of evacuation and devastation.

I was committed to doing this project, but I was forced to leave my home and kilns behind for five weeks and two days. Because I was not sure what I was coming home to, I just had to keep visualizing the beauty in my mind. This design is what I saw.

The process of making this project was so much fun. You can use your wildest imagination for the background or follow a structured design. Before you begin to develop the pieces that will be used for the design, you will need to fuse the Red Opal/White and Clear glasses together at a full fuse to form the background so it will be ready when needed using the schedule at the end of the article.

90 COE Glass

Powder Frit Opals

White
Egyptian Blue
Royal Blue
Black
Deep Gray
Light Gray
Aventurine Green
Pea Pod Green

Fine, Medium, or Coarse Frit

Black
White
Opal

Fusible Sheet Glass

Red Opal/White and Clear, 12" x 8"
3 mm Clear 12" x 8"

Tools and Materials

Glass Tattoo Goo (3 Packs)
Kiln Shelf Fiber Paper or Kiln Shelf Primer
2-ounce Squeeze Bottles (6) Brushes
Rubber-Tipped Modeling Tool
Tile Cutter Permanent Marker
Tweezers Snack-Size Zipper-Style Plastic Bags
Respirator Mask Epoxy
www.displayglassart.com
Aluminum Wolf Stand without Tree

1

Draw the rocks and mountains and prepare the various colors of Tattoo Goo for filling in the shapes.



At first I was going to use stencils, but I found it just as easy to draw the shapes freehand and improvise. This is what I decided on. The top figures are the mountains, and the bottom ones are the rocks that I will attach to the wolf stand toward the end of the project. Here, the shapes are drawn on a piece of kiln shelf fiber paper, but you can do it directly on a primed shelf if you prefer.

Mix the Tattoo Goo that will be used to fill in the shapes according to the directions. Wait for 6 to 8 hours, then put 3 tablespoons of Goo and 3 tablespoons of fine frit in a snack size zipper-type baggie and seal it. Knead the baggie until the frit and goo are evenly mixed, then cut the tip of one of the baggie's corners and squeeze the mixture into a 2-ounce bottle. Mix as many colors as you would like to use. The colors I used are only suggestions.

2

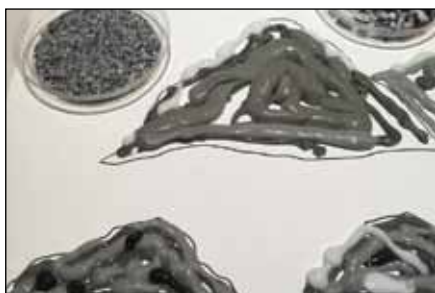
Select the glass you would like to use for the background.



The key to the background is to use a piece of glass that invokes the image that you would like. I wanted my wolf to be howling at the sunset, so I chose this red streaky piece of glass.

3

Fill in the mountain and rock shapes using the gray, black, and white Glass Tattoo Goo.



Using the grays, black, and white, squeeze the colors onto the drawing, overlapping the gray. Put thick amounts of the white around the edge and dabs of black on the gray. This can be done multiple times to create a very thick and rich looking design.

4

Using either the paintbrush or the rubber tip modeling tool, drag the colors around, lightly mixing them.



My personal preference for this task is the rubber tip on the modeling tool. You will find that the colors have the consistency of pudding, so it will take a bit of movement to get them to adhere to each other. **Note:** This product is going to shrink in the kiln, so err on the side of abundance.

5

Keep adding the color and moving it around.

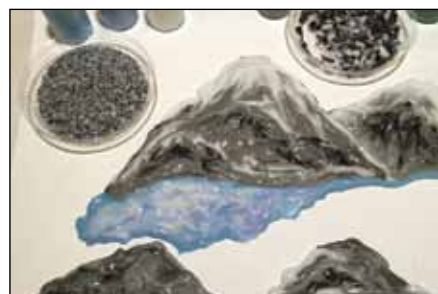


Put a really thick layer of white on the edge. Remember that the white will fade into the darker colors, so start off on the edge but overlap them as well. Only use dabs of black, since that color will go a long way.

Do **not** be afraid to use lots of colored Goo—the more the better. Mix more as you need it. Chances are you will still get spaces where the Goo separates during firing, but don't worry about that, since you can always fill those in later.

6

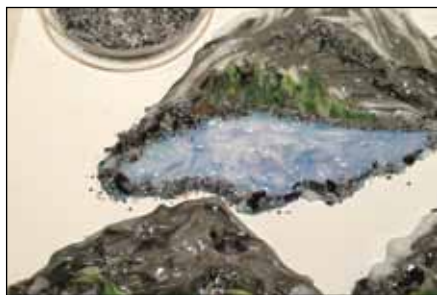
Apply the blues and white for the lake.



Using the same principle as for the previous colors, add lots of Goo, mix the colors thoroughly, and overlap them onto the bottom of the mountain. Make the lake as large as you want. You can add more or break pieces off once the piece is fired. Remember, you are just making glass pieces so you can play with them to create the finished scene. You will change your mind several times before it is complete, and that's okay. Now we're almost ready to fire.

7

Add details to the design by sprinkling various sizes and colors of frit onto the Goo.



This is where you will add the sprinkles to your icing. Again, nothing is right or wrong, only different. Don't be afraid to do it your way. I used the two greens to create the illusion of trees and plants.

The first order of business is to make sure you **always wear a respirator mask when you are working with frit to avoid inhaling the glass particles**. Going from top to bottom, squeeze out overlapping lines of the frit, then using the modeling tool, push and pull the greens into each other. Create some depth by using tweezers to add some coarse black and white frit to the rocks. Using your fingers for the fine and medium black and white frit, create a shoreline around the lake and to add some depth in the mountains. You can add more colored Goo anytime during the process.

Once you are reasonably satisfied with the design, put the piece into the kiln. Again, you can always add more—and will probably need to—when you are creating the finished picture.

8

Using the tree in the pattern, draw as many small and large trees on the kiln shelf fiber paper or primed kiln shelf as desired with the Goo/frit mixture.



Using the two greens, overlap thick lines of the greens with the Aventurine Green on the bottom and the Pea Pod Green on top. Make some of the trees thick and some thin so you can layer them if you choose. It never hurts to have lots of assorted trees.

Arrange all of the rocks, trees, and the mountain piece on a piece of kiln paper or a prepared kiln shelf and fire them all at the same time. Here is the schedule that I used for my Skutt, but remember that each kiln fires differently. You may need to adjust the schedule to suit your own kiln.

Firing Schedule

Segment 1: Ramp 400°F/hr to 1350°F and hold 10 min.

Segment 2: Let the kiln cool on its own.

9

Fill in any holes that occur during the firing process.



10

Use the leftover colored Goo to fill in the voids, add more color, build some more trees, or make the lake larger.



If you have made some larger trees, check the position of the wolf stand and add the tree to the fused glass on either side of the stand. If your trees are too large, break them. If they are too small, add more Goo to them. This is the time you can do whatever you want.

11

Tack-fuse the two remaining rock pieces together.



The two rocks will become one piece after firing and will then be epoxied to the aluminum rock where the wolf is standing. Once again, this is the time to add any details. You will position the smaller rock over the larger one, slightly off center.

Arrange the layered rocks on a prepared kiln shelf, but do not attach them to the fused 8" x 12" streaky/clear. Arrange the fused streaky/clear background piece with the mountains and lakes next to the rocks on the kiln shelf for the final firing.

The following is the schedule I used for my Skutt kiln, but again, remember to make any necessary adjustments for your kiln and for the COE of the glass you are using.

Final Firing Schedule

Segment 1: 250°F/hr to 900°F and hold 45 min.

Segment 2: 500°F/hr to 1400°F and hold 15 min.

Segment 3: 9999 (AFAP*) to 900°F and hold 45 min.

Segment 4: Cool to room temperature.

*as fast as possible

12

Epoxy the rocks to the aluminum wolf stand.





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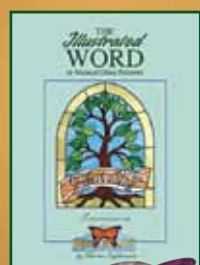
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This wolf stand has been cut from a sheet of aluminum that was burnished and bent to hold a 3 mm to 6 mm fused glass project. The front of the stand has a protruding foot, and the back has a protruding heel, which gives the stand a great deal of stability.

On the back of the stand, there are two vertical fingers that can be adjusted to fit the glass snugly into place. The stands also come with two clear bumpers that can be attached to the fingers to prevent scratching the glass or to help secure it even further. Using your running pliers with the rubber tip, you can also bend these fingers gently to tighten or loosen the stand. If the stand gets scratched, you can use the finest sandpaper to lightly sand and remove any marks. You can also visit www.displayglassart.com and look under "Tutorials" for ways to paint the aluminum if you prefer.

I have to say this project was so much fun! It was fast and easy, yet it could be very intricate if you enjoy that pace. I have made several since this one, and I am in love with them all!

This is my tribute to Loon Lake in honor of the losses, both structural and spiritual. We are all healing . . . but the wolf still cries.

E-mail roz@displayglassart.com to purchase kits that include the wolf stand, six 2-ounce bottles, and three packages of Tattoo Goo.

GPO

Fusing Schedule for the 8" x 12" Streaky/Clear Pieces

Fire with the streaky side down to eliminate bubbles, then with the streaky side up for the final firing.

Segment 1: Ramp 250°F/hr to 900°F and hold 45 min.

Segment 2: Ramp 600°F/hr to 1480°F and hold 15 min.

Segment 3: Ramp 9999 (AFAP*) to 900°F and hold 45 min.

Segment 4: Ramp 250°F/hr to 750°F and no hold.

*as fast as possible

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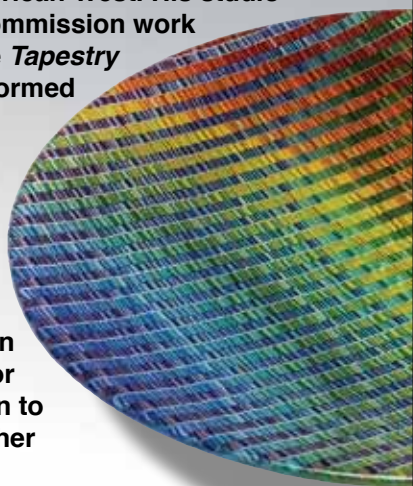
Richard Parrish



The distinctive style of artist and teacher Richard Parrish reflects his early life in the "big sky" country of the American West. His studio time is spent on commission work plus his decorative *Tapestry* and *Mapping* kiln formed wall art series.

Visit the "Talking Out Your Glass" link under "What's New" on the Glass Art website to begin your free Stitcher or iTunes subscription to these and many other great podcasts.

www.glassartmagazine.com



Rosalind Stanton started her career in glass in 2005 after she attended the Glass Craft & Bead Expo in Las Vegas, Nevada, and realized that she was addicted to glass art. She spends hours in her studio experimenting with powdered, fine, and coarse frit combined with scraps of glass. By layering, tacking, stacking, breaking, and re-fusing, she has pushed the limits of glass fusing.

Rosalind's favorite project is making 21-inch platters, but she had to stop when she ran out of room to stack them. That led to her second addiction—cutting metal stands and glass adornments. Together with her husband John, the welder, they have added another element to her ability to produce glass platters. Now they can be displayed, used, washed, and put back on display as functional and saleable glass art. Check out these metal accessories on their website at www.displayglassart.com.





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The Decal Advantage

Design, Fabrication, and Text by Susan McGarry

During busy times it's great to have easy projects for those quick, one-of-a-kind gifts. Decals are a delightful way to embellish a project very quickly. Aurora Water Slide Decals have a unique triangular shape and provide a marvelous way to personalize your projects.

Use two or more triangle decals together for a mirrored kaleidoscope pattern. For this project we'll use four decals and one small square of white glass to create a butterfly-like pendant. The decals are made for use with fused glass, but they can also be used to decorate an ornament or mug by applying them to glazed ceramics using the same process. Very little in supplies or time is required to create something really beautiful.

Glass

White Fusible 90 or 96 COE Glass, 3" x 3"

Artifill.com

Aurora Water Slide Decals

Tools and Materials

Pendant Bail 1/16" Fiber Paper

Kiln Wash or Fire Paper

Permanent Craft Adhesive

Scissors Small Dish of Warm Water

Cotton Swabs Rubbing Alcohol

Paper Towels Aluminum Foil



1

Use scissors to cut out 4 Aurora Water Slide decals.



2

Cut the square of fusible glass diagonally from corner to corner so that you have 2 identical triangles.



The package contains 10 left and 10 right decals. Make sure the 4 decals include 2 left and 2 right. Create a design with the decals similar to the one in the picture.

White glass is best for using with the decals, because it will make the colors in the decal pop.

3

Prepare and place fiber paper between the layers of white glass to hold space for the bail, then fuse the glass pieces together.



Cut 2 pieces of 1/16" fiber paper a smidge wider than the bail you are using and at least twice the length of the glue pad on the bail. The fiber paper will be used to create a gap in the glass when it's fused so that the bail can be hidden and glued inside the glass. It should be placed so that the 2 pieces of 1/16" fiber paper create a gap in the glass no deeper than the length of the bail glue pad.

Prepare the kiln shelf with kiln wash or fire paper. Stack the 2 white glass triangles in the kiln with the 2 pieces of fiber paper in between the glass where you will be placing the bail later. ****NOTE: Do not fuse with the bail in place!** The rest of the fiber paper will extend out onto the kiln shelf.

I used the following firing schedule, but remember that all kilns fire differently. You may need to adjust the schedule to fit your own particular kiln. **After fusing the glass triangles, do not remove the fiber paper.** We will need it to keep the hole open when fusing the decals in the next step.

Firing Schedule

Segment 1: Ramp 500°F/hr to 1450°F and hold 15 minutes.

Segment 2: Turn kiln off and cool to room temperature naturally before opening.

4

Soak the decals in water to remove them from the backing, apply them to the glass, and fuse.



Place the decals in warm water in a small bowl for about 30 seconds to 1 minute. Use your finger to put a couple of drops of water on the glass to help the decals slide into place.

Take one decal at a time out of the water with the backing paper still attached. Place the decal where you want it and slowly remove the backing paper. Placing the decal this way will protect it from folding or tearing.

The decal should easily slide off of the backing paper. If it doesn't, place it back in the water until it does. Once you have all of the decals placed on the glass, move them around until they are right where you want them. Use a paper towel to press the decal in place and remove any excess water and air bubbles. If there is water or there are any air bubbles under the decal during fusing, the color will not transfer to the glass.

Now it's time to fuse the decals. **It's very important to follow these directions!** Place the pendant back in the kiln with the decals in place and the fiber paper still in the space between the glass.

Use the following schedule **making sure to gap the lid of the kiln to at least 1000°F** to allow the binders to burn off. If the kiln is closed during this time you will end up with cloudy decals, and we don't want that! Only a small gap is necessary. It is possible to leave the kiln gapped open the entire time, but it will use a bit more energy. As before, make any adjustments as necessary to this firing schedule to fit your own kiln.

Firing Schedule

Segment 1: Ramp 500°F/hr to 1350°F and hold 15 min.

Segment 2: Turn kiln off and cool to room temperature.

5

Add the bail.



Remove the fiber paper that was inserted to create the space for the bail and use a cotton swab and rubbing alcohol or water to clean out the hole. Before gluing the bail, be sure to dry the hole thoroughly.

Fill the hole with permanent craft adhesive. Insert the glue pad of the bail and move it around just a bit to get the glue to surround the bail. Remove any excess glue and allow it to dry for at least 24 hours.

Once the glue is fully dry, place the pendant on a piece of foil in a 250°F oven for 20 minutes. Allow the glass to cool a few hours, and it's ready to wear!

GPO

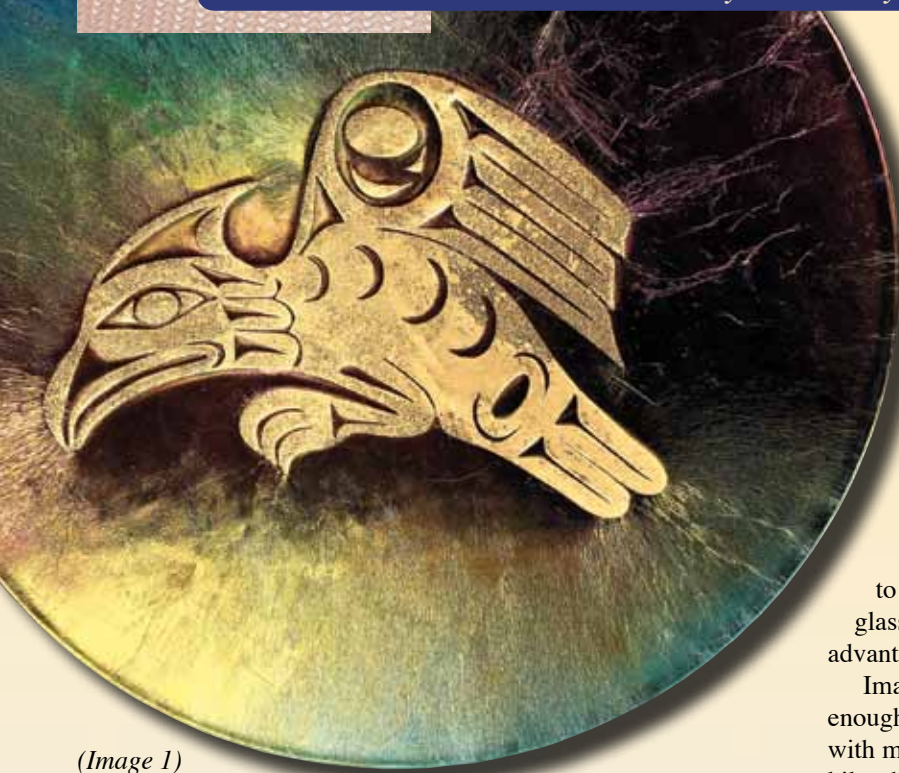


Susan McGarry has been passionate about glass since her first glass class. Since then she has participated in classes and workshops in fusing,ameworking, sculpture, and design. She has exhibited her fused glass jewelry and artwork in shops throughout the United States and Ireland. In 2012 she started her business ARTiFILL manufacturing molds and jewelry findings for artists and crafters.

Susan was born and raised in Southern California. Her home and glass studio are now in the San Francisco Bay area. She devotes all of her time to glass and shares her love of fused glass fractals in her classes. Her book, Fused Glass Jewelry, can be found on Amazon, and her molds and jewelry findings can be found at www.artifill.com or at local retailers.

Mica Magic

by Dennis Brady



(Image 1)
Gold mica raven
on black iridescent glass.

Mica is so versatile and can be used in so many different ways that it is almost like a magical material. It will fuse onto any glass regardless of COE at temperatures ranging from slump to full melt. You can fire it on the surface of the glass, or it can be included between layers in a project. No matter how it's used, mica will always leave a gorgeous metallic sparkle, which makes it a perfect material to add pizzazz to your holiday gift giving and decoration.

Safety Issues

Mica is an extremely fine powder. It will attach to anything it touches, can be easily inhaled, and will stick to your skin and clothing if you don't handle it carefully. Small amounts won't do harm, but repeated high exposure to mica can cause fibrosis in the lungs.

You must be sure to take precautions to avoid inhaling mica. It's a good practice to either work very slowly or wear a dust mask while you work. The hazard is greatest when it's used in dry form, but it's eliminated when the mica is mixed into any liquid.

Working with Mica

There are quite a few variables that can affect how mica will react when it is used in glass art projects. Having a good knowledge base of these variables and understanding what to expect can help artists obtain consistently good results in their work. The following aspects should be considered when working with mica.

Color Survival. Not all mica colors survive the temperatures to which glass is fired in kilns. In fact, most *don't* survive. They either fade significantly or lose their color completely. It's a good idea to either buy mica that has been pretested for kiln forming or do some test firings yourself before using the mica on an important project.

Dark Glass. Mica looks best on the darkest glass colors. The lighter the glass, the less dramatic the color contrast.

Color Change. Most mica changes color when fired in a kiln. The color it becomes after firing is often different than it was before. Sometimes a *lot* different.

Mica on Dichroic or Iridescent Glass. Mica will not fuse to a metallic surface, the metallic side of dichroic, iridescent glass, or the tinned side of float glass. You can use that to your advantage.

Image 1 shows a project where a design was sandblasted just enough to remove the iridescent surface and expose uncoated glass with mica, then applied onto the exposed areas. When fired in the kiln, the mica fused only to the sandblasted areas and not the iridescent coated parts.



(Image 2) Dragonfly design sandblasted
onto clear float glass with russet colored
mica applied to the sandblasted areas.

Temperature. Although mica can be fired through a wide range of temperatures, color retention is directly related to temperature. The higher the temperature, the higher the degree of color loss. Colors that stay true at lower temperatures might fade slightly, or even a lot, at higher temperatures.

Mica fuses only to glass. Mica will fuse to any glass, but it will not fuse to other mica. If you apply it in a thick pile, the mica on top of other mica will not fuse and will brush off after. No problem. Just brush it off onto a piece of paper and return it to the container it came from.

Mica applied dry is likely to have less material fused on, because some of the mica particles have failed to fully drop down between other particles. When mixed into a liquid then applied, the particles are more likely to spread evenly and will thus produce a more uniform covering.

Bubble Risk. There is no risk of creating bubbles if mica is fired on the upper surface of the glass, but mica sandwiched between layers of glass will create bubbles unless it's applied very thinly. Any air trapped between the mica particles will expand and create air bubbles.

Not all mica is the same grit texture. Some colors are extremely fine and other colors less fine. The coarser the grit, the greater the likelihood of trapping air bubbles. If you want to do a project with mica that will be capped with clear glass, it might be best to first fuse the mica to the surface of a piece of glass then cap it in a separate firing.

Application

There are a lot of application choices available when working with mica. It can be applied dry, stamped on, or mixed into a liquid to apply like paint.

Sifting on Mica. First be sure the glass is clean. Any contaminants on the glass will prevent the mica from sticking to the glass. You can use any kind of craft sifter to apply the mica or just pour it on and brush off any excess. It all works. Image 9 shows a project made by tack-fusing clear pebbles onto a clear base, then sprinkling on copper mica.

Stamping Mica. Mica can be fused onto glass by applying glue and pouring or sprinkling mica on it. Create a family keepsake, for example, by pressing a child's hand on a glue pad then pressing the handprint onto the glass and applying mica to the glue. Any lettering can be done with a pen that applies glue.

The project in Image 4 features designs applied with the kind of rubber stamps used for stamping with ink. Instead of using ink, the stamp is pressed into a glue pad, then pressed onto the glass to apply the pattern in glue on the glass. Mica is then applied to the glue. This project started with some of the design on black glass, then more on a layer of clear glass, then still more on two more layers of glass. The four-layer stack was then fired to a tack fuse. You can also stamp with more than one color of mica. This project includes blue, bronze, copper, gold, green, pink, purple, and russet mica.



(Image 3) Mica in a combed project fired to 1700°F.



(Image 4) A four-layer project with mica designs applied using rubber stamps.

Painting with Mica. You can mix mica powder into a liquid and apply it like paint. Applying it this way produces a more uniform coating of mica. Almost any liquid will work. I've had reliable results with CMC gel, aloe vera, Glastac, lavender oil, honey, and flat 7UP. Even water or isopropyl alcohol works. However, the mica particles separate quickly from water or alcohol, so you have to keep stirring the mix.

Mica on Sandblasted Surfaces. The rough tooth left from sandblasting provides an excellent surface for applying mica, as shown in Image 2. It allows the mica to spread a little thicker than is possible on a perfectly smooth surface. If you slop a little outside of the pattern area, it's easy to wipe it off with a cloth or cotton swab. You can also wait until the mica dries and scrape it off with a razor blade.

In Image 5, I'm using an eye-dropper to apply gold mica to a sandblasted design. The finished project after sandblasting is shown in Image 6.

Mica on Textured Glass. There is a huge variety of textured clear glass that will look gorgeous with mica applied. The variance in texture creates a color variance with mica fused on. A glass tray, for example, made from a pebble-textured glass with copper mica fused on can be a very distinctive piece.

Mica on Tempered Glass. Fusing chips from a broken sheet of tempered glass can make some interesting projects. Image 7 features a glass tray with gold mica sprinkled on.

Mica in Castings. Here's a starfish cast in a ceramic mold with chips of gold mica mixed in.

I hope that the holidays are magical for you and your family. If you need to add even more enchantment to your experience, add mica in your next project for this season and beyond.

GPQ



(Image 5) Applying mica with an eyedropper.



(Image 6) Gold mica on deeply carved glass.



(Image 7) Tempered glass tray with gold mica.



(Image 8) Cast glass starfish with chips of gold mica.



(Image 9) Clear pebbles tack fused onto a clear base and sprinkled with copper mica.

Dennis Brady has been a full-time professional glass artisan since 1980 and currently works with stained glass, fusing, casting, glassblowing, and sandblasting. He has authored and published six books of stained glass patterns plus *A Lazy Man's Guide to Stained Glass*. Along with his sons, Dane and Jason Brady, he operates several companies. DeBrady Glassworks produces glass art; Victorian Art Glass sells tools, equipment, and supplies; and Master Artisan Products manufactures molds and tools for glass artisans. He has also created the website Glass Campus, which offers over 100 tutorials and videos teaching numerous glass art techniques as well as tips on how to make a living as a glass artisan.

Dennis teaches extensively in his home studio in Victoria, British Columbia, Canada, and as a guest instructor in several other countries. He is also a contributing artist to GPQ's live and recorded Glass Expert Webinars™ and Master Glass Artisan Lecture Series™. His "push the boundaries" approach to experimentation and innovation is always, "How fast can I go until I skid into the ditch?" Visit www.debrady.com to learn more about Dennis and his art.





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by Mary Harris

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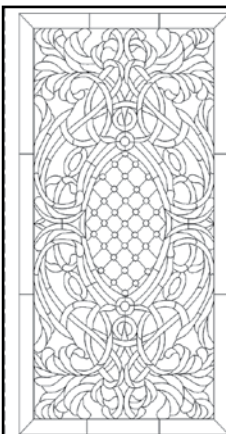
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Kiln Corner

The Relays of a Glass Kiln

by Arnold Howard

Photography Courtesy
of Paragon Industries, L.P.

Though Arnold Howard works for Paragon Industries, L.P., the information here applies to all brands of glass kilns. Feel free to send questions for this column no matter what brand of kiln you own.

What is the relay that is used in kilns and how does it work?

Relays turn on the heating elements of digital kilns. When the controller sends a signal to a relay, an electromagnet in the relay closes electric contacts. The elements are wired to the relay so that when the relay contacts close, electricity flows to the elements.

Why do half of the elements in my digital kiln remain on even when I press the stop button?

This happens when a relay has burned out. Disconnect the power to shut off the elements and replace the relay before firing the kiln again.

When replacing relays, how do you know you are installing the correct ones?

Read the label printed on the side of the new relay to be sure you are installing the correct one. The label is confusing until you spend a little time studying it.

On the label, find the voltage of the relay coil, which is the electromagnet inside the relay. When the electromagnet receives a signal from the controller, terminals inside the relay come together and make a clicking noise.

The voltage of the coil is printed on the relay near a symbol of the coil. In the sample relays shown, the coil is symbolized by a rectangle with a diagonal line. The coil in the top left relay is 12 volts DC, which is the most commonly used kiln relay. The coil in the bottom left relay is 240 volts AC. The coil in the relay on the right is 200 to 240 volts AC (for 208 volt kilns).

The 12 volt DC coil is used in relays that are turned on by a digital controller. The 240 volt AC coil is used for relays that are activated by an infinite control switch instead of a digital controller. The earlier Paragon GL-24ADTSD, which is a digital kiln with switches that adjust the top and side elements, uses both types of relays.

DC means direct current, which comes from the controller to the relays. The symbol for DC is a horizontal solid line over a broken line. AC is the current from the wall outlet and is symbolized by a wavy line.

What is the maximum number of times per minute that the Sentry Xpress controller can turn on the relay during a hold?

The maximum number of relay cycles is 6 times a minute.

Why do the relays on my kiln seem to wear out too often? The last relay I replaced has a melted spot.

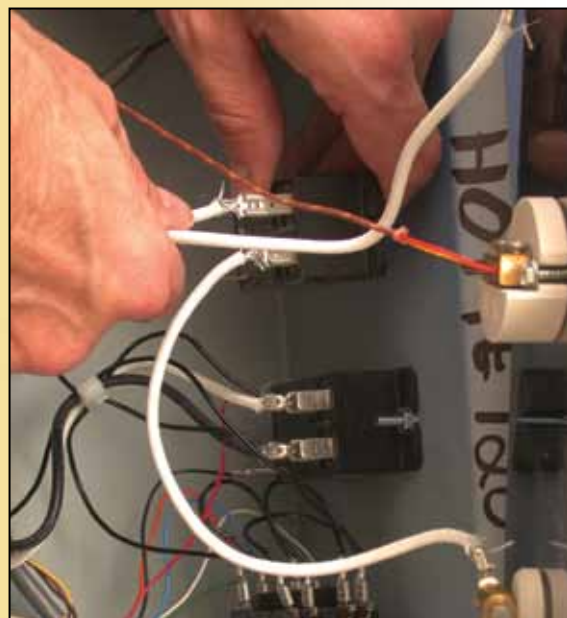
Examine the relays that you previously replaced. Is the heat damage on those relays in the same location as the heat damage on the relay you are now replacing? If so, you have found the problem—a loose push-on connector.

The push-on connectors must be tight. Loose connectors burn up new relays, leaving heat damage near the terminal. Push-on connectors should be difficult to slide off the relays.

GPQ



Read the label printed on the side of the relay and compare it to the label on the relay you are replacing.



The push-on connectors must be tight. Loose connections can destroy even a new relay.

Arnold Howard writes instruction manuals and advertisements for Paragon Industries, L.P. His hobbies are glass fusing and karate. He also enjoys studying history and watching classic movies. You can reach Arnold at ahoward@paragonweb.com with questions for future columns. Sign up for his kiln newsletter at www.paragonweb.com.

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