

# GLASS PATTERNS

— Q U A R T E R L Y —

Winter 2015

Volume 31 • No. 4

## Wildlife Issue

Stained Glass

Snowflake Magic  
Abstract Peacock  
Birdhouse  
Spirit of the Fox

Fused Glass

Desert Fritscape  
Tortoise Shell Tray  
Glass Gecko  
Fused Feathers  
Appaloosa Horse  
Valentine Hearts

Screen Printing

Kokopelli Pendant



Volume 31 No. 4

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*Lisa Vogt holds one of her kiln formed vessel sinks.*



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## From the Editor

### Everything's Relative

According to the Urban Dictionary, the phrase *everything's relative* means that the world is in the eye of the beholder. All of us look at things from our own personal perspectives, which leads us to differing opinions and views about the things we encounter on a daily basis. The word *patterns* is a relative term as well. What it means to you depends on how you look at it.

Are you a stained glass artist who wants to translate carefully selected designs in stained glass and solder? Maybe you're a fusing artist who wants to know more about how to determine the right kiln temperatures and COEs for your projects or a student of glass art in general who wants to know more about stained and warm glass mediums. That's where *Glass Patterns Quarterly* comes in. No matter what definition comes to mind as you think about the word *patterns*, you'll find what you're looking for in *GPQ*.

Each quarter we have patterns for screen printing, fusing, stained glass, painting, and beyond available in print, CD, and digital formats. We even offer some free patterns on our website. Unlike some of the blogs, websites, and Facebook forums that also tout free patterns and projects, we feel that our hands-on approach has great value with a lasting appeal that will be here for you long after the digital "post of the day" has vanished into cyberspace.

We hear from some stained glass folks that they want to see only stained glass work and vice versa from the fused glass enthusiasts. There is enough crossover within the various glass genres, however, that we find it wise to offer a mixture of mediums. The glass world has changed over the past three decades since *GPQ* began, with new techniques being discovered every day. For only \$6 an issue, the same price as the Sunday *New York Times*, you'll find editorial within our pages that provides turnkey projects and stand-alone patterns from around the globe packed into each issue. None of this would have been possible over the past thirty years without the support of our loyal subscribers, dealers, and advertisers, to whom we offer a very sincere thank-you. And when we spot our projects shared and featured on various social media forums, we're delighted. Everything is quantifiable in terms of individual perception, and we're happy to see that so many others perceive that *GPQ* is still the exceptional value it has always been and will continue to be.

Thanking you for your continued support,

*Delynn Ellis*

Delynn Ellis  
Managing Editor



Kokopelli Pendant  
by Barry Kaiser

#### Upcoming Submission Deadlines

<b>Spring 2016</b>	<b><i>Glass in the Garden - Glass Flowers, Planters, Birdbaths, and Garden Art</i></b>
Editorial	December 20, 2015
Ad Closing	January 20, 2016
Ad Materials	January 30, 2016
<b>Summer 2016</b>	<b><i>Slice of Summer - Refreshing Sights of Summer Pastimes</i></b>
Editorial	March 20, 2016
Ad Closing	April 20, 2016
Ad Materials	April 30, 2016

# Glass Patterns Quarterly

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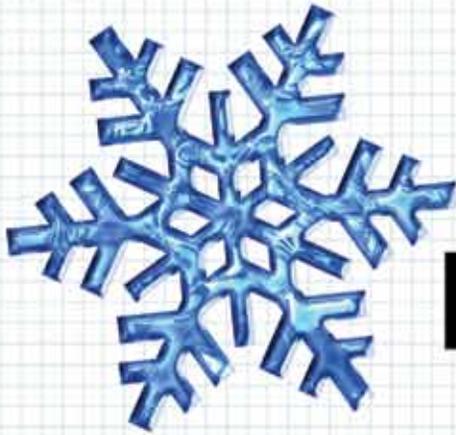
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# Snowflake Magic

## An Introduction to Stained Glass

*Design, Fabrication, and Text by Deverie Wood*



There is nothing as hard for me to resist as playing with a table full of textured glass bevels and rectangles. They are like puzzles that remind me of snowflake shapes.

I was born in December, so I guess it was inevitable that I would want to discover the perfect snowflake pattern. I have never quite found one yet, so I decided to make the snowflake that I had always been looking for. They are quick and rewarding to make and are not complicated. These snowflakes are so beautiful to hang up in the sunlight and make amazing rainbows everywhere.

There are an infinite number of ideas for choosing the glass for these snowflakes. As you are planning your own project, choose whatever you wish for creating the snowflakes in any combination of glass, bevel diamonds, clear texture, or color. The nuggets can even be different sizes if you want. I first chose the bevels for this project, then a complementary iridescent glass with clear textures.

### **Spectrum Glass Company**

I/100W Iridized Clear Waterglass®, 1/2 Sq. Ft.

#### **Additional Glass**

Iridized Glue Chip Glass, 1/2 Sq. Ft.

6 Purchased Bevel Diamonds, 2" x 4"

6 Purchased Star Bevels, 2" tip to tip

12 Rectangle Bevels, 1" x 2"

25 mm Jewel or Nugget

30 Assorted Smaller Nuggets

#### **Tools and Materials**

Morton Glass Works Cutting System

Black Sharpie® Marker Glass Cleaner

60/40 Solder 7/32" Copper Foil

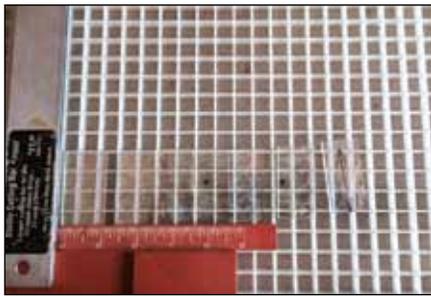
18- or 20-Gauge Pretinned Copper Wire

Flux Cleaner Toothbrush

Black or Copper Patina (optional)

Jim's Wonderful Nugget Foiler (optional)

1 Cut six 2" x 3" concave diamond-shaped pieces for the outer points and the twelve 1" x 2" rectangles that go directly under the concave diamonds from the Iridized Waterglass and/or Iridized Glue Chip.



The Morton System helps to easily make accurate diamonds and rectangles.

2 Mark the center bevels with a Sharpie pen to indicate where the points need to be broken in order to allow the center jewel to fit.



3 Cut the points with the glass cutter on the flat side of the bevel, using the Sharpie mark as a guide, and break off the point.

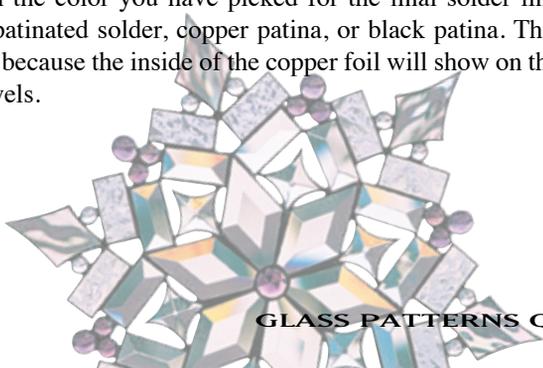


It should break off easily. Grind the breaks so that all of the bevels fit on the pattern properly around the center jewel.

4 Wrap all of the glass pieces and bevels with 7/32" copper foil.



The 7/32" copper foil is the size to use, because it offers better strength for the entire project. Select the inside color of the copper foil to match the color you have picked for the final solder line color—non patinated solder, copper patina, or black patina. This is important, because the inside of the copper foil will show on the clear the bevels.



5

Foil all of the nuggets.



Clean all of the nuggets with glass cleaner first to help the copper foil hold better. The best way to foil a lot of nuggets at one time is with a product called Jim's Wonderful Nugget Foiler. Then place the nuggets, some foiled and some not foiled, into a cough drop or mint tin and shake the tin until the foiled nuggets are nice and smooth.

6 Tack-solder the glass, bevels, and nuggets in place.

6



I recommend that you use 60/40 solder for this project. Start soldering by tacking the center of the snowflake first. For row 2, tack the 6 smaller diamond star bevels into the spaces between the large diamond bevels that circle the center jewel in row 1. Continue to tack the next rows of glass in the same way from the center out. Finally, tack the three clustered nuggets and the single nuggets around the outside border of the snowflake.

7 Solder the front side of the snowflake, flip the project and solder the back, then tip the snowflake up and solder the edges of the bevels.

7



Soldering the edges works better after the back side is soldered. The jewel in the center is usually taller than the bevels, so use a towel or anything with a hole in the center to support the snowflake while you are soldering on the back side to keep it level.

After the back is soldered, turn the snowflake over gently. Tilt up the snowflake and tin the edges of the bevels and nuggets. Smooth out any lumps in the solder after everything is finished.

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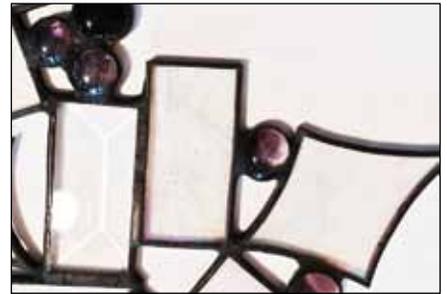
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8

Build a bridge at the bottom of the joints of the nuggets and bevels (the sloped edges at the joints of solder) to add strength to the snowflake.



9

Use 18- or 20-gauge pretinned copper wire to form a loop on the top for hanging the snowflake.



It is better to wrap the copper wire from the solder seam, then around the back side of the foil on the diamond shape to the nugget cluster. This offers needed strength for safe hanging.

After soldering, clean everything thoroughly with flux cleaner and a toothbrush. Apply polish or patina and buff with a soft cloth. Enjoy your beautiful snowflake!

**GPO**



*In 1979, Deverie Wood took a beginner class in stained glass and has loved working in this medium ever since. Within a year she had begun to design pieces and accept commissions for custom creations. After being the proprietor of her own retail store and teacher of art glass techniques, she took her desire to inspire others even further by establishing Light in Glass Publishing.*

*Designing and selling her patterns has helped Deverie to organize them into five pattern books that are still selling today. With ever-changing times and styles, there is always the desire to bring new inspiration to new generations of artists. Visit [www.deveriewood.com](http://www.deveriewood.com) for more information on her pattern collections.*

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# Stained Glass Birdhouse

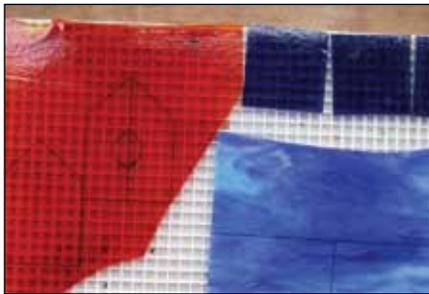
*Design, Fabrication, and Text by Jody Pedevilla*



A shimmering, shiny birdhouse hanging from a tree is a great way to showcase glass outdoors, not to mention a great way to provide an attractive shelter for our feathered friends. This simple 3-D project will help you create a colorful bird sanctuary in no time.

1

*Trace the birdhouse pattern sections onto the glass.*



Mark out three 4" x 4" squares of the dark blue glass for the bottom and 2 sides of the birdhouse. Next mark out two 4" x 6" rectangles out of the medium blue glass for the roof. This size will allow for the overhang.

Mark two more pieces for the front and back of the birdhouse. The outline of these pieces will incorporate a rectangular shape topped by a triangular shape. The roof pieces will rest against the triangle, forming an angle at the top of the birdhouse. The pieces should be 4-3/16" wide from the bottom of the piece up to about 4" from the bottom, where the triangle shape will start.

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## **Tools and Materials**

7/32" Copper Foil Flux Lead Free Solder

1/8" Grinder Bit Grid System (optional)

14-Gauge Copper Wire

Dulled 12-Gauge Copper Wire

Determine where the center of what will be the front end piece lies and draw a line perpendicular to the bottom of the glass piece up through the center to the point where the roof will be. Draw a circle at the desired position along the center line for the opening of the birdhouse. Using a grid system will make measuring and cutting straight lines easier as you trace and cut the glass pieces for the birdhouse.

2

*Cut out all of the pieces, then cut the front end piece in half down the center and cut out the entrance hole.*



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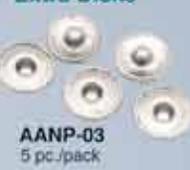
## Pendant (without chain)



## Earrings



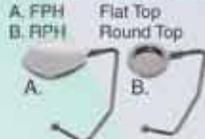
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Photo: Iwan Baan

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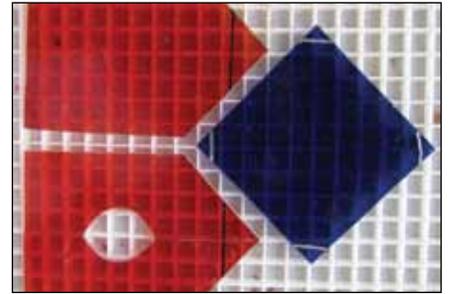
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3  
Cut the corners off of the dark blue floor square and about 1" off the tops of the front and back pieces to allow for ventilation and drainage.



4  
Mark the roof pieces where the wires will come through.



Since the sides are 4" tall, the holes will be 4" apart. I use a 1/8" grinder bit to make half-moons at the marks so that when they are put beside each other, the holes will be big enough for two 14-gauge copper wires to go through. The same goes for the perch hole below the opening, which is a 2" length of dulled 12-gauge wire.

5  
Lightly grind all of the edges, then foil and tin.



I use lead free solder on the front piece, since birds will come in contact with it. The wires that will hold the roof onto the birdhouse are attached to the front and back of the birdhouse in the outside seams that are formed where the front and side pieces meet.

Wash everything and install the roof by running the wires that are attached to the seams of the birdhouse up through the holes that were created earlier where the roof pieces come together at the top. Finally, add any desired decorations.

Bend the wires straight up the cut corners until they cross, then straight up from there. Insert the 2" length of 12-gauge wire in the perch hole and solder it in place. If you need to remove the roof later for cleaning the piece once it has been in use, just straighten the hooks and lift the roof off. I hang mine from a shady tree out of direct sun. Easier done than said!

GPO

*Jody Pedevilla lives in Hayfork, California, in the beautiful mountains of Trinity County. She taught herself how to create in stained glass about thirty years ago. Now that she retired two years ago, she has lots of time to revisit glass art.*



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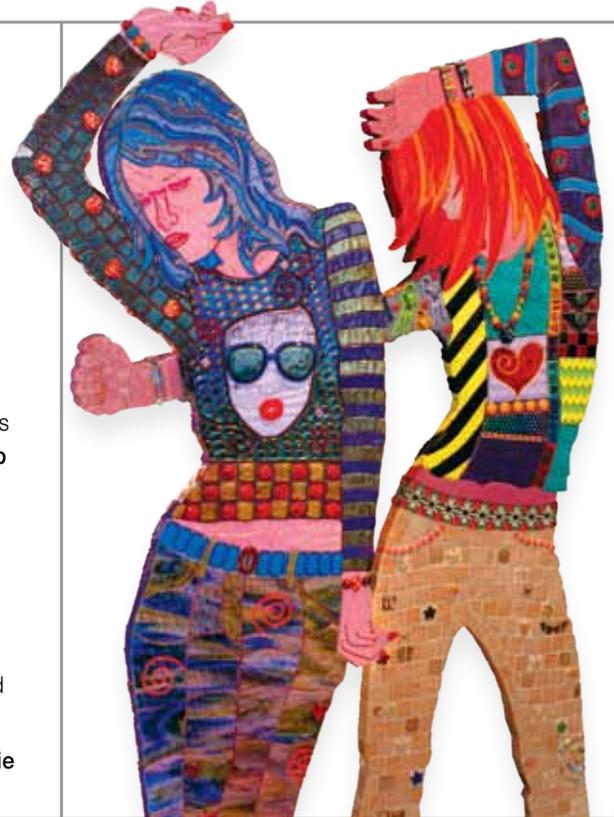
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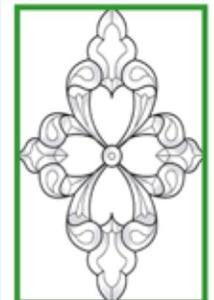
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# Abstract Peacock

Design, Fabrication, and Text by Chantal Paré

*“Beauty of whatever kind, in its supreme development, invariably excites the sensitive soul to tears.”*  
Edgar Allan Poe



Peacocks may be the most extravagantly decorated birds of all. Swathed in rich iridescence and crowned with a flamboyant bouquet of sapphire-like feathers, the peacock quivers gently to impress the peahens. The towering fan of geometrically arranged and alluring eyespots is sure to draw attention as the bird pivots to make sure no creature around misses the display.

A native of the Indian subcontinent and Southeast Asia, the peacock has captured the imagination of decorative artists for centuries and has become a staple wherever exotic and ornate embellishments are desired. Here we turn this tradition upside down with a stylized, streamlined, modern 12" x 21" peacock design that is the perfect place for Spectrum's Waterglass. This product line is available in a rainbow of deeply saturated and vivid colors, and its soft, flowing texture is understated while providing ample distortion power for privacy—just the ticket for a project that calls for shades of brilliant blue, green, and purple.

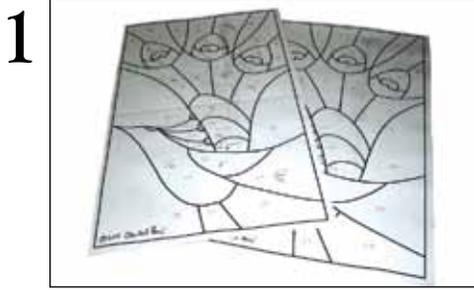
## Spectrum Glass Co.

BR/Teal Teal Green on Clear Baroque™ for Background, 2 Sq. Ft.  
134W Medium Blue Waterglass® for Body and Tail Tips, 1-1/2 Sq. Ft.  
543-2W Grape Waterglass® for Eye, Wing, Head Crest, Tail, and Eyespots, 1 Sq. Ft.  
526-2W Moss Green Waterglass® for Tail and Eye Spots, 1 Sq. Ft.  
533-1W Sky Blue Waterglass® for Tail, 1 Sq. Ft.  
I/1009W Black Waterglass Iridescent for Eye, Eyespots, and Crown Feathers, 1/2 Sq. Ft.

## Tools and Materials

14-Gauge Pre-tinned Copper Wire  
7/32" Black-Backed Copper Foil  
1/4" Grinding Bit    Metallic Silver Marker  
60/40 Solder    Black Patina for Lead  
Flux/Patina Remover    Soldering Flux  
1/2" Brass U-Came

Have two copies of the pattern ready with the pieces numbered.



Because the waves in Waterglass are directional, draw a line with a marker on each piece to represent the orientation that best suits your artistic vision. In this project, I have chosen for all the waves to be horizontal.

Take one of the patterns and cut out all of the pieces, removing the black lines either with normal scissors or pattern shears.



Waterglass has a flat underside and a more wavy top. Trace the pattern pieces, top side down, on the flat underside of the glass. Use a silver metallic marker to trace on the black iridescent glass.

Score and break the glass.



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

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

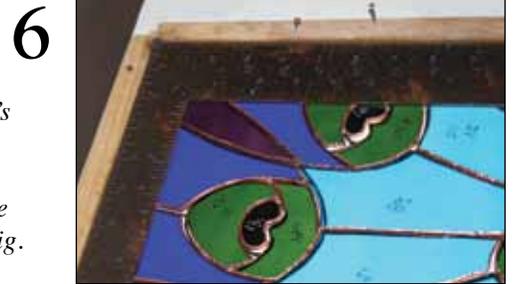


For some tight, deep undercuts, switch your regular grinding bit for a 1/4" bit.

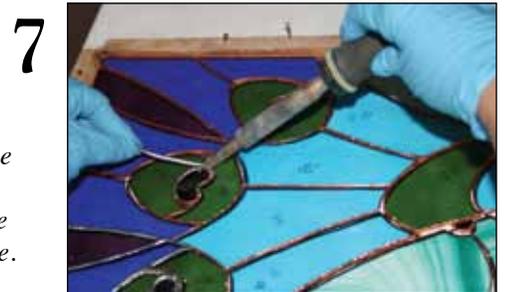
Wrap all of the edges with 7/32" black-backed copper foil, carefully crimping the edges over with the sides of small craft scissors.



Make a jig using a carpenter's square for right angles, then place the pattern and the pieces inside the jig.



Brush the copper foil lines with flux on one small area at a time and solder, taking care to make a nice bead over each line.



Leave some space around the edges of the project free of solder to be able to slip the zinc frame later. Flip the project and solder the reverse.

Cut the brass came to use for forming a frame around the project.



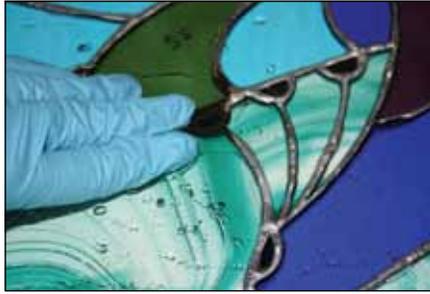
Apply flux generously and tin all of the exposed surfaces. Insert the project into the frame and tack-solder all of the lead lines that join the frame.

Fold over two 1-1/2" lengths of pre-tinned copper wire to form hooks and solder into the grooves of the uppermost joints in the frame.



10

Clean with soap and apply patina on dry lead lines and the tinned brass frame.



Pour a bit of the solution and spread it around while wearing a rubber glove. Clean with neutralizer, and it's ready to hang and play with the light. **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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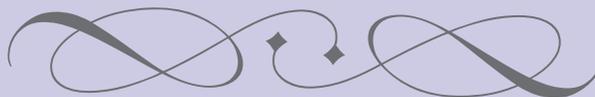
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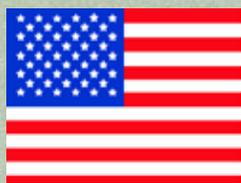
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# Dolphin Sunrise

*Design and Text by Leslie Gibbs*



Take a moment to visualize yourself taking a walk on a tranquil beach. The only sound you hear is the gentle roar of the waves as they roll onto the shore, and the morning sun is beginning its journey on the horizon, painting the clouds in a profusion of radiant color. As you watch the waves you notice the dolphins, wild and free in their natural ocean habitat, playfully greeting the day by breaching and splashing.

This 28" x 15-1/2" design seeks to capture that mood of harmony and peace so you can carry it with you. No matter how stressed and busy your day may be, step into a world of quiet and calm and bring that serenity into your life. **GPO**

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## **Spectrum Glass Co.**

- 315-02S White/Pale Amber for Sun, 1/2 Sq. Ft.
- 319-02 Pale Amber/White Wispy for Reflection, 1 Sq. Ft.
- 375-1S White/Orange for Sky, 2 Sq. Ft.
- 365-1S White/Yellow for Sky, 2 Sq. Ft.
- 675-White/Orange-Red for Sky, 1 Sq. Ft.
- 367-1S Yellow/White for Sky, 3 Sq. Ft.
- 834-92S Violet for First Cloud Line, 3 Sq. Ft.
- 843-92S Grape for Second Cloud Line, 3 Sq. Ft.
- 349-1S Pale Purple for Third Cloud Line, 2 Sq. Ft.
- 339-6S Cobalt Blue for Horizon Waterline, 2 Sq. Ft.
- 833-93S Deep Aqua for Wave Rows 2, 3, and 4, 3 Sq. Ft.
- 833-91S Sky Blue for Bottom Waves, 3 Sq. Ft.
- 389-1S Pale Gray for Wave Foam, 1 Sq. Ft.
- 838-94S Steel Blue for Wave Foam, 1 Sq. Ft.
- 329-2S Light Green for Top Palm Leaves, 1 Sq. Ft.
- 826-92S Moss Green for Bottom Palm Leaves, 1 Sq. Ft.
- 1808-SF Charcoal Opal for Dolphin Backs, 1 Sq. Ft.
- 385-2S White/Light Gray for Dolphin Bellies, 1/2 Sq. Ft.

## **Tools and Materials**

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

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# Spirit of the Fox

*Design, Fabrication, and Text by Michelle Carlson*

This 16" x 19-3/4" design is a depiction of the red fox, the most common variety of fox in the entire Northern Hemisphere. Although it is shy and often goes unseen, it is adaptable to changing environments and human encroachment.

Foxes are known for their cunning natures. Their playfulness and intelligence have long captivated many cultures of human society, which explains their presence in so many oral stories as well as fables and fairy tales. I focused on getting the eyes of this design just right in an attempt to capture some of these qualities that we find so endearing.



## **Bullseye Glass Co.**

000336-0030F Deep Gray Opalescent for Nose and Eyes, 1/2 Sq. Ft.

003203-0021 Woodland Brown Opal/Ivory/Black for Body and Face, 3 Sq. Ft.

## **Wissmach Glass Co.**

I503-D Opal/Dark Gray/Brown for Ears and Toes, 3/4 Sq. Ft.

## **Youghioghny Glass**

4050HS Emerald Green Opal/Yellow High Strike for Border, 2 Sq. Ft.

1302SP Ice White, Amber, Brown Stipple for Legs and Eyes, 3/4 Sq. Ft.

5002SP Beige Stipple for Border, 2 Sq. Ft.

## **Spectrum Glass Company**

1009AVSF Black Aventurine for Pupils, Scrap

6011-85CC Hawkings for Chest and Face, 1 Sq. Ft.

100SF Clear Nuggets for Pupils

## **Uroboros**

UR65542 Blues/Violets/Clear Granite for Background, 2-1/2 Sq. Ft.

151SF Cherry Red Nuggets

## **Tools and Materials**

Flux Solder Copper Foil (varying widths)  
Copper Foil Pattern Shears  
Black Patina Transparent Tape  
Plastic Overhead Transparencies Black Sharpie®  
White Correction Pen 1/4" Zinc Light Table  
Grinder Small Kiln Soldering Iron

Print two copies of the pattern, one for your worktable and one for the light table to assist with glass selection.

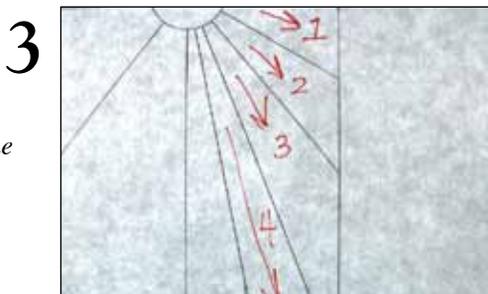


Select the background and border colors.



I chose the beige stipple against the dark purple/blue background in order to achieve a full moon effect in an abstract way. The bright yellow/green was chosen for the rays to hint at pine branches, while the red nuggets look like berries. The brightness of the green provides enough contrast to stand out against the dark background. Contrast really is the key to a dynamic piece.

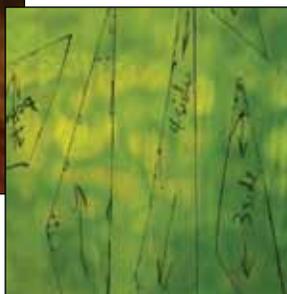
Number the rays of the border pieces on half of one side and half of the bottom, then mark the direction of the rays.



Trace the numbered rays onto overhead transparency with the directional arrows. Paying attention to the direction or grain of the glass really pays off in the appearance of the overall piece. Cut out the outer edges of the transparency with regular scissors, then cut the inner lines with copper foil pattern shears.



Using the directional arrows as a guide, place the pattern pieces on the glass and trace around them with the black Sharpie marker.



For the rays, trace 2 of each piece, then flip the transparency pattern over and trace 2 more in reverse. This will give you more uniform rays on each side and from top to bottom.

Cut, foil, and assemble the border and ray glass pieces, using a jig to fit them to help keep them in proper alignment as you build the panel.



When cutting the strips of the background glass to the correct width for the outer border, pay attention to the direction of the streaking. Use a strip cutter such as the Morton System or Beetle Bits to cut strips of the beige stipple for the inner border. The top and bottom strips will need to streak across the entire length.

Foil the pieces for the rays and fit them inside the jig on the top, bottom, and sides of the panel.

Now is the time to fit the borders against the rays, then fit the nuggets into the rays. Working in this way helps to keep all of the vertical and diagonal lines straight and even. I foil as I go along to avoid a shifting of the angles later on.

Cut, foil, and assemble the dark background pieces, then the pieces for the diamond.



Using a marker, number the pattern pieces of the fox and mark the direction for the streaking and shading.



Referring to a photo of a real fox helps with the selection of glass colors and placement. I used this one taken by Richard Hahn of Alpenglow Images.

Trace the pattern onto the transparency with the directional arrows. It may be helpful to make notes to yourself on the pattern pieces to mark areas of light and dark for contrast. When you are finished, cut out the pattern pieces with copper foil pattern shears.

Trace the pattern pieces onto the glass, paying careful attention to the directional arrows and contrast notes.

8



When dealing with individual pattern pieces, it is easy to lose your directional perspective. Keep the pattern pieces lying on the paper pattern to assist in maintaining your focus on which part of the fox a particular piece represents.

9

Cut and fit the glass to the pattern and foil the entire animal now.



10

Place the eyes in the panel.



Saving the placement of the eyes for last helps to keep them exactly where you want them. You can find tips at the end of the tutorial for creating eyes that have a natural, wet look, which brings more realism to the fox.

Once you have the eyes in place, tape the pieces of the fox together and place them on the light table to check for proper color and contrast. I find that it is easier to judge the quality of the contrast by taking a photo straight on. You can pick up flaws in the piece selection more easily in the photo. Also check the placement of the eyes. Make adjustments and cut any additional pieces as necessary at this time. It is much better to fix something now than after it has been soldered.

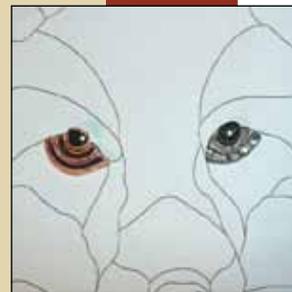
When you're happy with the project, solder the glass in place and frame the panel with 1/4" zinc. Patina black to finish.

**GPO**

## Making the Eyes Come Alive

The eyes were created by fusing the pupils using black aventurine with a clear top. The aventurine gives the pupils a natural sparkle, and the clear gives it the nice shine of a wet eye. I cut 1/4" pieces of aventurine and topped them with clear caps of the same size. I then full-fused them and ground them to size. This effort is worthwhile, because it makes pupils that will shine and have a roundness to their surface.

Cut the amber glass for the iris of the eye and the dark glass for the bottom eyelid. This is delicate and painstaking work, but it really adds to the quality of your piece. Now foil the eyes with the most narrow foil as you can. This prevents large globs of solder from obscuring your tiny pieces.



*Michelle Carlson began working with glass in 2006 after taking a stained glass class from Rebecca Hite at Stained Glass Station in Lee's Summit, Missouri. It was true love from the beginning. She works in stained glass, fused glass, and mosaics.*

*Michelle's artwork is inspired by the landscapes and animals found in nature, particularly her childhood home close to Rocky Mountain National Park in Colorado. She and her husband relocated to the Denver area from Missouri in 2014. Her work can be found at Alpenglow Images and Accents and at Glassworks of Estes Park in Estes Park, Colorado. You can also view more of her work at [rockledgeglassdesign.com](http://rockledgeglassdesign.com) or on Facebook at Rockledge Glass Design.*

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# Screen Printed Glass Pendants

*Design, Fabrication, and Text by Barry Kaiser*



## Glass

3 mm Clear Glass, Scrap

Wasser Glass, Scrap

**Kaiser Glass Designs**

ProScreen™ Material

Orange Kaiser Glass Enamel Paint

**Tools and Materials**

Paint Brush

Overhead Transparency

One of the most functional and flexible techniques you can add to your glass fusing toolbox is screen printing. I have been teaching screen printing on small glass for over 10 years. During that time, the evolution of screen printing for smaller pieces has continued at a frenetic pace. Even today we are consistently developing new screening techniques and applications.

My focus as an artist is in smaller pieces. In the last 10 years, I have not fused any pieces larger than 4" x 4" and even very few larger than 2" x 2". The basic techniques presented here, however, are not limited to small sized pieces. You can create larger screens, or you can use smaller screens to print in any areas on larger glass.

## Why Screen Small?

There is a huge benefit to screening small. We use our ProScreen™, a material that is pre-coated with emulsion that is formulated specifically for use with smaller pieces. It doesn't require a frame and can be used on anything up to 8" x 8". The entire process using ProScreen™ is easy to do in the home studio and is also very inexpensive, with the total equipment cost of \$20.

While this article explains the process of creating and printing with screens, more complete instructions for using ProScreen can be found on our website at [www.kaiserglass.com](http://www.kaiserglass.com). If you would like to take a course, we have an upcoming Webinar on January 12, 2016, and will also be teaching this technique at the Glass Craft & Bead Expo in Las Vegas, Nevada.

## Creating the Pendant

The first step is to develop a design for the pendant. Our favorite demonstration image is Kokopelli, since it's easy to recognize and many artists like it as a design element.

1

*Create a negative to use for the main element of the design.*



You could draw one, which is not that difficult to do, by taking out your drawing marker and going to town on a white sheet. Once you're done, you can scan it into your computer to print out the negative, then reduce it to the size you want.

The second method is to use Google Image or a similar search engine to find an image. One caveat here—make sure the image is free and in public domain. If it's copyrighted or trademarked, you will need to pay for using it. Since we teach using some copyrighted designs, we pay to be members of two royalty free websites that have designs we like. My wife Sharon and I also create many of the designs we use.

Once you have selected the design for your piece, print it from the computer onto a piece of overhead transparency material to create the negative using either a laser or an ink jet printer. If using an ink jet, make sure your transparency material is made for use with an ink jet printer.

Check the printed negative to make sure you have a dark print. If the print is not dark, it will be difficult, if not impossible, to make a good screen. Also note that half tones—black-and-white pictures made of dots to create shades of gray—are not usable. The dots do not play well with the screen print process.

2 *Make a screen from the dark negative by placing the negative on top of the light-sensitive ProScreen™ material and exposing it to a UV light.*



The emulsion hardens on the screen wherever the UV light hits it. Any place the negative blocks the light, the emulsion does not harden and will wash away during the washout of the screen, which would be the next step before applying the paint. By the way, the washout is done with water, so no messy chemicals.

After the emulsion hardens under the UV light, wash away the unexposed area of the emulsion under running water. Dry the screen and expose the screen again to UV light to fully harden the remaining emulsion.

3 *Apply the paint to the screen.*



We now have our exposed, developed, and hardened ProScreen™ screen. The image that will print is the light area. It is a fine mesh fabric that our paint can go through, thus creating the print.

Another major choice we need to make is the color to print. For our printing we use Kaiser Glass Paints, which are specially formulated to work well with screen printing. There are 20 colors available, and most can be mixed to create an endless palette. Kaiser Glass Paints are highly pigmented to prevent bleed through from the color beneath and are also COE independent, since the print layer is so thin.

Many people start by using black, but I don't like that since black creates a very hard design. Even if I need a dark color, I use brown or blue. To me, it gives a more creative look. For this project I will use Orange.

4

*Screen the clear glass top layer for the pendant and select the glass for the bottom of the design.*



My first print for a project is usually on clear glass. The thickness of the glass depends on the rest of the project. Here I am using 3 mm glass. Note that when printed on clear, the design can be used face up or face down. Either way produces a colored image in your piece. Since we are using this for a pendant sized piece, I used a piece of glass approximately 1-1/2" x 1-1/2".

We now have the "top" piece for the pendant. To me this is the easy part. Now we get to the more creative nature of the project—what kind of glass to use behind the print. You have several choices:

- Solid colored piece of glass (very boring)
- Piece of iridized glass (With the proper top piece, this can be quite striking.)
- Multicolored glass
- Painted background using fusible paints (such as Kaiser Glass Paints)
- Screen print a background design (We often use this.)

In all of the above cases, we use a piece of glass the same size or larger than the top piece. In this case, we used a screen printed image with lots of small Kokopellis on a small piece of Wasser glass.

5

*Fuse the pieces together.*



Our fusing process is actually two different fuses for a pendant—and sometimes more. We bubble-squeeze and tack-fuse on our first fuse, which gives a single piece that is ready for shaping. Then we grind that piece to the shape we want before the final finishing fuse. Our preference for the final fuse is to use a top temperature of about 30°F below full fuse.

Our kiln is an 8" x 8" x 6", a fairly standard sized small kiln. The full fuse temperature of our kiln is 1510°F, but all kilns are different. Using the full fuse temperature will give you an idea for adjusting the schedule for your own kilns. Simply adjust your top temperature by the amount that your kiln's full fuse temperature differs from mine.

## Bubble Squeeze and Tack Fuse Schedule

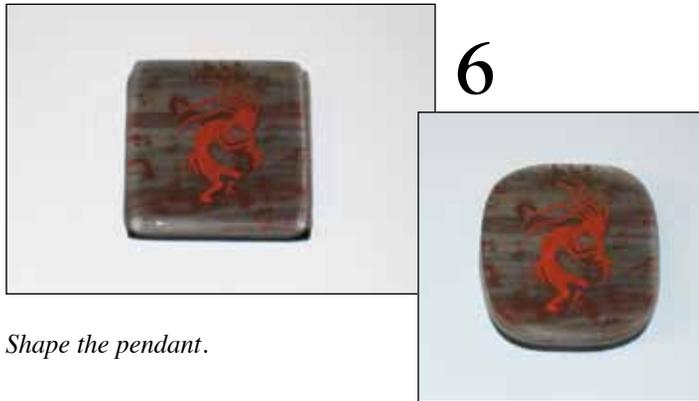
Segment 1: Ramp 9999 (AFAP\*) from room temperature to 1050°F and hold 30 min.

Segment 2: Ramp 90°F/hr to 1250°F and hold 30 min.

Segment 3: Ramp 9999 (AFAP\*) to 1410°F and hold 12 min.

Segment 4: Cool until you can remove the piece.

\*as fast as possible



Shape the pendant.

After fusing, grind the piece to shape.

Paint the edge of the glass in a complementary color.



Ninety five percent of the time we add what I call a frame—a complementary color painted around the side (edge) of the piece using Kaiser Glass Paints. This greatly enhances the piece, giving it a very finished look and has the added benefit of eliminating the gray, scummy look that is often found on the sanded edge of the piece after firing.

Once the edge is ground and painted and the paint has dried, do a final contour fuse.



I call this a contour, because I do not full-fuse as the final fuse. I prefer the look of a soft, curved edge as compared to the edge yielded by full fusing.

## Final Contour Fusing Schedule

Segment 1: Ramp 9999 (AFAP\*) from room temperature to 1250°F and hold 20 min.

Segment 2: Ramp 9999 (AFAP\*) to 1480°F and hold 12 min.

Segment 3: Cool until you can remove the piece.

\*as fast as possible

The piece is now finished and ready for the bail of your choice to make a delightful pendant. As you can see, there are no great secrets to this process. You do have to learn the screen printing process, but using ProScreen™ makes it pretty simple.

Once you've learned how to screen, your creativity can take over. Even in the piece we made, you can make many different looks using the same screen by adjusting the image placement, changing the print color, or adjusting the background, all using the same reusable screen. Even with one simple screen, you can make many dozens of very different pieces.

**GPO**



Barry Kaiser, a chemical engineer and 1968 graduate of the Rensselaer Polytechnic Institute, has worked in jewelry since 1973 when he began using lapidary techniques for faceting and capping gemstones. He later transitioned into goldsmithing and in 1994 discovered glass. His interest in the medium blossomed, because it enabled his experimental nature to come out. In 2001, Barry determined that the kiln formed glass area was too large and decided to specialize in jewelry-size, kiln fired glass. His engineering background created the perfect basis to experiment in this small medium.



Barry and his wife Sharon work out of their home studio, where many of the processes that he uses and teaches were developed. He shares these techniques freely through his classes, in online tutorials, and Webinars presented by Glass Patterns Quarterly. You can see his work and his tutorials at [www.kaiserglass.com](http://www.kaiserglass.com) and reach him by e-mail at [barry@kaiserglass.com](mailto:barry@kaiserglass.com).

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Figure by Robert Mickelsen  
 Marble by William "Boxfan" Menzies

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# Birds of a Glass Feather

*Design, Fabrication, and Text by Erica Biery Collins*

Inspiration for this adaptation of a dream catcher came from a friend who was having a baby and wanted a feather dream catcher to hang in her nursery. She sent me an image of a few feathers and colors she thought would look good, and they became the basis for my design. I used Spectrum System 96 glass for this particular project.

A few opaque and iridescent pieces were sparingly used to give this project a little variety, and I felt it was important to balance these pieces. I chose seven feathers and traced the left and right ones for balance and symmetry of the piece. Feel free to modify and change the colors or design of this project to make it unique to you. Because feathers in nature can come in so many shades and colors, use your artistic license when creating this piece.



## **System 96® Sheet Glass**

### ***Transparent***

100SFS Clear, 1/2 Sq. Ft.  
532-1SF Caribbean Blue  
140.8SF Pale Purple  
543-2SF Grape  
533-3SF Deep Aqua  
518-1 Bronze

111SF Dark Amber

121SF Light Green

136SF Cobalt Blue

130-8SF Pale Blue

### ***Opalescent***

675-5SF Godiva

### ***Fusers Reserve***

Southwest Reaction

### ***Iridescent***

I/543-2SF Grape

I/151SF Cherry Red

*All colored glass cut from scrap*

## **System 96® Frit**

F3-1108-96 Medium Amber Fine Frit

### **Tools and Materials**

Toyo Pistol Grip Glass Cutter Running Pliers

1/8" Leather Suede Cord or Lace

ThinFire Kiln Shelf Paper

24-Gauge High-Temperature Wire

Liquid Hair Spray Foam Paint Brush

Driftwood or Wooden Dowel

# 1

*Start by cutting out pieces of the clear fusible glass as the base for each of the feathers.*



It was easiest for me to just lay the clear glass over the top of the pattern and cut. I used the Toyo pistol grip glass cutter, which features tap wheel technology, for this project and for all of my projects. This cutting head allows for more precise cutting, because it drives the score deeper with less effort.

# 2

*Cut out the colored pieces to place on the top of the clear base.*

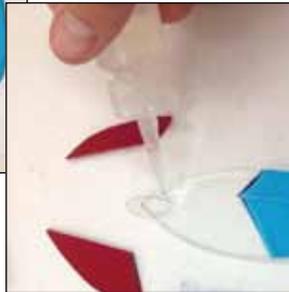


I found it easiest to keep track of the pieces as I cut them out to number the feathers and apply them to the base as soon as they were cut out. I chose to primarily use transparent glass for this project to transmit light through the pieces if it were hung in a window. These colors could be laid on top of the pattern and cut.

When I was working with opaque glass, I cut the pattern pieces out with scissors and traced them onto the glass, then cut. The opaque pieces were cut on the inside of the pattern line to allow for room later to apply frit between the pieces. After all the pieces are cut, use liquid hair spray to adhere the colored pieces to the clear base feather.



3



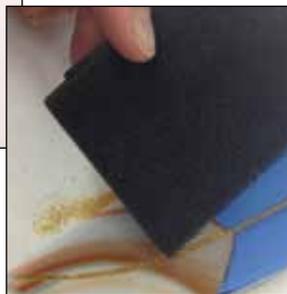
Glue pieces of the high-temperature wire bent into loops at the top of the feathers between the colored glass and the clear base.

It is easier to put the glue down first on the clear glass, then the wire, then the colored glass on top. Be sure the wire is totally covered with the top glass piece before the glue dries, or it will not fuse between the layers.

I love using hairspray as a glue, because you can just put a few drops next to each piece and the hairspray will seep between the pieces. Let the glue dry 24 hours before applying the frit to be sure that the pieces will not shift.



4



Once the glue is dry, apply the medium amber fine frit between the different sections of the feathers for colored definition lines.

I sprinkled some down and used a foam brush to push the excess frit off.

5

Take the feathers to a full fuse in the kiln on a piece of ThinFire kiln shelf paper for a smooth finish.



6



After the pieces are fired, use a 1/8" leather suede lace to hang the feathers from a piece of drilled driftwood.

You can also use a wooden dowel for hanging the feathers. Because they might be different widths, it's a good idea to lay the feathers out the way you would like for them to hang, then mark and drill the wood.

I hope this dream catcher project catches you some happy and creative dreams. Enjoy! **GPO**

### Firing Schedule

These temperatures and times are based on my own kiln. Remember that every kiln is different, so you may need to make adjustments for your particular kiln.

- Segment 1: Ramp 400°F/hr to 1000°F and hold 10 min.
  - Segment 2: Ramp 9999 (ASAF\*) to 1450°F and hold 15 min.
  - Segment 3: Ramp 9999 (AFAP\*) to 1000°F and hold 10 min.
  - Segment 4: Ramp 800°F/hr to 950°F and hold 45 min.
  - Segment 5: Ramp 500°F/hr to 700°F and no hold.
  - Segment 6: Ramp 200°F/hr to 120°F and no hold.
- \*as fast as possible



Erica Biery Collins is a glass artist from Northampton, Pennsylvania, who was introduced to the glass industry many years ago while working at a stained glass warehouse. During her tenure there, she traveled the country learning various glass techniques from world-renowned artists. She now uses her knowledge and skills to create stunning glass pieces using fused glass, stained glass, and mosaics.

Erica also exhibits in local juried fine art shows, gift shops, and art galleries throughout Pennsylvania. She emphasizes finding ways to integrate the various mediums for architectural purposes such as lighting, wall mosaics using fused pieces, stand-alone stained glass, or mosaic designs with fused glass accents.

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# Cardinals

Design by Paned Expressions Studios, Text by Darlene Welch



Nothing cheers the heart more on a cold winter day than the sight of a brilliant red cardinal and his mate. Many a backyard birdwatcher who feeds the birds keeps a lookout for these beautiful creatures. Since they don't migrate like many other birds, they can also be seen and heard all year long giving off their sweet calls during the morning hours.

This 18"-diameter stained glass panel from the Paned Expressions Studios pattern CD, *Nature's Bounty - 1*, has a feeling of realism and depth thanks to the way the birds' tails are placed in front as well as behind the outer border. The eyes can be added with the black glass used to create the facial mask on the male or with black glass paint, if desired. Bird loving glass enthusiasts everywhere will enjoy adding this charming panel to their decor.

**GPO**

## Wissmach Glass Co.

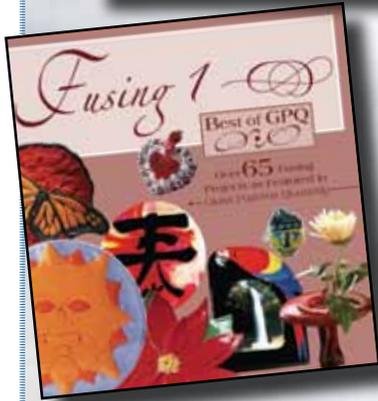
- WO-27 Orange/Green/Opal/Crystal for Female Cardinal, 1 Sq. Ft.
- WO-29 Orange Opal for Male Cardinal, 1 Sq. Ft.
- WO-28 Dark Red/Opal/Crystal for Male Cardinal, 1 Sq. Ft.
- BLACK Dense Black for Facial Markings and Eyes, Scrap
- 2-L Yellow/Opal/Crystal for Beaks, Scrap
- 23-L Light Green Opal/Copper Red for Leaves, 2 Sq. Ft.
- 178-D Medium Amber/Sky Blue/Opal/Crystal for Background, 2 Sq. Ft.
- 155-L Dark Purple/Green/Light Opal/Crystal for Branches, Scrap
- 42-LL Burgundy/Medium Amber Streaky for Berries, Scrap
- 161 Salem Green for Border, 2 Sq. Ft.

## Tools and Materials

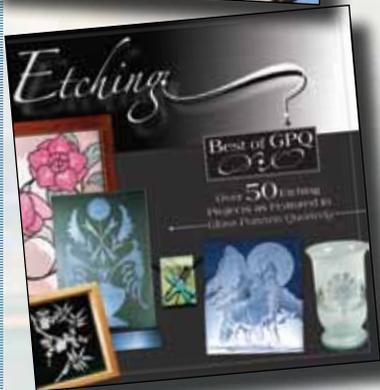
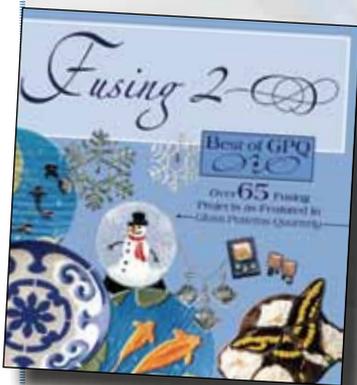
- 7/32" Copper Foil Flux Solder
- Black Patina 1/4" U-Channel Lead

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Eric Markow (left) and Thom Norris (right) with their Paragon Pearl-56. Eric and Thom spent several years developing the woven glass technique shown above. Photo by Marni Harker.

## “We love the even, consistent heat of the Paragon Pearl-56” — Markow & Norris

Eric Markow and Thom Norris are noted for creating woven glass kimonos, which have been called “impossibly beautiful.” The kimonos weigh an average of 125 pounds.

Eric and Thom fire their glass in nine Paragon kilns. “Now that we’ve done all our testing, and have actually cooked sculpture in the Pearl-56, it is our favorite kiln and we love the even, consistent heat,” they said recently.

The Pearl-56 has elements in the top, sidewalls, and floor. The kiln uses advanced power ratio technology to balance the heat between the top and bottom sections in increments of 10%.

The digital Pearl-56 has lockable casters, levelers, two

peepholes in the front, two vent holes in the top, mercury relays, and a ceramic fiber lid. The Pearl-56 firing chamber is 30” wide, 56” long, and 16 ½” deep (top to bottom).

If you are not yet ready for the massive Pearl-56, then choose the exact size Paragon kiln that you need. We offer a full range of glass kilns from the small FireFly to the intermediate Fusion and CS clamshells to the Ovation ovals.

For more information on these exciting kilns, see your distributor, or call us for a free catalog.



Autumn Sunset Kimono by Markow & Norris. The partners fire their glass in Paragon kilns. Photo by Javier Agostinelli.



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# Giraffe

Design by Hiroyuki Kobayshi and Jeffrey Castaline, Text by Darlene Welch

Giraffes have fascinated many cultures over the years, as can be seen in the abundance of paintings, books, and cartoons that feature these unique creatures. Many giraffes reach a height of seventeen feet and are blessed with long legs and necks that make it possible for them to feed from the trees that grow in their native African habitat.

Aanraku Glass Studios celebrates the giraffe in this 24" x 54" stained glass panel from *Aanraku Eclectic XIV*, a collection of patterns from the *Aanraku Original Collection, Volume 14*. The studio has been creating and teaching glass art since 1962 and offers a wide variety of services including custom pattern design and intensive stained glass courses geared toward making artists and glass hobbyists proficient in the stained glass craft. Visit [www.abasg.com](http://www.abasg.com) to learn more about all of Aanraku's offerings.

**GPO**

## **Spectrum Glass Co.**

315-6S White/Dark Amber for Giraffe, 4 Sq. Ft.

315-2S White/Medium Amber for Giraffe, 4 Sq. Ft.

315-1S White/Light Amber for Giraffe, 4 Sq. Ft.

319-6S Dark Amber/White Wispy for Eyes, 1/2 Sq. Ft.

201-61S Ivory Opalescent for Background, 4 Sq. Ft.

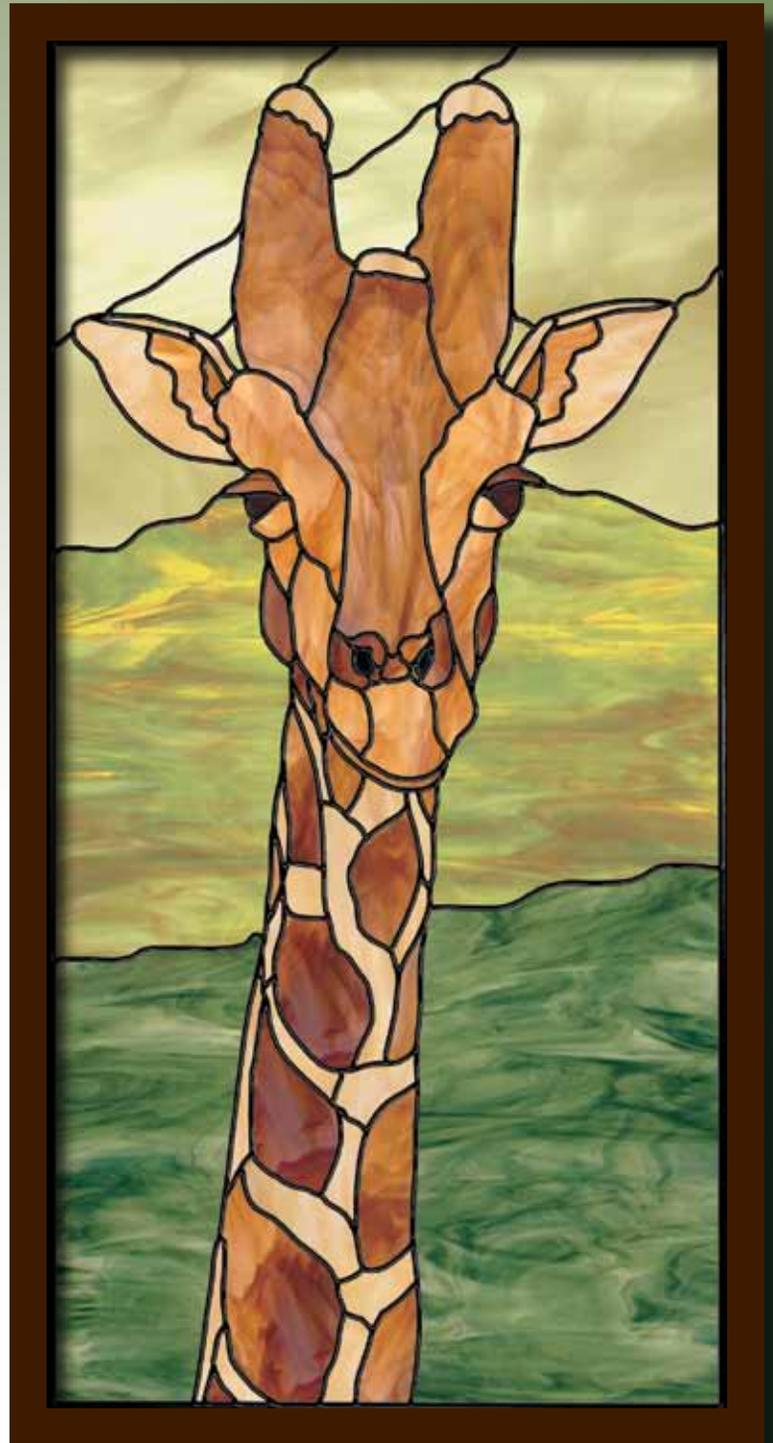
621-7S Amber/Green/White for Background, 4 Sq. Ft.

622-7S Forest Green Opal for Background, 4 Sq. Ft.

## **Tools and Materials**

7/32" Copper Foil Flux Solder

Black Patina 1/2" U-Channel Zinc

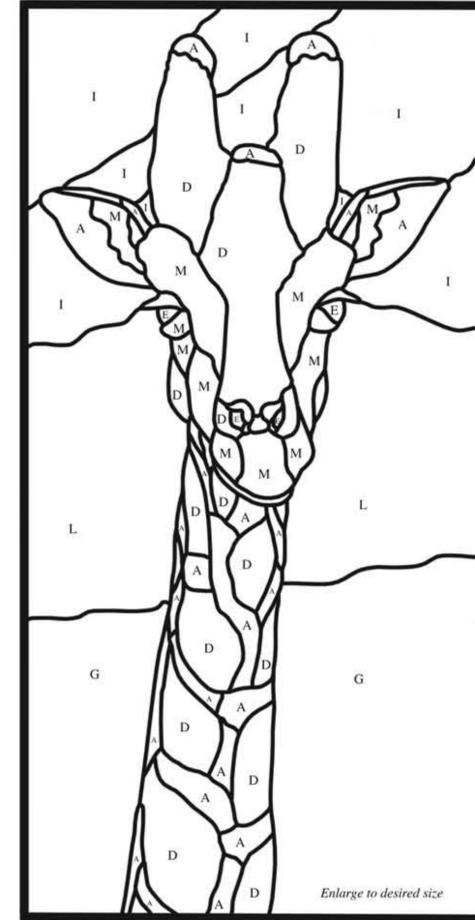


Giraffe

Design by Hiroyuki Kobayashi  
and Jeffrey Castaline

Spectrum Glass Co.

- D - White/Dark Amber for Giraffe, 4 Sq. Ft.
- M - White/Medium Amber for Giraffe, 4 Sq. Ft.
- A - White/Light Amber for Giraffe, 4 Sq. Ft.
- E - Dark Amber/White Wispy for Eyes, 1/2 Sq. Ft.
- I - Ivory Opalescent for Background, 4 Sq. Ft.
- L - Amber/Green/White for Background, 4 Sq. Ft.
- G - Forest Green Opal for Background, 4 Sq. Ft.



Enlarge to desired size

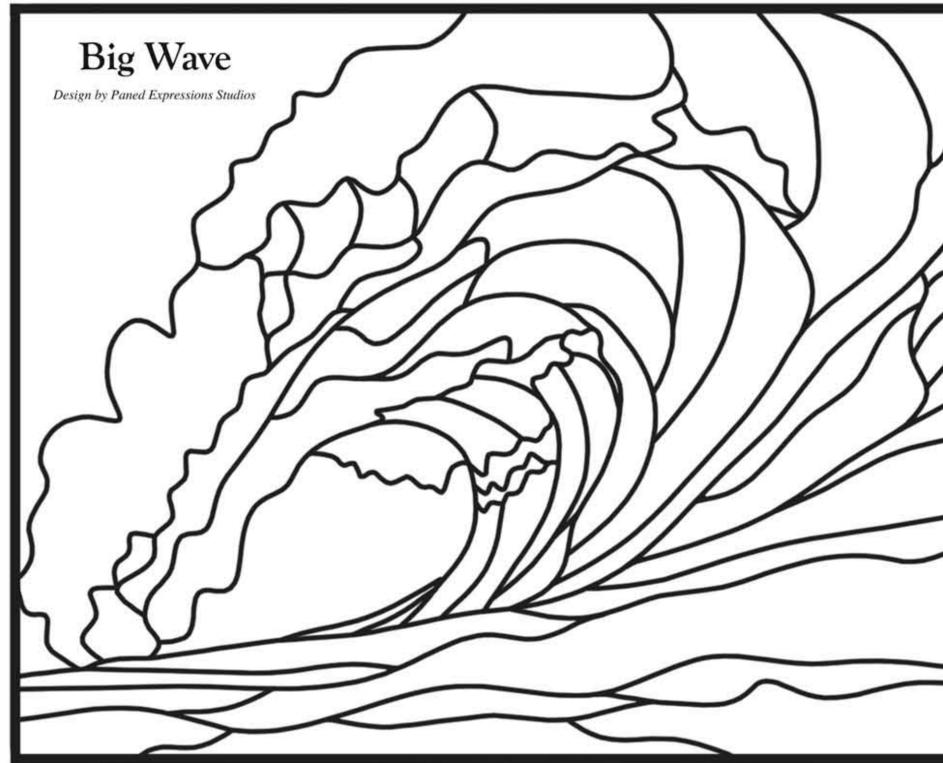
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- Spectrum Glass Co.**  
 B - Teal Green on Clear Baroque™ for Background, 2 Sq. Ft.  
 C - Medium Blue Waterglass® for Body and Tail Tips, 1-1/2 Sq. Ft.  
 G - Grape Waterglass® for Eye, Wing, Head Crest, Tail, and Eyespots, 1 Sq. Ft.  
 M - Moss Green Waterglass® for Tail and Eye Spots, 1 Sq. Ft.  
 S - Sky Blue Waterglass® for Tail, 1 Sq. Ft.  
 I - Black Waterglass Iridescent for Eye, Eyespots, and Crown Feathers, 1/2 Sq. Ft.

- Wissmach Glass Co.**  
 27-D Orange/Opal/Crystal for Sky, 2 Sq. Ft.  
 51-DDXXM Opal/Crystal for Water, 2 Sq. Ft.  
 WO-437 Dark Blue/Light Amber/Medium Purple/Opal/Crystal Wispy for Water, 1 Sq. Ft.  
 2180-D Light Violet/Opal/Crystal for Water, 1 Sq. Ft.  
 WO-707 Light Blue/Dark Blue/White Opal Wispy for Water, 3 Sq. Ft.  
 WO-707-L Light Blue/Dark Blue Streaky Wispy for Water, 3 Sq. Ft.  
 WO-703-L.L. Blue/Purple/White Opal Streaky Wispy for Water, 2 Sq. Ft.  
 437-L Dark Blue/Light Amber/Medium Purple/Opal/Crystal for Water, 1 Sq. Ft.

Big Wave

Design by Paned Expressions Studios



Love is in the Air

Design by Lisa Vogt

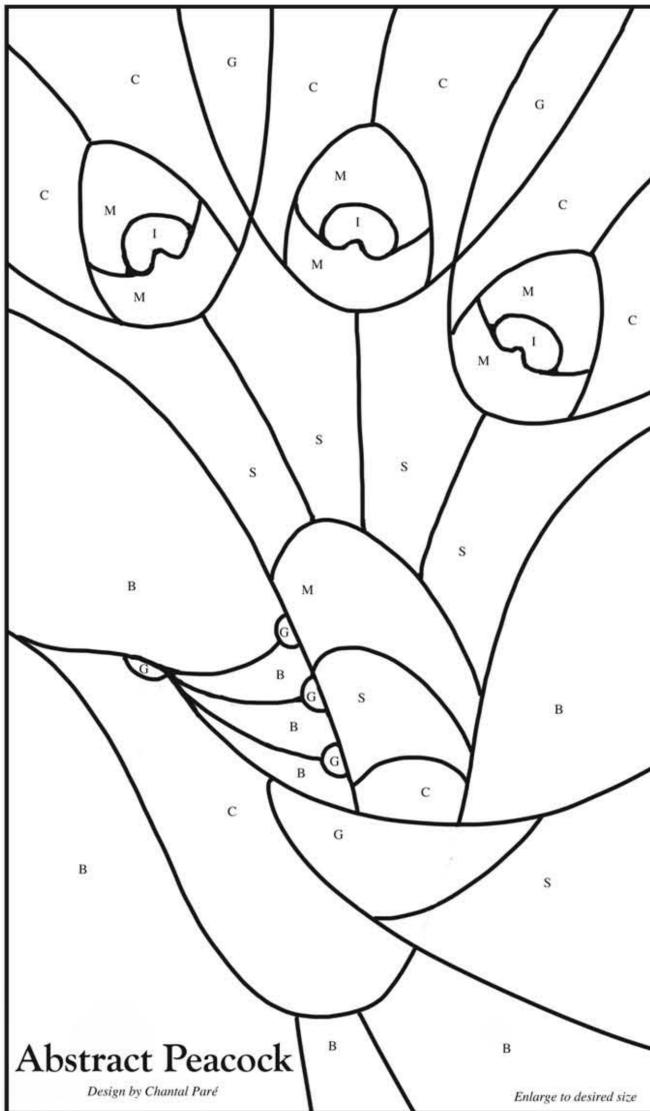
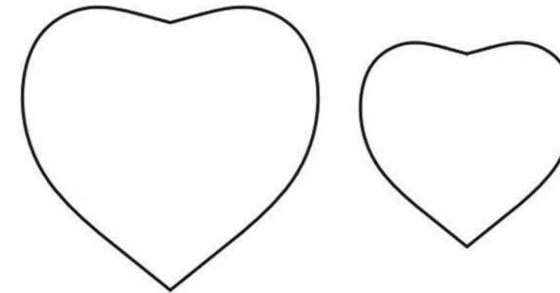
System 96®

Spectrum Glass

- 1/200SF Iridescent White for White Wedding or Red Hearts Base Layer, 1/4 Sq. Ft.
- 1/151SF Iridescent Cherry Red for Red Hearts Base Layer, 1/4 Sq. Ft.

Uroboros Glass

- 12-200-96 White Bits on Clear for White Wedding Heart Top Layer 1/4 Sq. Ft.
- 60-625-96 Dark Red/Red Opal for Red Heart Base Layer, 1/4 Sq. Ft.
- 12-200-96 White Bits on Clear for Red Heart Top Layer 1/4 Sq. Ft.
- 12-2502-96 Red Bits on Clear for Red Heart Top Layer, 1/4 Sq. Ft.



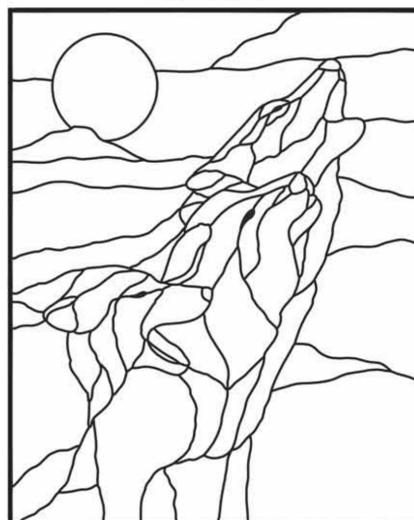
Abstract Peacock

Design by Chantal Paré

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Call of the Wild

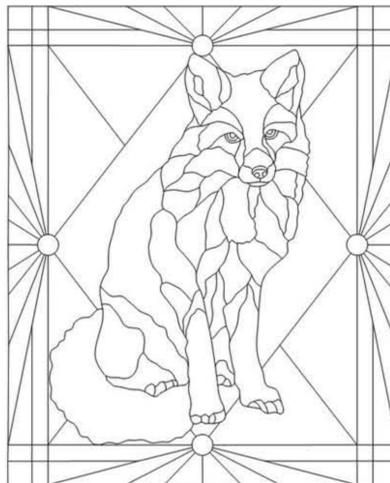
Design by Mary Harris



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Spirit of the Fox

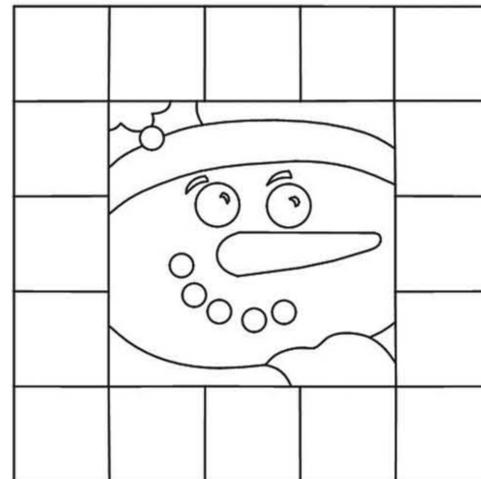
Design by Michelle Carlson



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Frosty the Snowman  
Fused Plate

Design by Lisa Vogt

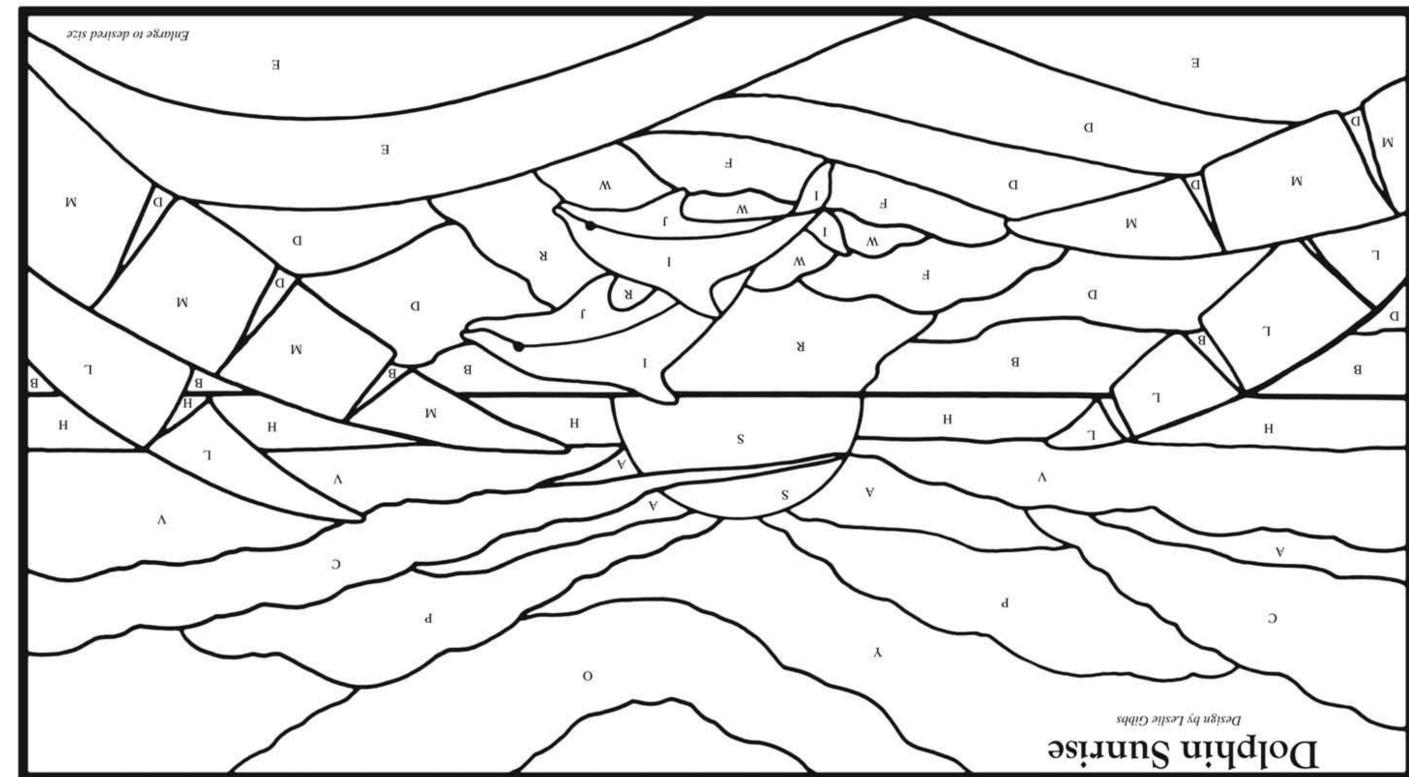


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- Wissmach Glass Co.**  
 WO-703 Blue/Purple/White Opal Wispy for Sky, 2 Sq. Ft.  
 8-D Gold Pink/Cobalt Blue for Moon, 1 Sq. Ft.  
 65-L Medium Brown/Blue Light Opal for Middle Landscape, 1 Sq. Ft.  
 65-D Medium Brown/Blue Dense Opal for Middle Landscape, 2 Sq. Ft.  
 WO-709 Green/Amber/White Opal Wispy for Distant Landscape, 1 Sq. Ft.  
 WO-59 Dark Brown/Green/Opal/Crystal Wispy for Front Landscape, 2 Sq. Ft.  
 502-D Dense Opal/Medium Gray/Brown for Front Wolf, 1 Sq. Ft.  
 502-L Light Opal/Medium Gray/Brown for Front Wolf, 1 Sq. Ft.  
 557-L Medium Gray/Light Opal for Center Wolf and Wolf Ear Interiors, 2 Sq. Ft.  
 71-L Brown/Green/Light Blue/Opal/Crystal for Far Wolf, 1 Sq. Ft.  
 43-L Burgundy/Opal Rough Rolled for Wolf Mouths, Scrap

- Bullseye Glass Co.**  
 000336-0030F Deep Gray Opalescent for Nose and Eyes, 1/2 Sq. Ft.  
 003203-0021 Woodland Brown Opal/Ivory/Black for Body and Face, 3 Sq. Ft.
- Wissmach Glass Co.**  
 IS03-D Opal/Dark Gray/Brown for Ears and Toes, 3/4 Sq. Ft.
- Youghigheny Glass**  
 4050HS Emerald Green Opal/Yellow High Strike for Border, 2 Sq. Ft.  
 1302SP Ice White, Amber, Brown Stipple for Legs and Eyes, 3/4 Sq. Ft.  
 5002SP Beige Stipple for Border, 2 Sq. Ft.
- Spectrum Glass Company**  
 1009AVSF Black Adventure for Pupils, Scrap  
 6011-85CC Hawkings for Chest and Face, 1 Sq. Ft.  
 100SF Clear Nuggets for Pupils
- Uroboros**  
 UR65542 Blues/Violets/Clear Granite for Background, 2-1/2 Sq. Ft.  
 151SF Cherry Red Nuggets

- Spectrum System 96®**  
 100SF Clear for Base, 1 Sq. Ft.  
 200SF White Opal for Snowman and Border, 1 Sq. Ft.  
 1009SF Black for Border, Eyes, and Mouth, 1/2 Sq. Ft.  
 230-72SF Medium Blue Solid Opal for Background, 1/2 Sq. Ft.  
 238-72SF Alpine Blue Solid Opal for Scarf, 1/4 Sq. Ft.  
 200-76SF Dark Green Solid Opal for Holly, Scrap
- Uroboros Glass System 96**  
 60-2702-96 Orange Opal for Carrot Nose, Scrap  
 60-602-96 Flame Red Opal for Berry, Scrap



Design by Leslie Gibbs  
Dolphin Sunrise

- Spectrum Glass Co.**  
 S - White/Pale Amber for Sun, 1/2 Sq. Ft.  
 Y - Pale Amber/White Wispy for Reflection, 1 Sq. Ft.  
 O - White/Orange for Sky, 2 Sq. Ft.  
 R - White/Yellow for Sky, 2 Sq. Ft.  
 A - White/Orange-Red for Sky, 1 Sq. Ft.  
 H - Yellow/White for Top Palm Leaves, 1 Sq. Ft.  
 V - Yellow/White for Third Cloud Line, 3 Sq. Ft.  
 C - Grape for Second Cloud Line, 3 Sq. Ft.  
 P - Pale Purple for Third Cloud Line, 2 Sq. Ft.
- J** - White/Light Gray for Dolphin Bellies, 1/2 Sq. Ft.  
**I** - Charcoal Opal for Dolphin Backs, 1 Sq. Ft.  
**M** - Moss Green for Bottom Palm Leaves, 1 Sq. Ft.  
**L** - Light Green for Top Palm Leaves, 1 Sq. Ft.  
**W** - Steel Blue for Wave Foam, 1 Sq. Ft.  
**F** - Pale Gray for Wave Foam, 1 Sq. Ft.  
**E** - Sky Blue for Wave Rows, 3 Sq. Ft.  
**D** - Deep Aqua for Wave Rows 2, 3, and 4, 3 Sq. Ft.  
**B** - Cobalt Blue for Horizon Waterline, 2 Sq. Ft.

## Out of the Box Fused Painted Pony

Design by Paned Expressions Studios

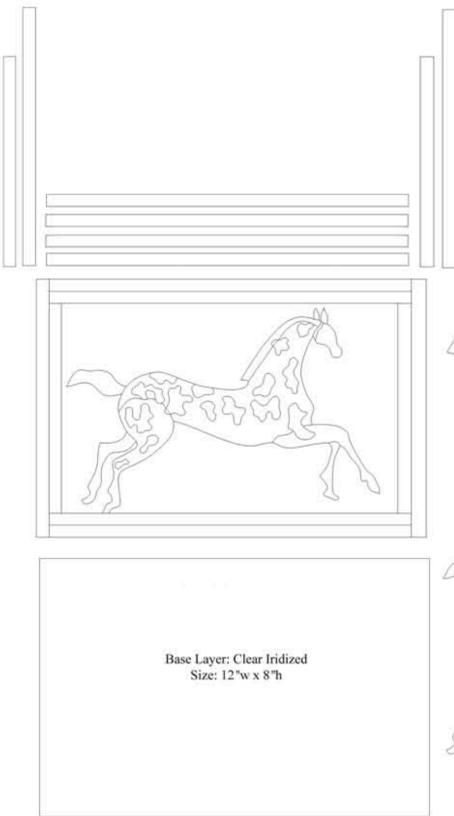
**Wissmach 90™**  
01 Clear for Background, 12" x 12"  
02 Black for Horse Body, 12" x 12"  
03 White for Horse Spots, 12" x 12"  
12 Blue for Border, 12" x 12"  
13 Red for Border, 12" x 12"

Layer 3 - White

Layer 2 - Black

Base Layer: Clear Iridized  
Size: 12" w x 8" h

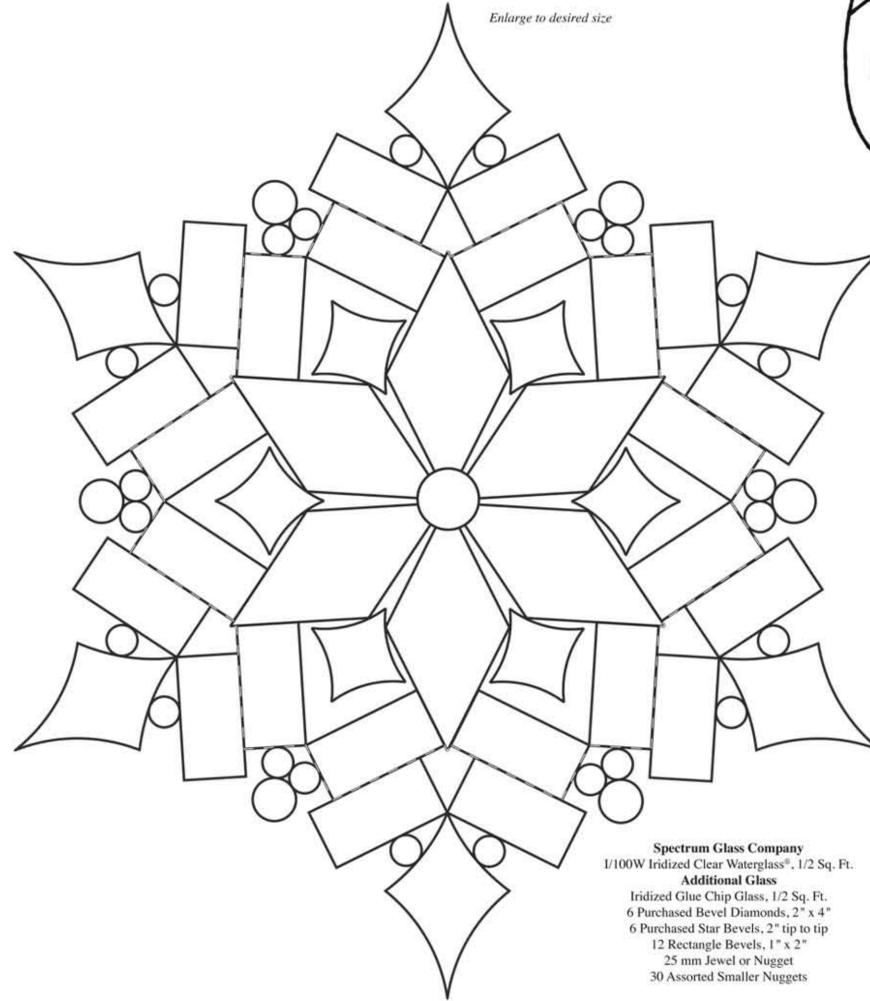
Enlarge to desired size



## Snowflake Magic

Design by Deverie Wood

Enlarge to desired size

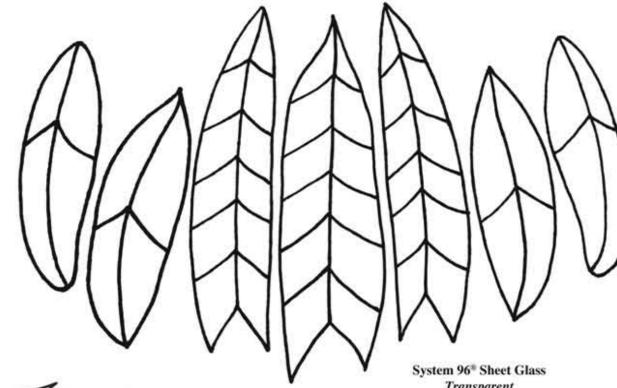


**Spectrum Glass Company**  
1/100W Iridized Clear Waterglass®, 1/2 Sq. Ft.  
**Additional Glass**  
Iridized Glue Chip Glass, 1/2 Sq. Ft.  
6 Purchased Bevel Diamonds, 2" x 4"  
6 Purchased Star Bevels, 2" tip to tip  
12 Rectangle Bevels, 1" x 2"  
25 mm Jewel or Nugget  
30 Assorted Smaller Nuggets

## Birds of a Glass Feather

Design by Erica Biery Collins

Enlarge to desired size



**System 96® Sheet Glass**  
**Transparent**  
100SFS Clear, 1/2 Sq. Ft.  
532-1SF Caribbean Blue  
140.8SF Pale Purple  
543-2SF Grape  
533-3SF Deep Aqua  
518-1 Bronze  
111SF Dark Amber  
121SF Light Green  
136SF Cobalt Blue  
130-8SF Pale Blue  
**Opalescent**  
675-5SF Godiva  
**Fusers Reserve**  
Southwest Reaction  
**Iridescent**  
1/543-2SF Grape  
1/151SF Cherry Red  
*All colored glass cut from scrap*  
**System 96® Frit**  
F3-1108-96 Medium Amber Fine Frit

## Desert Fritscape

Design by Alysa Phiel

**System 96®**  
**Spectrum Sheet Glass**  
100SFS Clear for Fused Base, 10" x 10"  
226-74SF Amazon Green for Saguaro Cactus, 3" x 8"  
223-74SF Peacock for Saguaro Ribs, 2" x 10"  
534-2SF Violet for Filler, Scrap  
240-74SF Lilac for Filler, Scrap  
Browns and Ambers for Rocks, Scrap  
Purples for Rocks and Mountain, Scrap  
Greens for Prickly Pear Cacti, Scrap

**Uroboros Frit**

**Fine**

**Mountain**

F2-5384-96 Steel Blue

F2-5342-96 Violet

F2-5181-96 Bronze

**Creosote Bush**

F2-2262-96-8 Lemongrass Opal

F2-5262-96-8 Moss Green Transparent

**Medium**

F3-1108-96 Medium Amber for Rocks

F3-2206-96-8 Dark Green Opal for Creosote

Desired colors and textures for Landscape

(greens, browns, grays)

Desired colors and textures for Wildflowers

**Coarse**

F5-00-96 Clear

**Powder**

F1-5331-96 Sky Blue for Sky

F1-200-96 White for Clouds

**Glassline Glass Paints**

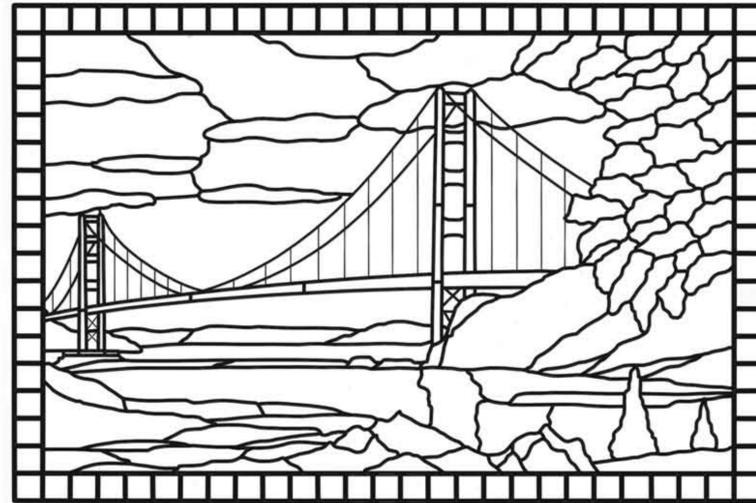
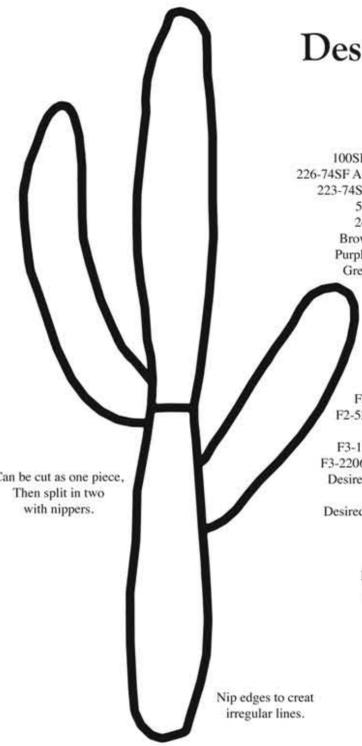
Dark Green

Kelly Green

Paint Liner Tips

Can be cut as one piece.  
Then split in two  
with nippers.

Nip edges to create  
irregular lines.

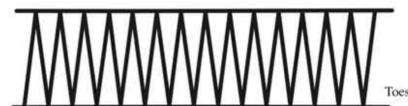


## Golden Gate

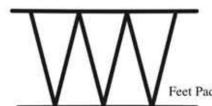
Design by Hiroyuki Kobayashi and Jeffrey Castaline

Enlarge to desired size

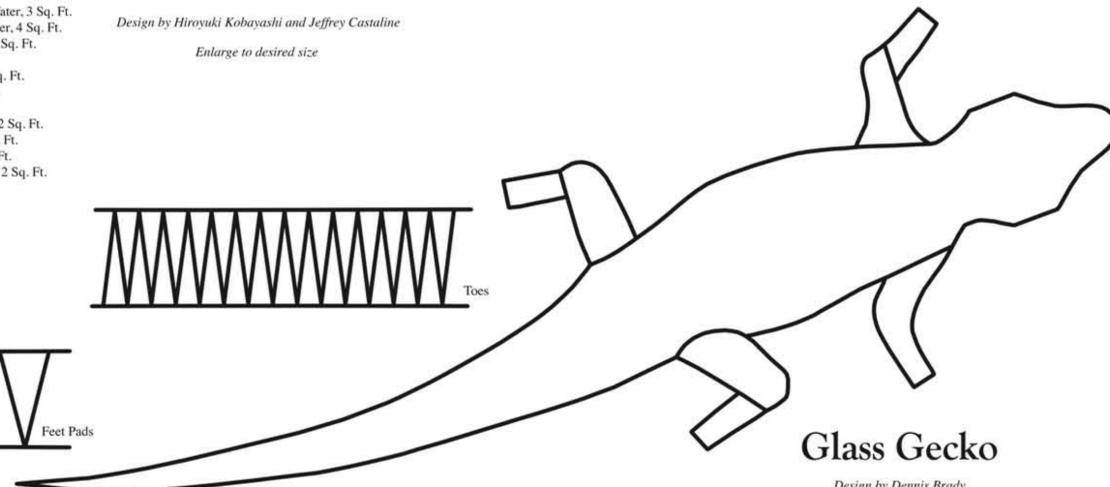
**Wissmach Glass Company**  
277-L Medium Blue Opal/Dark Blue for Sky, 5 Sq. Ft.  
10-D Orange/Light Green/Opal for Bridge, 1 Sq. Ft.  
196-L Cobalt Blue/Medium Purple/Medium Green/Opal/Crystal for Water, 3 Sq. Ft.  
WO-27 Orange/Opal/Crystal Wispy for Bridge Reflection and Border, 4 Sq. Ft.  
WO-613 Williamsburg Blue/Opal/Crystal Wispy for Clouds, 1 Sq. Ft.  
51-DDXXM Opal/Crystal for Clouds, 2 Sq. Ft.  
65-L Medium Brown/Blue/Opal for Distant Background, 1 Sq. Ft.  
557-L Medium Gray/Light Opal for Landscape, 2 Sq. Ft.  
100-L Dark Green/Opal for Landscape, 1 Sq. Ft.  
WO-59 Dark Brown Green/Opal/Crystal Wispy for Landscape, 2 Sq. Ft.  
613-D Williamsburg Blue/Opal/Crystal for Landscape, 1 Sq. Ft.  
WO-55 Amber/Green/Opal/Crystal Wispy for Tree, 2 Sq. Ft.  
245-L Medium Amber/True Green Streaky/Opal/Crystal for Tree, 2 Sq. Ft.



Toes



Feet Pads



## Glass Gecko

Design by Dennis Brady

## Cardinals

Design by Paned Expressions Studios

Enlarge to desired size



**Wissmach Glass Co.**  
WO-27 Orange/Green/Opal/Crystal for Female Cardinal, 1 Sq. Ft.  
WO-29 Orange Opal for Male Cardinal, 1 Sq. Ft.  
WO-28 Dark Red/Opal/Crystal for Male Cardinal, 1 Sq. Ft.  
BLACK Dense Black for Facial Markings and Eyes, Scrap  
2-L Yellow/Opal/Crystal for Beaks, Scrap  
23-L Light Green Opal/Copper Red for Leaves, 2 Sq. Ft.  
178-D Medium Amber/Sky Blue/Opal/Crystal for Background, 2 Sq. Ft.  
155-L Dark Purple/Green/Light Opal/Crystal for Branches, Scrap  
42-LL Burgundy/Medium Amber Streaky for Berries, Scrap  
161 Salem Green for Border, 2 Sq. Ft.



System 96®  
**Licorice Swirl**  
**OpalArt™**

Streams of contrasting Black and White entwine together in each bold, mesmerizing sheet of new Licorice Swirl OpalArt.



This dramatic, hand-stirred glass can also act as a neutral background for Transparent color overlays as shown above. Lighter colors in cool tones work best over sheets with substantial areas of White.

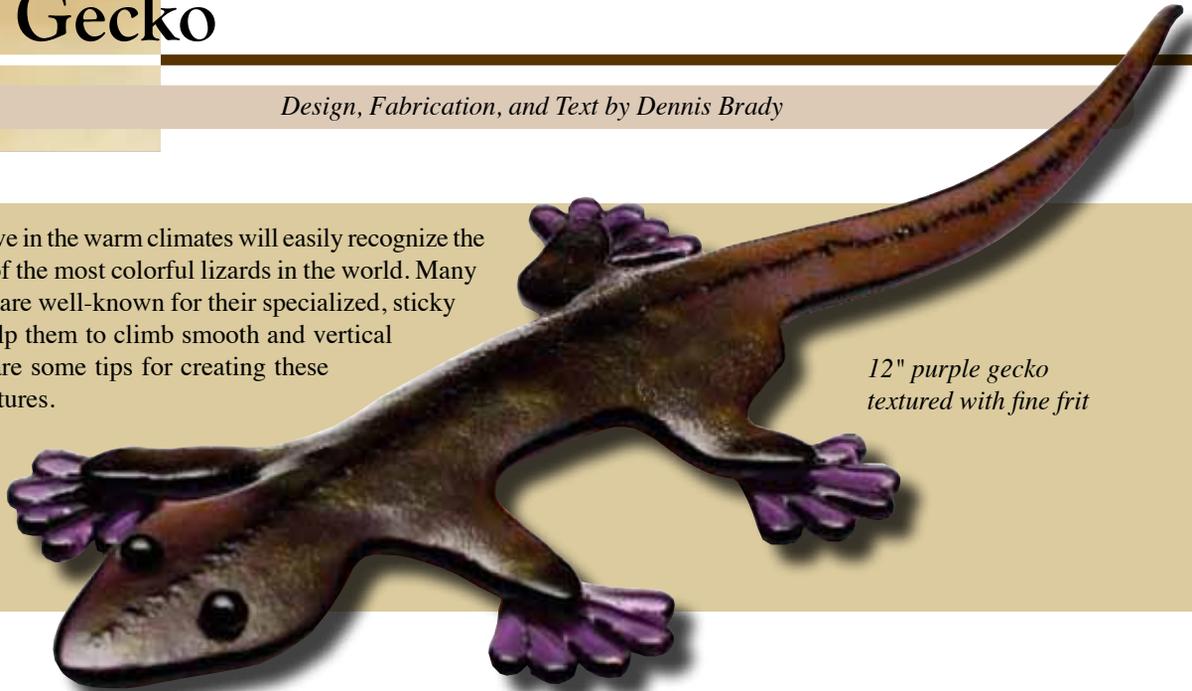
Licorice Swirl is part of the OpalArt family. See all seven tantalizing combinations online.



# Glass Gecko

*Design, Fabrication, and Text by Dennis Brady*

People who live in the warm climates will easily recognize the gecko, one of the most colorful lizards in the world. Many of these species are well-known for their specialized, sticky toe pads that help them to climb smooth and vertical surfaces. Here are some tips for creating these captivating creatures.



*12" purple gecko textured with fine frit*

## Preparation

You will need a sheet of 6" x 12" fusible glass and 2 small glass nuggets for the eyes. Also have frit, powdered glass, or mica powder available, if desired, to add color to the gecko and either ceramic fiber paper or casting mix and tubing to create the drape mold. Stringers can be added for claws or double eyes, if desired.

Start by cutting out 2 of the body pieces and 2 of each of the leg pieces. Next cut out either 20 toes or 4 foot pads. When you are cutting toes, I suggest you cut out a number of extra pieces, since they are small and often break erratically.

Grind or sand the pieces as needed to make them match. They don't have to be perfect, because the fusing will draw everything together. However, you do want to smooth out any curves and remove any spikes.

## Color Variations

If you plan to add glass powder or frit for color variations, set out a single layer of all the pieces on the pattern and sift or sprinkle on the frit or powder, as desired, for effect. ***It is essential for safety that you wear a respiratory mask any time you are working with powdered glass or frits.***

If you have had little experience adding frit or powder for coloration, add more than you think looks good, since powders and frits diffuse when they melt into the glass. When I add glass powder to a project, I sprinkle down enough to create the look I want. Then I add that much again. Double what you think will give you the look you want. With a bit of practice, you can get pretty good at guessing how different it looks from when first applied to how it looks after fusing.



*12" bronze glass gecko with gold mica powder*



*Toe assembly for gecko feet*

## Assembling and Firing the Body, Legs, Feet, and Head

Set the 2-layer assembly of body and legs in the kiln and fire to a full fuse. You will find suggested firing schedules for all of the steps at the end of the article. Remember, though, that each kiln is different, and you may need to adjust the times or temperatures to fit your own particular kiln.

You can make your gecko's feet either as single-piece pads or with 5 separate toes. If you plan to make the feet with separated toes, fire the toe assembly separately in the kiln to tack-fuse them together.

If you decide to cut out those little toes, take extra special care handling them, because they have needle-sharp pointed ends. They are nasty little devils that live to stab you at any opportunity. Grind, sand, or chip off the corners and assemble in the kiln as shown.

Set the body assembly in the kiln with either the premade feet with toes or the foot pads under the legs. Place 2 small glass nuggets on the head for the gecko's eyes. Tack-fuse the pieces together.

To create a curved back and to elevate the gecko with lowered legs to make it look as if it's walking, make a mold either with stacked strips of ceramic fiber paper or make a draping mold to produce the desired shape. A super easy way to make a mold is to pour casting mix (50/50 silica flour and pottery plaster) into a length of plastic pipe or cardboard tubing that has been cut in half.



*Making a mold by pouring silical plaster compound into a strip of plastic plumbing pipe cut in half*



*Silical plaster mold for draping the gecko*



*12" green gecko with marigold frit*

## Options and Embellishments

The pattern included is for a 12" gecko. You can enlarge it to produce a bigger one or reduce it to make a smaller one. You can also experiment with making the pattern thinner or fatter for a different looking lizard.



16" purple gecko  
textured with white frit

Varying the height of the drape mold will provide a different appearance as well. The higher you place the gecko, the more it will appear to be running. Just be sure to not place it so high that the feet won't spread out and flatten.

Any frit, powdered glass, or mica that is used to create color variations for the gecko can be added in during the initial full fuse as mentioned earlier, but you can also add it later during the tack fuse to create texture. If you are using mica powder, it looks best when applied during the tack fuse. To ensure that any added frit or mica powder doesn't slide off the rounded edges, it works best if you turn the body/leg assembly upside down so the surface with curved sides faces down onto the kiln shelf and the flat side is up. You can also add small pieces of glass stringer for claws or double layered eyes.

**GPQ**



A tack-fused gecko on the mold ready to drape

## Firing Schedules

### Full Fuse Two Layers

Segment 1: Ramp 400°F/hr to 1000°F and hold 20 min.  
Segment 2: Ramp 800°F/hr to 1460°F and hold 20 min.  
Segment 3: Ramp 9999 (AFAP\*) to 960°F and hold 60 min.  
Segment 4: Ramp 400°F/hr to 300°F/hr and no hold.

### Tack Fuse Combined Assembly

Segment 1: Ramp 200°F/hr to 1000°F and hold 20 min.  
Segment 2: Ramp 800°F/hr to 1360°F and hold 20 min.  
Segment 3: Ramp 9999 (AFAP\*) to 960°F and hold 60 min.  
Segment 4: Ramp 200°F/hr to 300°F and no hold.

### Drape Fuse Finished Assembly

Segment 1: Ramp 400°F/hr to 1000°F and hold 20 min.  
Segment 2: Ramp 800°F/hr to 1200°F and hold 20 min.  
Segment 3: Ramp 9999 (AFAP\*) to 960°F and hold 60 min.  
Segment 4: Ramp 400°F/hr to 300°F and no hold.

\*as fast as possible

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](http://www.debrady.com) to learn more about Dennis and his art. Also visit GPQ's website at [www.glasspatterns.com](http://www.glasspatterns.com) for details on his upcoming *Vitrigraph Webinars* on January 5 and 9, 2016.

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# GLASS PATTERNS

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Providing inspiration and information to  
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# The Illustrated Word

in Stained Glass Patterns



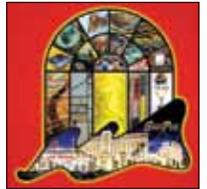
Twenty-One  
*Inspirational Patterns*  
 by Karen Stephenson  
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 www.GlassPatterns.com

## What's New



**Evenheat Kilns** now offers the **TAP Touch Screen Kiln Controller** on its kilns. The large display allows information to be presented in legible word form with nothing cryptic or confusing. Simply respond to the screen with a touch. The TAP controller is preloaded with firing schedules for glass, ceramic, or metal clay use but also allows personal firing information for full artistic control. Designed for computer networking via USB Wi-Fi or Ethernet connections, it allows users to monitor the kiln, develop and edit programs, and perform functions from a network-connected computer, tablet, or other mobile device. Wi-fi and Web based Apps are expected to be available by the end of 2015. Its many features include real-time graphical viewing and on-the-fly features plus diagnostic and preventative support. Visit the website to find out more.  
 989-856-2281  
 www.evenheat-kiln.com

The **2016 Glass Craft & Bead Expo** will be held at the South Point Hotel Casino in Las Vegas, Nevada, with **classes from March 30–April 3**. The tradeshow will be open April 1–3. The 2016 show catalogs were mailed at the end of October 2015. If you are not on the mailing list and would like to receive a catalog, please visit the website and click on “Mailing List.” Those already on the list who have address or contact changes should make sure to update their information by clicking “Change” on the registration site. Registration for classes and hotel accommodations began on October 30. There are many new teachers along with a fabulous lineup of returning instructors.  
 800-217-4527 702-734-0070  
 www.glasscraftexpo.com



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**Creative Paradise Inc.** has **three new molds** for fused glass artists. The GM172 13" Round Pansy Platter mold will help you create a colorful slumped floral serving dish. GX17 is a 7" x 7" tile mold for an ever popular mandala pattern. The triangular GM173 10" x 10" x 9" mold is 0.5" deep and provides the perfect way to create a representation of a Christmas tree or your favorite piece of pizza as well as many other applications. Visit the company's website for more details on these new molds.

316-794-8621 cpi@creativeparadise.biz  
 www.creativeparadise.biz

**Lamp Base Specialties** announces **two new products** for help with displaying your beautiful lamp shades—the 117-4 18" Prairie Inverted Harp base and the 118-4 17" Prairie 2-lite base. The company proudly offers quality lamp bases made in the USA for all of your cherished lamps. All bases, regardless of style, are fully assembled with furniture pads. You can be sure you are buying quality Lamp Base Specialty products by looking for the gold-and-black label on the back of the socket at the back of your lamp base. Visit the company's website to see all of the great products available plus a link to tips on the best ways to show off your lamp shades.  
 708-361-1199  
 www.lampbasespecialties.com



**Spectrum Glass Co.** has **two new OpalArt colors** that add a dramatic flair to your glass art. Strawberries and Cream features rich swirls of White Opal and Red Transparent glass, with orange tones that strike more red when fired. Licorice gathers classic swirls of black and white opal glass. The swirl patterns in each piece of glass is unique and provides dual duty for use in stained



glass and mosaics as well as 96 COE projects. These dramatic glasses can also act as a neutral background for Transparent color overlays.

425-483-6699 info@spectrumglass.com

www.spectrumglass.com

Aanraku presents new **Snap & Switch Cabochons** to help make your jewelry fit your mood. Personalize each day's accessories by the day, minute, or hour. Attach the connector to the back of your glass pieces with adhesive, then pop them in and out to suit your mood any time of the day or night. Snap & Switch makes modular jewelry available for everyone.

650-372-0527

www.abasg.com



**D&L Art Glass Supply** is proud to offer **Profusion Studio's new 1/4 Sheet Sampler Designs**. These dichroic patterned glass sheets offer 10 patterns per sheet, affording instant variety. Now available are the New 2015 Design Sampler and the Best Seller Sampler. Both are available on black or clear substrate in 90 or 96 COE. These sheets are a great choice for pendants, earrings, and bracelets or as an enhancement to any fused glass piece. The Sampler sheets join

D&L's existing line of Profusion 1/4 sheet and 4x4 offerings as well as fusible decals. Visit the company's website to see these and more.

800-525-0940 info@dlartglass.com

www.dlartglass.com

**Franklin Art Glass** is pleased to announce **two new product lines that are a perfect combination**, Creative Paradise Molds

and ZYP Boron Nitride Mold Release Spray (formerly known as MR-97). Both the molds and the spray may be purchased on Franklin's website, in the store, over the phone, or via fax. The Creative Paradise product line includes molds like the ever popular wine bottle slump, square molds, frit dump molds, jewelry molds, and so much more. See Franklin's website or stop in the store for more details.

800-848-7683 614-221-2972

www.franklinartglass.com



**1 Glass Impressions** presents the **LED Face Shield Lighting Kit™** that provides simple installation of LEDs on any plastic or glass grinder face shield. This waterproof shield means no more glare, eight years of lighting, and 6-watt power with adapter and switch. The kits come in large and small sizes.

920-382-1807

www.1glassimpressions.com



**Kay Bain Weiner**, founder and director of the KBW foundation, will be **assuming the role of Chairwoman Emeritus** as she turns over the organizational and operational reins of the foundation to Denny Berkery, owner of The Vinery, and Steve Shupper of Glass Accessories International. Kay and husband Herbert E. Weiner were inspired to found the organization in July 2005, with the mission of stimulating interest and growth in the glass arts through educational projects and provide scholarships, supplies, and books to high schools, colleges, and other educational venues. The transfer of leadership will be official on November 1, 2015. Berkery and Shupper were selected for their outstanding connections and accomplishments within the glass art community, expertise, and commitment to the ongoing welfare of the industry, as well as their dedication to the education of the younger generations of future glass artists and enthusiasts. Inquiries about the foundation can be e-mailed to Denny Berkery.

vinery@vineryglass.com

www.kbwfoundation.com

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# Desert Fritscape

*Design and Fabrication by Alysa Phiel, Text and Photography by Jane McClarren*



Create this fused Southwest landscape using the wonders of frit. You can design mountain shadows, wild flowers, and the textures and colors of nature by layering different sizes of frit. Course frit will give your project texture and dimension, while fine frit creates more subtle designs. Using mosaic nippers adds to the organic design of the great outdoors, while the Glassline paints draw in the details. Have fun using these techniques to make this wonderful project or experiment with a landscape of your own. Layering textures, colors, and details is what makes the saguaro cactus fritscape go multidimensional.

## System 96®

### Spectrum Sheet Glass

100SFS Clear for Fused Base, 10" x 10"

226-74SF Amazon Green for Saguaro Cactus, 3" x 8"

223-74SF Peacock for Saguaro Ribs, 2" x 10"

534-2SF Violet for Filler, Scrap

240-74SF Lilac for Filler, Scrap

Browns and Ambers for Rocks, Scrap

Purples for Rocks and Mountain, Scrap

Greens for Prickly Pear Cacti, Scrap

### Uroboros Frit

#### Fine

##### Mountain

F2-5384-96 Steel Blue

F2-5342-96 Violet

F2-5181-96 Bronze

##### Creosote Bush

F2-2262-96-8 Lemongrass Opal

F2-5262-96-8 Moss Green Transparent

#### Medium

F3-1108-96 Medium Amber for Rocks

F3-2206-96-8 Dark Green Opal for Creosote

Desired colors and textures for Landscape  
(greens, browns, grays)

Desired colors and textures for Wildflowers

#### Coarse

F5-00-96 Clear

#### Powder

F1-5331-96 Sky Blue for Sky

F1-200-96 White for Clouds

### Glassline Glass Paints

Dark Green

Kelly Green

Paint Liner Tips

### Tools and Materials

Mosaic Nippers Basic Glass Cutting Tools

Elmer's® Clear Glue Pump Hair Spray

Flat-Bottom Sifter Safety Mask

Protective Eyewear Sharpie® Marker

Clean Paint Brush (optional)

Spectrum PAPYROS® Kiln Shelf Paper  
or Prepared Kiln Shelf

1

Use nipped pieces of brown, amber, and purple scrap glass for the rocks.



Place the 10" x 10" piece of clear glass on kiln paper or a prepared kiln shelf. This will make it easier to transport to the kiln. It might be helpful to have a corner of the glass pointing toward you.

Using mosaic nippers, cut rocks of different shapes and sizes from the brown, amber, and purple scrap glass. Determine the layout of the rocks along the bottom corner of the clear base and glue them in place using Elmer's Clear Glue. Add some overlapping rocks as a second layer and glue them in place.

2

Pour some Medium Amber frit into the jar lid and sprinkle it into the spaces between the rocks.



It's okay if some of the frit winds up on the top of the rocks. Spray the frit with hair spray to hold it in place.

3

Using your fingers, sprinkle on small amounts of green, brown, and gray frits for the landscape and set with hair spray.



Frit mixes can be created by combining different colors and textures of frit in empty frit jars. This is a great way to use up the small amounts of color you might have left over from other projects. Mixes are very useful in creating landscapes.

Continue by adding medium frit in your desired colors for the wildflowers and spray with hair spray again. Before spraying any layer with hair spray, the frit can be rearranged using a clean, dry paintbrush.

Pour some clear coarse frit into your hand and scatter it over the rocks to help create dimension. You want to hold your hand about 6" above the area where you are scattering the frit so you can control where it lands. When you're happy with the placement of the frit, spray once again with hair spray.

4

Add the sky and clouds.

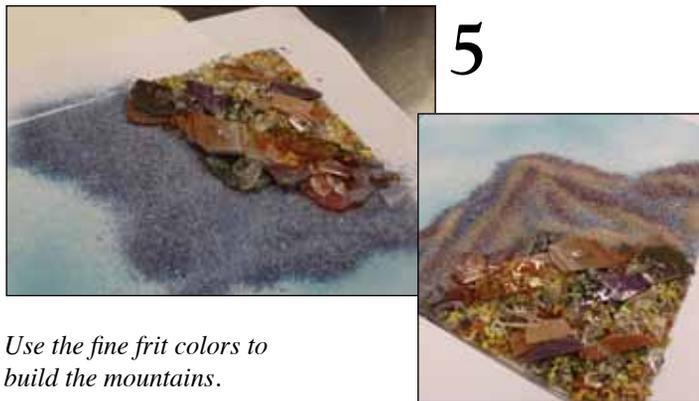


Hold the flat-bottom sifter over the top corner of the clear glass and pour some of the Sky Blue powder into the sifter. Move the sifter back and forth across the glass to cover all of the exposed clear glass with powder. Continue to add the Sky Blue powder until you are pleased with the way it looks. Pour any extra powder back into the jar.

Pour some of the White powder into the sifter and gently tap it to make soft, wavy patterns on top of the Sky Blue powder for the clouds.

Hold the hair spray bottle 10" to 12" above the powdered area and aim the sprayer out and away from you. This will allow a mist to fall over the powder but not disrupt it.

**Important Note:** When working with powdered frit, it is essential to be in a well-ventilated area that is out of direct drafts to avoid the powder from blowing into the air where it could be inhaled.



Use the fine frit colors to build the mountains.

Fine frit is good for creating more subtle designs such as the shape and shading for the mountains. Pour some of the Steel Blue frit into the jar lid and shake it onto the area above the rocks to form the mountains. Keep adding the blue frit until you have the desired shape.

Pour Bronze frit into the jar lid and use it to add soft lines on the mountains to add details and create depth. Continue in the same way with the Violet frit. Don't worry if some of these colors get on the rocks, since that will help to add the illusion of shadows. Mist the mountains with hair spray.



Trace, cut out, and place the cactus pieces.

Using the Sharpie marker, trace the saguaro pattern onto the Amazon Green glass. Cut the saguaro pieces with a glass cutter and break the glass using running or breaking pliers. Using mosaic nippers, add notches along the edges of the cactus pieces. Once you have determined the placement of the saguaro, glue the pieces in place with a few drops of Elmer's Clear Glue on the back of each piece.



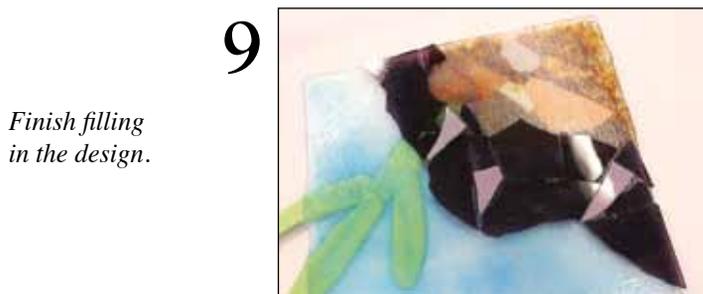
Using a glass cutter, cut wavy lines along the length of the Peacock glass.

This helps to mimic the ribs on a saguaro.



Determine the placement of the Peacock pieces, then nip them into different lengths and shapes using the mosaic nippers.

Place a drop of Elmer's Clear Glue on the back of each rib and place. Move the piece to the kiln and using the dimensional fuse program at the end of the tutorial, fire the panel with a maximum temperature of 1420°F.



Finish filling in the design.

Place the panel face down on kiln paper or a clean work surface. Nip various sizes and shapes of the purple scrap glass to fill in behind the mountains. We used 534-2SF Violet and 240-74 Lilac.

Follow the mountain outline with different pieces and colors to mimic mountain areas. Do not overlap the glass. Glue the pieces in place with Elmer's Clear glue. Turn the panel over once the glue has dried.



Paint details on the saguaro and draw in the branches of the creosote bush with the Glassline Paint.

Using Dark Green Glassline Paint and the liner tip, trace the outlines of the separate glass colors on the saguaro cactus. This color is good for creating shadows. Using the Kelly Green Glassline paint and liner tip, draw the branches of the creosote bush.

11

Using the mosaic nippers, create 16 to 20 small teardrop shapes in various sizes from green scrap glass.



The pieces should range in size from 1/2" to 1". Arrange the pieces to create the prickly pear cacti. Be sure to layer and overlap to make them look more dimensional. Glue the pieces in place.

12

Finish the details for the creosote bush.



Once the outline of the creosote bush is dry, use your fingers to sprinkle a small amount of Moss Green Transparent frit along the branches. Repeat with the Dark Green Opal frit, then the Lemongrass Opal frit. Spray with hair spray.

Move the piece to the kiln and fire the panel on the dimensional fuse program with a maximum temperature of 1420°F. **GPQ**

### Dimensional Fuse Schedule

Remember that each kiln fires differently, so you may need to adjust times or temperatures for your own particular kiln.

- Segment 1: Ramp 100°F/hr to 300°F and hold 15 minutes.
- Segment 2: Ramp 150°F/hr to 1050°F and hold 10 min.
- Segment 3: Ramp 250°F/hr to 1420°F and hold 1 min.
- Segment 4: Ramp 9999 (AFAP\*) to 950°F and hold 90 min.
- Segment 5: Ramp 100°F/hr to 800°F and hold 10 min.
- Segment 6: Ramp 300°F/hr to 100°F and no hold.

\*as fast as possible



Alysa Phiel is a third-generation glass artist and has over twenty years of experience creating in glass, teaching classes, and creating custom work for private collections. In 2009, she joined the staff of the Sonoran Glass School in Tucson, Arizona, as a teacher of fusing, mosaic, and stained glass classes.

Alysa's creativity knows no limits, ranging from intricate stained glass projects to Southwestern and ocean-themed mosaics and fused pieces. Her range of knowledge makes her a fantastic instructor for students looking to create any type of glass art in Sonoran's Warm Glass Shop.

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# Out of the Box

## Fused Painted Pony

*Design by Paned Expressions Studios, Fabrication and Text by Nancy E. Burke*



*Out of the Box is designed to help glass artists and hobbyists keep up with the latest developments in glass art and gain some tips along the way for inventive ways to put those products to good use. This time the box came from Wissmach Glass Company, the manufacturers of Wissmach 90™, a fusible 90 COE glass for discerning artists. Glass blanks are available in squares and rectangles, and circles in various colors.*

For the “Out of the Box” series, projects are designed using materials provided by GPQ glass industry partners. Snugly nested in the box for the current project were five 12" x 12" sheets of the new Wissmach 90 fusible glass. The clear, black, white, red, and blue palette they presented was used to fabricate an 8" x 12" spotted Appaloosa horse using a pattern from Paned Expressions Studios.

In this project, the challenges were precise cutting as well as fusing with a new glass. The cutting of the horse and the spots layered on it needed to be done with a ring saw, as there were numerous inside cuts. The fusing of the panel needed to be to a specific level—a tack fuse that rounded over the edges but retained the dips at the joints. Randy and Carole Wardell call this a “dimensional tack fuse” in their book, *Joy of Fusing*. This article will describe how I approached both challenges.

In the past, I’ve traced around a cutout onto the glass with a paint marker, letting it dry overnight or drying with a heat gun. I’ve often had problems with marks washing out during cutting, even when coated. Given the level of precision demanded by this project and the hassles of tracing around lots of cutouts, I needed to try something different.

Photography by Donald D. Burn and Nancy E. Burke

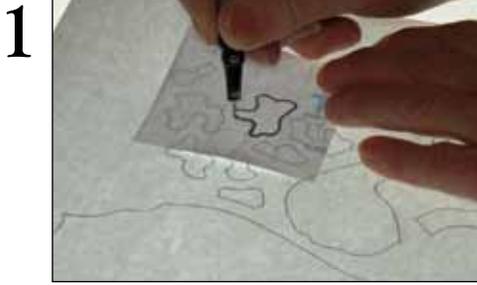
### **Wissmach 90™**

- 01 Clear for Background, 12" x 12"
- 02 Black for Horse Body, 12" x 12"
- 03 White for Horse Spots, 12" x 12"
- 12 Blue for Border, 12" x 12"
- 13 Red for Border, 12" x 12"

### **Tools and Materials**

Clear Con-Tact® Vinyl Shelf Liner  
Thinned White Glue Superglue  
Paper Towels Isopropyl Alcohol 91%  
Ring Saw Kiln Light Table Scissors  
Glass Cutter or Strip Cutter Breaker  
Ruler Burnisher Safety Glasses  
Silver Extra-Fine Pilot Paint Pen  
Black Extra-Fine Sharpie® Marker

Using a light box, trace directly onto pieces of clear Con-Tact vinyl shelf liner placed over the pattern.



I used an extra-fine Black Sharpie pen for the white parts of the design and an extra-fine Silver Pilot paint pen for the black, then dried them with a hair dryer.

Place the vinyl onto the glass.



I cut pieces of glass sized to the pattern sections I had selected, then applied the Con-Tact film after cleaning the glass.

To get good adhesion after applying the vinyl, place the peeled-off carrier on top, wax side up, and burnish it.



Cut the glass with the ring saw, making sure the inside part of the mark remains on the cut pieces.



As you cut successive pieces with the ring saw, it works better to do the cutting closer to the outside edge of the glass before cutting toward the inside. This ensures that the piece has support from neighboring glass during the cut.

The pieces for the border were cut to 3/8"-width strips with a strip cutter, then cut to length. The clear background piece was sized to 8" x 12" on the strip cutter as well. The Wissmach 90 scored and broke with ease, even in a 60°F studio.

Prepare a test tile before firing.



Before assembling and fusing the panel, I needed to know what temperature to use for my process temperature. Since I was striving for a specific effect where the fused pieces had some definition on the surface, I needed to fire test samples. My test pieces were 2" x 4" pieces of clear, with a 3/8" blue strip and a 3/8" red strip along the top edge. I then cut two 1" squares, one in black and one in white. On the black square, I put a white patch (as on the horse), and on the white square I put a black patch. I then placed a black patch between the two squares. The pieces were cleaned with 91% isopropyl alcohol and tacked together with tiny spots of superglue.

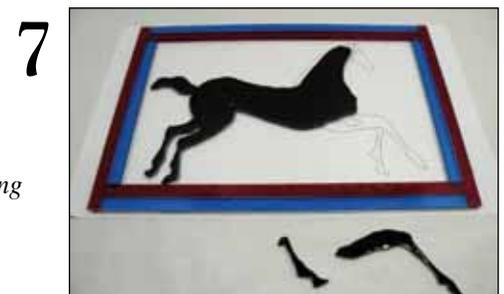
I did three test tiles: one at 1310°F, one at 1340°F, and one at 1355°F. The schedule ramped up at 350°F to 1100°F, held for 10 minutes, and went AFAP to process temperature. Going down, I went AFAP to 960°F, held for 30 minutes, and went 100°F/hr. to 700°F. The 1355°F looked best, with the glass rounded over somewhat, yet the texture was still well defined. Keep in mind that the results will likely differ with your own kiln.

As you do the test firings, assemble the actual panel, cleaning the pieces with alcohol and gluing them onto the panel.



To assemble the panel, I placed the panel drawing beneath the clear 8" x 12" sheet of glass. I first glued on the 3/8" strips with a light tack glue, such as diluted white glue, so I could square and reposition the pieces if necessary.

Assemble the base design over the pattern, checking to make sure you have a good fit.

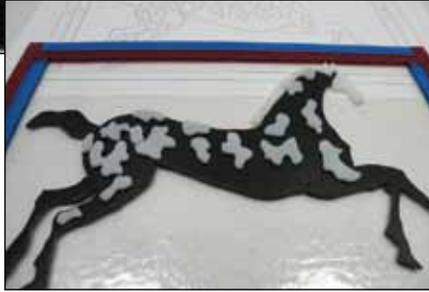


Once I glued the pieces, I did a test fit of the border and horse pieces, except for the patches. While doing this, I discovered that my printer had printed the image slightly off scale, so I had to keep that in mind as I positioned the pieces. I also ground some edges for a better fit. I glued the horse pieces with tiny dots of superglue and made adjustments for the scale as I went.



8

*Initially determine where you would like to place the patches of white on the pattern, then move them to the actual glass panel.*



After finishing with the adjustments, I removed the design from beneath the glass and placed it behind the panel on the work area. Next I placed the white “patch” pieces on their corresponding outlines on the pattern. Tiny dots of superglue were used to fasten the patches to the horse.

Looking at the work, I found that the fit of the rear leg was not tight enough to the rear of the body of the horse. I decided to add a new patch straddling the pieces at that point.

After glue-up, shelf paper was placed in the kiln, and the assembled panel was placed in the kiln for firing. The kiln was programmed to this schedule:

- Ramp 1: 350°F/hr to 1100°F and hold 10 min.
- Ramp 2: AFAP\* to 1360°F and hold 10 min.
- Ramp 3: AFAP\* to 960°F and hold 60 min.
- Ramp 4: 100°F/hr to 700°F and stop.

\*as fast as possible

I had added 5 degrees, thinking I could use a bit more after looking at the 1355°F test tile. In retrospect, it may have been better to fire at 1355°F or slightly less, as some of the design elements had begun to pull in, creating more distance between them on the second layer.



The resulting panel would be a welcome addition to an equestrian’s window, or it could be fired again to slump over a wave form mold to become a freestanding piece for a shelf or sill.

**GPO**



*Nancy Burke works in kiln-formed glass and makes landscapes, glass table items, and jewelry in her studio in Westborough, Massachusetts. She started her studio, Quicksilver Glass, in 2004, after a twenty-year career as a “techie”*

*in the computer industry and offers her work through shows, galleries, and by commission.*

*Nancy began working with stained glass as a hobbyist in the late 1990s before learning about kiln formed glass. Her glass education includes workshop courses from a variety of nationally known instructors in kiln formed glass, and she tries to take at least one workshop per year. She is also active in her local glass guild, the New England Chapter of the International Guild of Glass Artists. Nancy was formerly the “Cool Tools and Hot Ideas” columnist for Glass Craftsman magazine and is known for thinking outside the box.*

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# Frosty the Snowman Fused Plate

*Design, Fabrication, and Text by Lisa Vogt*

If you're looking for the perfect way to serve up your holiday fare, this 10" x 10" fused plate from Lisa Vogt will fill the bill. She has provided the instructions and fusing guide below just in time for your gift giving or adding to your own winter decor.



## **Spectrum System 96®**

100SF Clear for Base, 1 Sq. Ft.

200SF White Opal for Snowman and Border, 1 Sq. Ft.

1009SF Black for Border, Eyes, and Mouth, 1/2 Sq. Ft.

230-72SF Medium Blue Solid Opal for Background, 1/2 Sq. Ft.

238-72SF Alpine Blue Solid Opal for Scarf, 1/4 Sq. Ft.

200-76SF Dark Green Solid Opal for Holly, Scrap

## **Uroboros Glass System 96**

60-2702-96 Orange Opal for Carrot Nose, Scrap

60-602-96 Flame Red Opal for Berry, Scrap

## **Instructions**

Layer 1: Cut a clear glass base to 10" x 10".

Layer 2: Using the pattern as a guide, cut the Snowman face, hat, scarf, and the border pieces out of the suggested glass. Grind the pieces for a snug fit. Stack the glass on the base glass.

Layer 3: Cut the Snowman's eyes, mouth, carrot, and holly out of the suggested glass. Stack the cut pieces on layer 2. Full-fuse. Slump in a 10" square mold.

## **Firing Schedules**

### **Fusing Guide**

Segment 1: Ramp 300°F/hr to 1300°F and hold 30 min.

Segment 2: Ramp 300°F/hr to 1465°F and hold 10 min.

Segment 3: Ramp 9999 (AFAP\*) to 960°F and hold 40 min.

Let cool to room temperature.

### **Slumping Guide**

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.

Let cool to room temperature.

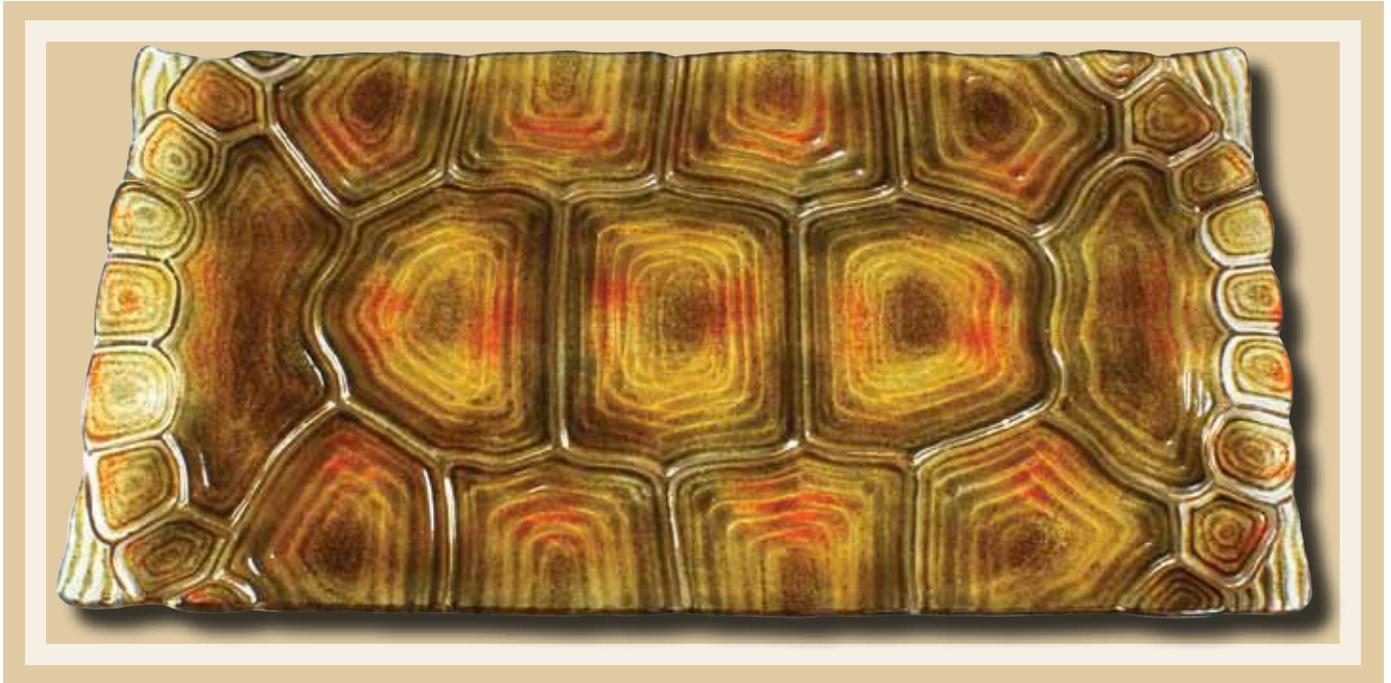
\* as fast as possible

**GPO**

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# Tortoise Shell Tray

Design, Fabrication, and Text by Kelley Mc Hugh



Inspiration from life in the wild comes in all forms. The tortoise shell design has been copied on everything from sunglasses to hair combs. Now you can re-create this lovely natural motif in glass using colors that suit your taste.

This tutorial can be used as a guide to make a DT10 Tortoise Shell Tray. The artist can also choose any assortment of frit colors and combinations following the basic guide lines given in this tutorial to create a wide variety of interesting art pieces.

## System 96® Sheet Glass

100SFS/DT Double Thick Clear, 6-3/4" x 12-3/4"

### Frit

F3-56-96 Powdered Black

F3-5284-96 Fine Olive Transparent

F3-171-96 Light Orange Transparent

F3-1102-96 Pale Amber

F3-1108-96 Medium Amber

### Creative Paradise Molds

DT10 Tortoise Shell

GM97 Raised Handle Tray

### Tools and Materials

Boron Nitride Spray Powder Sifter

Liquid Fired Gold Dust Mask

*Begin by treating the mold with the boron nitride spray in a ventilated area.*

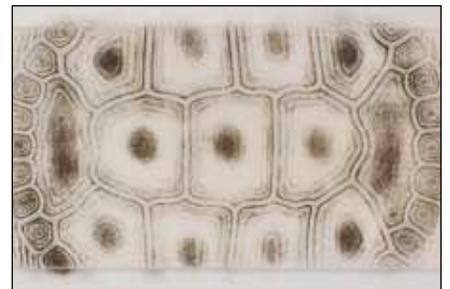
1



Several light coats with a short waiting period between coats is preferable to one heavy coat. Shake the can well before use and hold the can upright while using to assure proper distribution of the product. It is important to turn the mold at various angles to coat every part of the mold cavity. Be sure that you spray the product in a well-ventilated area.

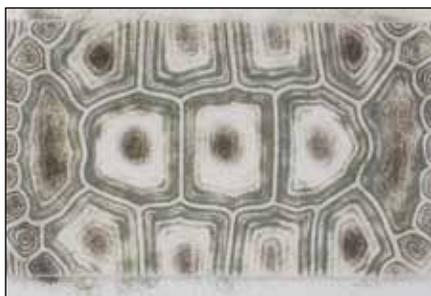
*Use a powder sifter to distribute the powdered Black frit around the edges and into the centers of each shell piece.*

2

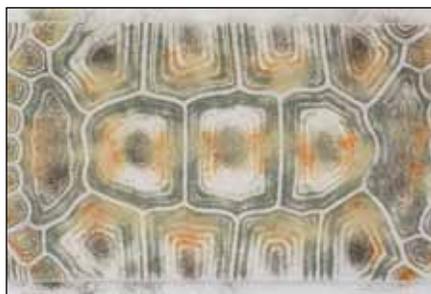


It is *essential* that you wear a safety mask to avoid inhalation of any of the glass whenever you work with frit.

3  
Using your fingers or a bead scoop, apply the fine Olive Transparent frit around the edges of the shell parts.



4  
Add the Light Orange and Pale Amber frits.



Apply Fine Light Orange Transparent Frit in a band along the center of the shell parts, the upper part of the side shell parts, and the lower portion of the end shell parts. Disperse Fine Pale Amber over the Light Orange areas.

5  
Cover the lower textured areas of the shell parts with Fine Medium Amber Frit.



Approximately 1/32" of frit will be in the shell parts of the texture mold. Use a finger to lightly sweep all of the frit from the raised area of the shell parts.

6  
Cut a 6-3/4" x 12-3/4" piece of Double Thick Clear and place it on the mold.



Place the mold in the center of the kiln and fire the project using the firing schedule in Table 1. After the project is fused, wash any residual Boron Nitrite from the fused glass.

7  
If desired, use a detail pen and liquid fired gold before slumping the tray to enhance the lines between the shell pieces with gold.



The fired gold will mature during the slump firing. Treat the GM97 Raised Handle Tray slumping mold with Boron Nitrite, once again being sure that you have adequate ventilation. Place the textured glass, texture side up, on the slump mold and fire the project using the slumping schedule provided in Table 2. **GPO**

#### Table 1 Firing Schedule

Segment 1: Ramp 275°F/hr to 1100°F and hold 10 min.  
Segment 2: Ramp 275°F/hr to 1215°F and hold 60 min.  
Segment 3: Ramp 100°F/hr to 1250°F and hold 15 min.  
Segment 4: Ramp 300°F/hr to 1455°F and hold 10 min.  
Segment 5: Ramp 9999 (AFAP\*) to 950°F and hold 60 min.  
Segment 6: Ramp 100°F/hr to 825°F and hold 10 min.  
Segment 7: Ramp 100°F/hr to 500°F and hold 5 min.

#### Table 2 Slumping Schedule

Segment 1: Ramp 275°F/hr to 1100°F and hold 20 min.  
Segment 2: Ramp 275°F/hr to 1215°F and hold 20 min.  
Segment 3: Ramp 275°F/hr to 1250°F and hold 5 min.  
Segment 4: Ramp 9999 (AFAP\*) to 950°F and hold 60 min.  
Segment 5: Ramp 100°F/hr to 825°F and hold 10 min.  
Segment 6: Ramp 100°F/hr to 500°F and hold 5 min.

\*as fast as possible

#### Important Firing Notes

One of the most important variables to consider when working in a kiln with glass is the accuracy of your kiln. If a kiln fires even 10 degrees hotter than the digital readout indicates or fires faster or slower because of age and usage of elements, a project can go wrong.

The firing schedule provided in this tutorial works as written in our test kilns. You should perform periodic tests on your own kiln to develop an understanding of how to adjust this schedule to match the idiosyncrasies of your kiln. Using a pyrometer to verify the temperatures may also help to determine accurate firing schedules.

*Kelley Mc Hugh earned her degree in journalism from Griffith College in Cork, Ireland. She has lived in the Middle East, Ireland, and England, and now resides in Kansas. Kelley is the social media and website content manager for Creative Paradise, Inc., and helps to create projects and write tutorials using Creative Paradise molds. Visit [www.creativeparadiseglass.com](http://www.creativeparadiseglass.com) for more tutorials and important firing notes.*



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# Love is in the Air

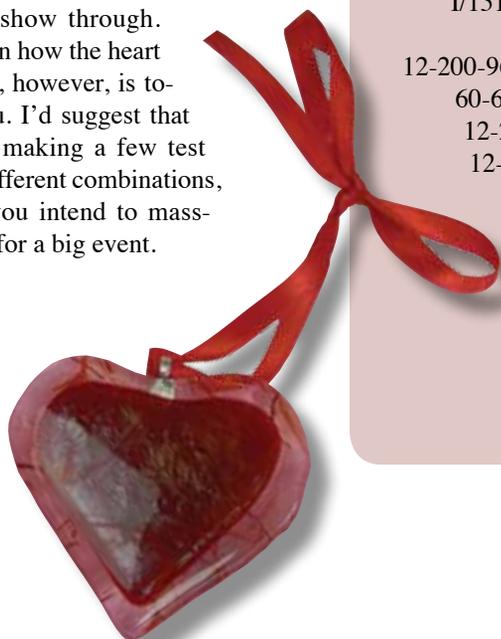
Design, Fabrication, and Text by Lisa Vogt

Hearts are the universal symbol for love. The wonderful thing about love is that we all have a limitless capacity to give more. It's one of the few really good things in abundant supply. We never run out of love or lose the ability to expand the depth and volume of our generosity.

Glass hearts make beautiful Valentine's Day gifts, it's true, but these sparkly gems are also fitting for a number of other special occasions. Next time you're in need of a party favor or present, be bighearted. Share the love. Give a heartfelt prize that will warm their hearts long after the affair is over and show how much you care all year long.

Hearts are traditionally red, but there's no reason why they can't be made in other colors. The shape is so easily recognizable that it's ideal for colorful self-expression. Think beyond the expected and let your personality and originality shine.

These hearts are made with two layers of glass, with one layer slightly smaller than the other. Whether the smaller layer becomes the base or the top depends on the look you want. One of the things I love about this type of assembly is the delicate, narrow edge detail. In general, the top layer is transparent, which allows the base layer to show through. The decision on how the heart is put together, however, is totally up to you. I'd suggest that you begin by making a few test pieces to try different combinations, especially if you intend to mass-produce these for a big event.



## System 96®

### Spectrum Glass

I/200SF Iridescent White for White Wedding or Red Hearts Base Layer, 1/4 Sq. Ft.

I/151SF Iridescent Cherry Red for Red Hearts Base Layer, 1/4 Sq. Ft.

### Uroboros Glass

12-200-96 White Bits on Clear for White Wedding Heart Top Layer 1/4 Sq. Ft.

60-625-96 Dark Red/Red Opal for Red Heart Base Layer, 1/4 Sq. Ft.

12-200-96 White Bits on Clear for Red Heart Top Layer 1/4 Sq. Ft.

12-2502-96 Red Bits on Clear for Red Heart Top layer, 1/4 Sq. Ft.

### Tools and Materials

Card Stock Black Sharpie® Marker

Fine-Point Magic Outline Paint Pen

Hanovia Bright Platinum Paint #05

Primed Ceramic Kiln Shelf

Silver Jewelry Bails E6000 Adhesive

1/4"-Wide Satin Ribbon, 22"

Paint Thinner or Acetone Nail Polish Remover

## Sampling Different Color Combinations and Techniques

1 Try several different glass combinations and assembly methods to narrow down the ones that give the best results.



There are very few things that I dislike when it comes to working in glass, but making samples is one of them. Like you, I just want to know I'm going to be thrilled with absolutely everything I make. But the truth is, I learn far more from the test pieces than the obvious. Don't hesitate to take that extra step. You won't regret it, I promise.

2 Load the glass in the kiln and center the larger top layers on the smaller base layers.



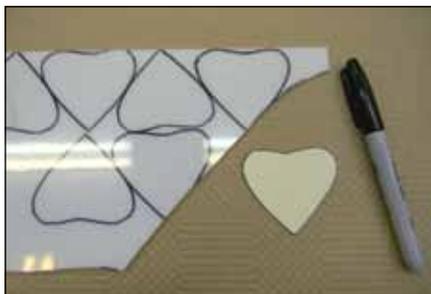
3 Fire to a full-fuse temperature.



## Making the Hearts

Once you decide which hearts are your favorites, it's time to cut out and assemble them.

4 Cut the heart-shaped pattern out of stiff paper such as card stock and draw the heart on the glass with a Sharpie marker.



5 Cut the base layer and top layer according to the patterns, then grind the cut glass to refine the shape of the hearts and remove any sharp edges.



Wash the heart-shaped pieces with water and dry them with a towel.

6 Practice writing the message on the glass you will be using for your pieces.



Working in a well-ventilated area, load the fine-tipped paint pen with platinum paint or other color of your choice. It takes a steady hand and a smooth stroke to make pretty text. Practice writing your message on a scrap of glass of the same color you will be using for your project before attempting the actual pieces.

7 When doing multiple pieces, finish writing on all of them before moving on.



When using the paint and pen, I work assembly line style. I have a bunch of items clean, laid out, and ready to be decorated all at the same time in one sitting. The pen works best when the well is full.

Note that once the paint pen is loaded with paint, it's impossible to reclaim any that is left over from the small well. Also, don't let paint dry inside the pen tip or well, since it will clog the tip and make it difficult to clean.

I generally paint several pieces, then immediately clean the well and tip by soaking them in a shallow bowl of acetone nail polish remover, since the paint is not water soluble. After the pen has soaked for a few minutes, clean the tip with the thin wire that comes with the pen. Allow the paint on the glass to dry completely before assembling the project.

8

Load the base layers on a primed ceramic kiln shelf, then center the top layer on the base layer inside the kiln.



9

Fire the glass to a full-fuse temperature using the fusing guide provided at the end of the tutorial.



If you are firing paint on the bottom of the heart, fuse the glass on a primed ceramic kiln shelf and **not on fiber paper**. The fiber paper doesn't allow the paint to cure properly, and the paint will come off.

Note that I recommend firing white glass on a primed ceramic kiln shelf as opposed to a primed fiberboard kiln shelf. White glass sticks to the primed fiberboard, so when the fused glass is removed it leaves a big hole in the fiberboard.

In some cases the glass edge is irregular in shape after fusing. If that happens, there's an easy fix. Grind the cooled glass on your wet grinder, then refire the heart to the fire-polish temperature to make the edge shiny. There is a firing guide provided at the end of the tutorial for suggested fire-polishing temperatures.

The wedding hearts are made with a small iridized white heart with the iridized side face up and the message written on the plain white, non-iridized side. Once dry, the painted glass is positioned on the primed, ceramic kiln shelf with the painted side down. A larger heart cut out of white bits on clear is centered on top of the smaller solid-white heart. When fused, the larger top layer wraps around the smaller base layer creating a lacy border.

In addition to being used to decorate the bottom, the paint can be applied and fired between layers of glass as well as on the top of the project. The red hearts are made in a similar way as the white hearts with a solid color on the bottom and a pattern with clear on top. Of course, any number of combinations will work. Here again, making test pieces will ensure that you get the results you are looking for.

10

Finish the hearts by gluing a silver jewelry bail to the back side of the fused glass with E6000 adhesive.



Let the glue dry overnight, then thread a satin ribbon through the bail and tie it into an elegant bow. Next time you celebrate a special occasion, give it your wholehearted best, because nothing says "Love" better than a handcrafted gift made from the heart. Cheers!

GPO

### Firing Schedules

All kilns fire differently. Test-fire your own kiln and take notes to ensure that you get the desired results every time.

### Fusing Guide

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.

### Fire-Polish Guide

Segment 1: Ramp 300°F/hr to 1365°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

*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.*

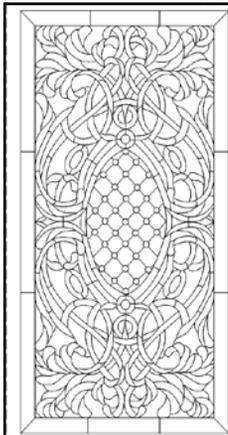


*Lisa is the author of fourteen design books and a series of instructional videos in addition to frequent articles for industry magazines and fiction for publication. She also lectures at national and regional seminars and has been a featured artist on HGTV and PBS. A huge supporter of public art, Lisa 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](http://www.LisaVogt.net) to find out more about her work and seminars.*

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# Big Wave

Design by Paned Expressions Studios, Text by Delynn Ellis

If there is such a thing as a perfect wave, you can find it on certain beaches in the winter season. The months between November and February are the best times to watch big wave surfing found on Hawaii's North Shore. These massive waves can sometimes swell up to thirty feet or more and can even be dangerous for experienced surfers. If your surfing skills aren't what they used to be, why not create this dramatic scene in glass? A glass saw may be better suited to cut the intricate, curvy design that makes up the wave's foam. You can also make your own design and cutting modifications to suit the tools that you are comfortable using.

You can capture those feelings for future reference in this 20" x 16" design from Paned Expressions Studios. It's part of the over 100 patterns collected on the studio's *Nature's Bounty – I* CD that is filled with distinctive designs of realistic wildlife, vast landscapes, sea and water life, birds, the four seasons, and beautiful gift-worthy decor panels. All patterns are provided as color and black-and-white image-only files in JPG, TIF, and GlassEye formats. A portion of the proceeds from this disk will be donated to the World Wildlife Fund. Visit [www.panedexpressions.com](http://www.panedexpressions.com) to see this and other offerings from Paned Expressions Studios. **GPO**



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*Diann Reina, owner of Stained Glass Crafters Workbench, San Antonio, Texas. Visit [www.sgcbench.com](http://www.sgcbench.com) for glass art courses, custom glass work and supplies.*

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# Call of the Wild

Design by Mary Harris, Text by Delynn Ellis

**W**olves travel in packs, and their eerie howl is unmistakable in the wilderness to warn prey that one of the most ferocious predators is in their midst. This 24" x 30" *Call of the Wild* design by Mary Harris captures three wolves' nocturnal battle cry.

While some say it is a myth that wolves howl at the moon, this evening setting features moonlit scenery in deep wispy and opal colors from Wissmach Glass. You can find this pattern and many more on Mary's website at [bestglasspatterns.com](http://bestglasspatterns.com).

**GPQ**



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WO-59 Dark Brown/Green/Opal/Crystal Wispy for Front Landscape, 2 Sq. Ft.

502-D Dense Opal/Medium Gray/Brown for Front Wolf, 1 Sq. Ft.

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557-L Medium Gray/Light Opal for Center Wolf and Wolf Ear Interiors, 2 Sq. Ft.

71-L Brown/Green/Light Blue/Opal/Crystal for Far Wolf, 1 Sq. Ft.

43-L Burgundy/Opal Rough Rolled for Wolf Mouths, Scrap

## Tools and Materials

7/32" Copper Foil Flux Solder

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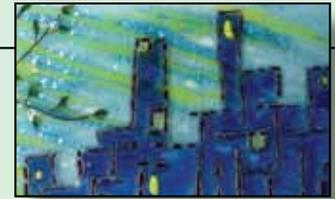
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# Golden Gate

Design by Hiroyuki Kobayashi and Jeffrey Castaline, Text by Delynn Ellis



In the words of J. Strauss on Opening Day of the Golden Gate Bridge in 1937, “This bridge needs neither praise, eulogy nor encomium. It speaks for itself. We who have labored long are grateful. What Nature rent asunder long ago, man has joined today.”

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This detailed 35" x 23" design with 309 pieces can be found in the *Aanraku Eclectic XIV* pattern book, which is filled with unique and hard to find patterns. In this 28-page pattern book you will find designs that include the Golden Gate Bridge, lotus flowers, various birds, koi fish, butterflies, a dragon, undersea creatures, and Japanese Samurai. Check out their website at [www.agasg.com](http://www.agasg.com) for more information on the hundreds of available stained glass patterns for beginners to advanced.

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51-DDXXM Opal/Crystal for Clouds, 2 Sq. Ft.

65-L Medium Brown/Blue/Opal for Distant Background, 1 Sq. Ft.

557-L Medium Gray/Light Opal for Landscape, 2 Sq. Ft.

100-L Dark Green/Opal for Landscape, 1 Sq. Ft.

WO-59 Dark Brown Green/Opal/Crystal Wisspy for Landscape, 2 Sq. Ft.

613-D Williamsburg Blue/Opal/Crystal for Landscape, 1 Sq. Ft.

WO-55 Amber/Green/Opal/Crystal Wisspy for Tree, 2 Sq. Ft.

245-L Medium Amber/True Green Streaky/Opal/Crystal for Tree, 2 Sq. Ft.

## Tools and Materials

7/32" Copper Foil Flux Solder

Black Patina 1/2" Zinc U-Channel Copper Wire

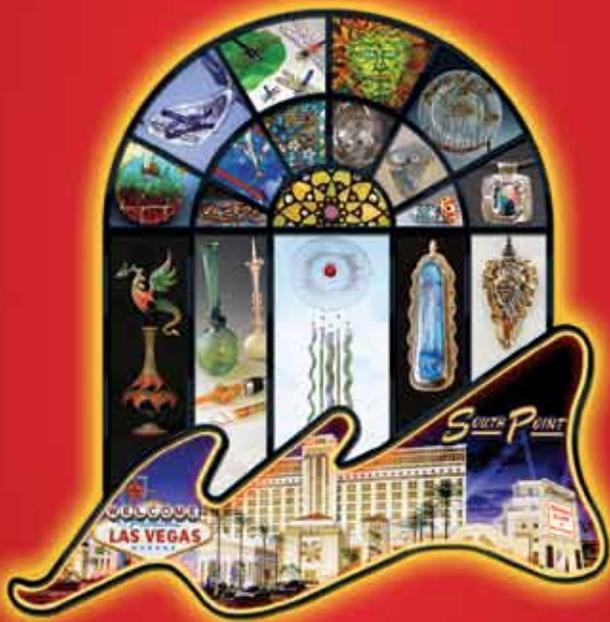
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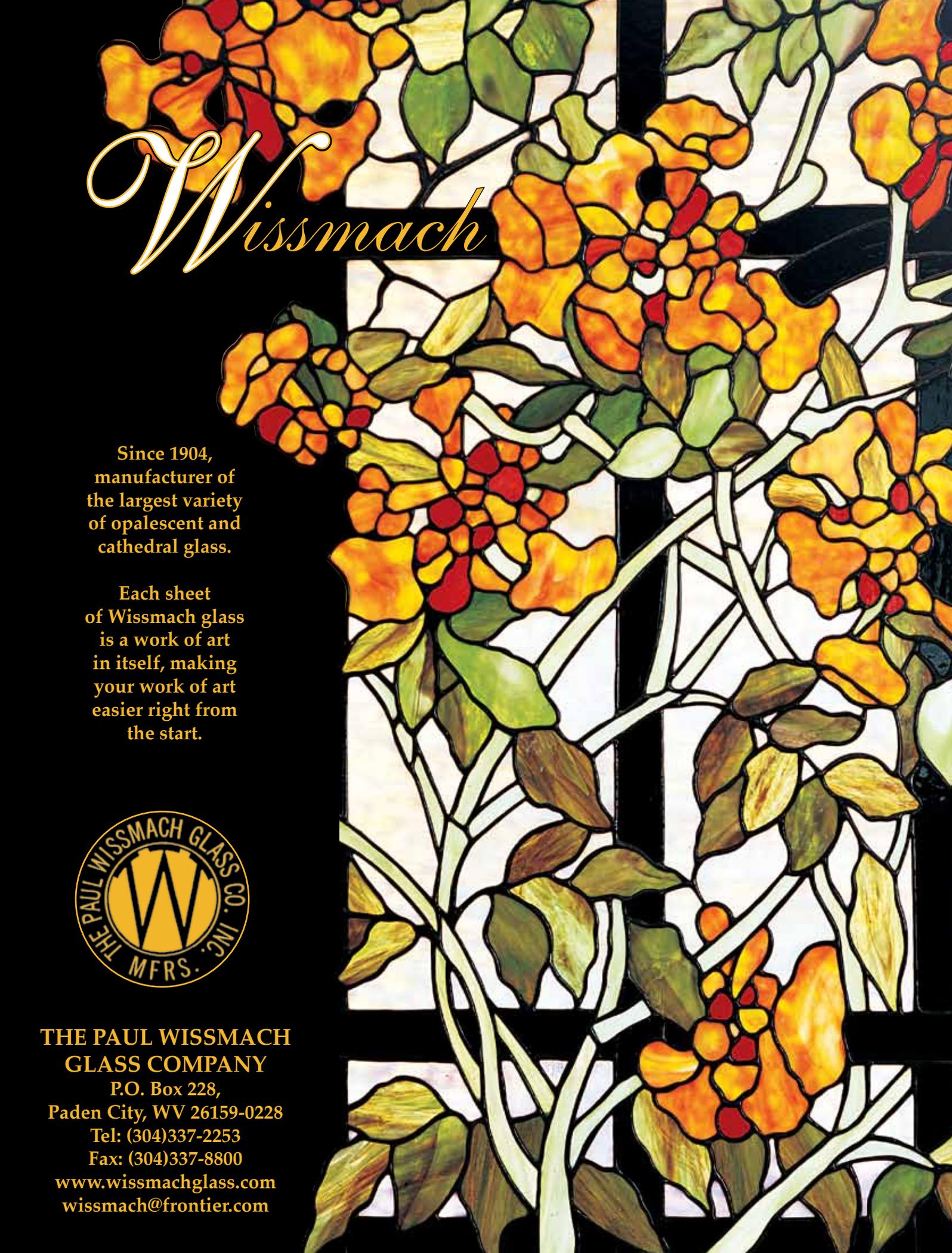
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