

GLASS PATTERNS

— • Q U A R T E R L Y • —

Summer 2018

Volume 34 • No. 2

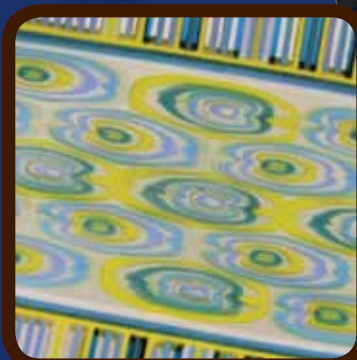
Slice of Summer

Stained Glass

Moonbeam Mermaid
Marble Kaleidoscope
Watermelon Picnic
Flower Basket

Fused Glass

Maltese Cross
Poured Enamels
Sun Lamp
Freeze 'n Fuse
Breezy Kite
Surf's Up
Wissmach Challenge



Volume 34 No. 2

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Lisa Vogt holds one of her kiln formed vessel sinks.

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Publisher ~ Maureen James

Editor ~ Delynn Ellis

Graphic Artists ~ Dave Burnett,

Mark Waterbury

Accounting ~ Rhonda Sewell

Circulation Manager ~ Kathy Gentry

Copy Editor ~ Darlene Welch

Advertising ~ Maureen James

Contributing Designers and Writers

Robin Anderson, Jean Beaulieu

Allison Borgschulte, Margot Clark

Delynn Ellis, Leslie Gibbs

Arnold Howard, Petra Kaiser

Jane McClarren, Stephanie O'Toole

Paned Expressions Studios, Chantal Paré

Alysa Phiel, Komal C. Prasad

Kevin Thornhill, Lisa Vogt

Darlene Welch

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Facsimile 502-222-4527

E-Mail info@glasspatterns.com

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From the Editor

Ready, Set, Summer!

Glass Patterns Quarterly presents the free and easy spirit of the summer. With no major holidays to plan for, the kids out of school, and vacations in full swing, get ready to kick off your shoes, literally. *GPQ* is launching the summer season in style and inviting you to breathe fresh air into your work. Many of the tutorials listed here celebrate the sun on our faces and memories that we want to cherish.

Summer is a great time to create a bucket list, an inventory of goals or events that take commitment to achieve before the list maker "kicks the bucket." While *GPQ* isn't suggesting that "the end" is near, we are encouraging you to make your summer count, in more ways than one. The following is a *Glass Patterns Quarterly* Summer 2018 bucket list with simple suggestions to work our tutorials into your summer.

- Stargaze or work on Leslie Gibbs' Moonbeam *Mermaid*, *Adrift in Sea Dreams*.
- Go on a picnic or, better yet, experiment with Chantal Paré's *Watermelon Picnic*.
- Visit an aquarium, and while you're there, get color ideas for Jean Beaulieu's *Bubble the Fish* pattern.
- Fly a kite or just cook up one in your kiln with Lisa Vogt's *Breezy Kite*.
- Look at the sky through a telescope or make a fun *Marble Kaleidoscope* with Ally B.
- Take surfing lessons or create Alysa Phiel's *Surf's Up* fused surfboard for your favorite enthusiast.
- Create an award winning garden in glass by creating Komal Prasad's *Maltese Cross*, Robin Anderson's *Freeze 'n Fuse Flower Basket*, and Paned Expressions *Sunflowers*.
- Visit a beach or get the same colorful beauty from Kevin Thornhill's *Beach Crowd*.
- Enter the Wissmach/Kaiser-Lee Kiln Forming Challenge.
- Last, but not least, work on your tan or stay indoors and slump Stephanie O'Toole's *Sun Lamp*.

As always, *Glass Patterns Quarterly* wants to help craft your seasons with tutorials, patterns, supply lists, new products, and helpful techniques. We also hope we've earned the right to be a part of your bucket list, whether that includes resolutions or fun projects for the summer season and beyond.

Happy glassing,

Delynn Ellis

Delynn Ellis
Managing Editor



Maltese Cross by Komal Prasad

Upcoming Submission Deadlines

Winter 2018	Wildlife, Winter, and Landscapes
Editorial	August 20, 2018
Ad Closing	October 20, 2018
Ad Materials	October 30, 2018

Spring 2019	Glass in the Garden - Glass Flowers, Planters, Birdbaths, and Garden Art
Editorial	November 1, 2018
Ad Closing	January 20, 2019
Ad Materials	January 30, 2019

Glass Patterns Quarterly

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Above: Watermelon Picnic by Chantal Paré.

On the Cover: Moonbeam Mermaid by Leslie Gibbs. Photo by Jon Gibbs. Details of Breezy Kite by Lisa Vogt, Surf's Up pattern bar surfboard by Alysa Phiel, and Bubble the Fish by Jean Beaulieu. Photo of the surfboard by Jane McClarren.

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

Watermelon Picnic

Design, Fabrication, and Text by Chantal Paré

*"A perfect summer day is when the sun is shining, the breeze is blowing, the birds are singing, and the lawn mower is broken."
—James Dent*



If you are looking for an opportunity to feature some of Wissmach's splendid Cranberry Pink glass, this is it! A bold hot pink is an essential component of the classic tetrad color combination of lime, turquoise, orange, and pink, and the Cranberry Pink is just the ticket. The watermelon slices, a pitcher of orange juice, a striped tablecloth, a blue bouquet, and butterfly in this 13" x 17" design have been artfully arranged in service of this particular color scheme. These cheerful colors are suspended in a combination of clear glass textures including seeded, baroque, rainwater, hammered, and cord.

For some added excitement, the project includes three-dimensional watermelon seeds created with copper wire and solder. Copper wire is a versatile material for decorating a stained glass project with details that might otherwise need to be painted on.

Wissmach Glass Company

01 Clear Seedy for Inside Border, 1/2 Sq. Ft.

X-6 Light Cranberry Pink Ripple
for Watermelon Slices, 1/2 Sq. Ft.

EM6 Cranberry Pink English Muffle
for Watermelon Slices and Flower Centers, 1/2 Sq. Ft.

343 Medium Green Flemish for Watermelon Rind, 1/2 Sq. Ft.

EM342 Dark Copper Blue English Muffle
for Flowers and Butterfly Wings, 1/2 Sq. Ft.

EM190 Medium Copper Blue English Muffle
for Flowers, Butterfly Wings, and Tablecloth Stripes, 1/2 Sq. Ft.

319 Dark Yellow Green Double Rolled
for Leaves and Watermelon Rind, 1/2 Sq. Ft.

Clear Hammered-01 for Flower Vase, Scrap

Spectrum Glass Company

100RW Clear Rainwater® for Outer Border, 1 Sq. Ft.

171A Orange Artique® for Orange Juice
and Flower Center, 1/2 Sq. Ft.

BR/CLEAR Clear Baroque™ for Pitcher, 1/2 Sq. Ft.

100C Clear Cord for Tablecloth Stripes, 1/2 Sq. Ft.

Youghiogeny Opalescent Glass Company

1000 SP Clear Stipple for Pitcher Reflection, Scrap

Tools and Materials

Oil-Filled Carborundum Wheel Glass Cutter

Glass Breaking Pliers Fine-Tipped Black Marker

7/32" and 3/16" Black-Backed Copper Foil

60/40 Solder Soldering Flux Flux Brush

1/2" Zinc U-Came Miter Saw

14-Gauge Copper Wire Masking Tape

Black Patina Flux/Patina Remover

Carpenters Square Rubber Gloves

Acetone Nail Polish Remover

Small Craft Scissors or Fid

*Print one
copy of the
pattern and
number the
pieces.*

1



*Place the
transparent glass
over the pattern and
trace each piece with
a permanent marker.*

2



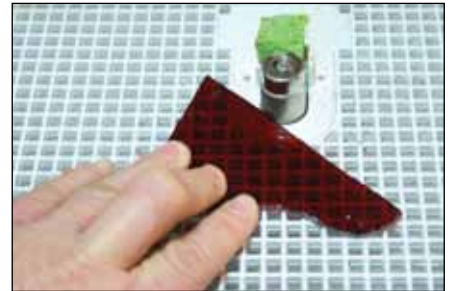
*Using an
oil-filled
carborundum wheel
glass cutter and glass
breaking pliers,
score and break
the glass.*

3



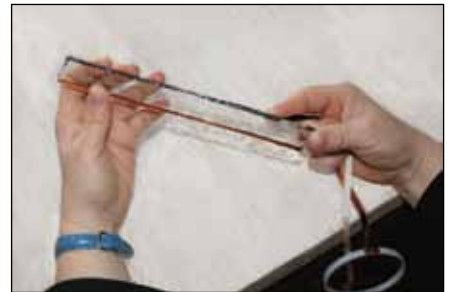
*Grind all of
the glass edges
to smooth the
glass and ensure
proper fit.*

4



*Wrap all of
the glass edges
with black-backed
copper foil.*

5



Carefully crimp the edges of the copper foil over the sides of the glass with small craft scissors or a fid. Choose a width of foil matching the thickness of the glass so that the crimp above and below is under a millimeter.

6

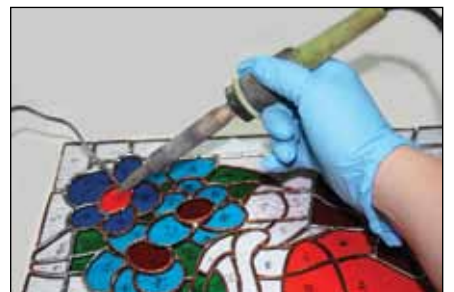
*Make a jig
and place the uncut
pattern and foiled
glass pieces inside.*



Use a carpenters square when building the jig to ensure true right angles.

7

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



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

8
Shape lengths of the copper wire for the watermelon seeds and butterfly antennae.



Cut lengths of copper wire and fold them over. Holding the bottom with pliers, twist to form loops for the watermelon seeds and a V for the butterfly antennae.

9
Finish the seeds and antennae.



Tin the wire all over. Add drops of solder at the tips of the antennae to create a little bulge. For the watermelon seeds, drop solder inside the loops until the solder floods them to the edges.

10
Solder the seeds and antennae to a lead line, according to the pattern.



11
Measure, cut, and install the zinc frame.



Measure the lengths of zinc U-came needed for the four sides of the panel and cut them with a manual or electric miter saw. Install the pieces of zinc on the outside edge of the panel to create a frame.

12

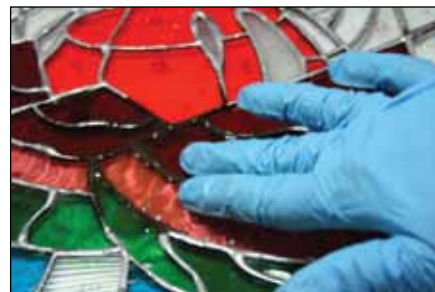
Add the hanging hooks.



Use masking tape as resist to ensure straight solder edges at the corners of the panel. Fold over two 1-1/2" lengths of pretinned copper wire to form the hooks and solder them into the grooves of the uppermost joints in the frame. Tack-solder all of the lead lines that join the frame.

13

Clean and patina the panel.



Clean the panel with soap, pat dry, and apply patina by pouring a bit of the patina solution and spreading it on the lead lines with rubber gloves. Clean the panel with flux and patina neutralizer. Remove any trace of the markers on the glass using a bit of acetone nail polish remover. Now hang your new panel in your window and enjoy this reminder of summer all year long.

GPO

Two decades 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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 C. FMT Flat Top
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 B. RMT-SS Round Top
 C. FMT-SS Flat Top



KEY HOLDERS



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 C. FKH Flat



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TEA SERVER

TTT2 Tea Server Extension Kit
TTT1

Pendant (without chain)



AANP-11

Earrings



AANP-12

Extra Disks



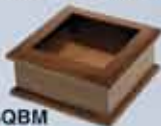
AANP-03
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In Medium Cherry finish
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 SQBS 5.5" Sq., Glass Size 3 1/4"



SQBL



SQBM



SQBS

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 GBRB Ripple Bits
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 GJBL Medium
 GJBL Small
ITEM# .925 SILVER
 GJBS Large
 GJBS Medium
 GJBS Small

Earring Bails



- ITEM# SILVER PLATED**
 SHBL Large
 SHBL Medium
 SHBL Small
ITEM# GOLD PLATED
 GHBL Large
 GHBL Medium
 GHBL Small

Pattern Bails



- ITEM# SILVER PLATED**
 A. SPBL-H Hexagon
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 D. SPBL-T Tortoise
 E. SPBL-W Waves
 SPBL-A Assorted (5 in 1)

New Design Bails



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Marble Kaleidoscopes

Fantastic Views for Your Favorite Marbles

Design, Fabrication, and Text for Kaleidoscope by Allison Borgschulte

Marble by Brett Young and Larry Zengel of Hot House Glass



Along with being an artist, I am also an art collector. One medium in which I collect and for which I have great appreciation is the work of contemporary handmade marble makers. I also find it very beneficial to collaborate with other artists. Those within a particular medium have a tendency toward a certain approach that is natural to the techniques they employ. Collaborating with someone whose focus is on another way of working opens both persons' horizons and allows for innovative crossovers of the mediums. I find it especially rewarding to meet new marble makers who are eager to experience their work in a whole new way through their perspective of my work.

I make kaleidoscopes that utilize marbles as the object viewed through the scope. The marble artists with whom I collaborate trade their marbles with me for my kaleidoscopes. These artists know that I will be designing scopes specifically for their work and will be presenting our joined work anew on behalf of both artists. Many of these artists sell my kaleidoscopes with their marbles at shows and in their galleries. The following tutorial takes you through my creative process of designing and creating a kaleidoscope inspired by a marble made by Brett Young and Larry Zengel of Hot House Glass.

Glass for Fused Version

1/8" - or 3 mm-Thick 96 COE

Opaque and Transparent Colors, 8" x 8"

Stained Glass, 8" x 3/4"

Glass for Nonfused Version

Stained Glass, 8" x 4"

Additional Glass

Clarity Front Surface Mirror, 8" x 4"

Clear Art or Float Glass, approximately 2" x 3"

Glass Lens (optional)

Tools and Materials

Glass Cutting Tool Running Pliers

Breaker/Grozier Pliers Needle Nose Pliers

Flux Fluxing Brush Soldering Iron

60/40 Stained Glass Solder

Protractor Ruler Sharpie® Marker

X-Acto® Knife with #11 Blade

7/32" Black-Backed Copper Foil (for stained glass)

3/8" Copper Foil (for fused glass)

Plastic or Wooden Fid Window Cleaner

Paper Towels White Paper Duct Tape

16-Gauge or Heavier Copper Wire Glass Kiln (optional)

Kiln Wash or Kiln Shelf Paper Dish Detergent

Glass Grinder (optional) Morton System (optional)

1

Select a marble to be the object of your kaleidoscope.



Some degree of transparency is important. The more transparency the marble has, the more light will be allowed into the scope, making the colors vibrant and the design visible. I do not limit myself to entirely transparent marbles, however. Marbles with an opaque core encased in clear glass are great options. Even marbles with a majority of opaque colors and a small layer of clear encasement can work wonderfully.

I look for good contrast in colors. I also look for marbles with air trap designs, because they really sparkle in a kaleidoscope. Marbles with a design sandwiched in between a clear half and a colored half can make very exciting viewing objects as well, since they provide a lot of variety in one marble. It is best if the back half is decorated with a high contrast design.

I've chosen a flamed dichroic rainbow marble by Hot House Glass. It has loads of transparent color, fine lines of sparkly white dichroic, and a swirl design with some raking of the swirl known as flaming. The raking will offer more random pattern changes in the viewed image than a straight swirl design would offer.

2

View the marble in all of the different mirror systems that will be used in the kaleidoscope.



I always check the marble in each different system in order to select one that inspires me and best shows off the attributes of the marble. Observe the marble. This is the most important step in my process. The picture shows 12 kaleidoscopes in which I will observe this marble, each of which contains a different mirror system.



The scopes contain either 2, 3, or 4 mirrors inside the viewing chamber. The inside angle of the mirrors affects the number of reflections seen through the scope. Tapering the mirrors inward creates the illusion that the reflections are wrapping around a sphere like a mirrored ball.

In order to learn about the mirror systems and their configurations inside kaleidoscopes, I started out by borrowing three books from my local library. The most helpful book that I found was, *The Kaleidoscope Book: A Spectrum of Spectacular Scopes to Make* edited by Thom Boswell. The Brewster Kaleidoscope Society (brewstersociety.com) is another great resource.

3

Measure the marble diameter.



You will need the diameter in order to determine the size that you will need to cut your mirrors and the glass for the outside encasement of the scope. This is important so that you do not see a lot of background around the object marble when looking through the scope.

For this tutorial I have chosen to use a modified three-mirror system where the long sides of two of the mirrors are going to create a 20-degree angle. The third mirror will be narrower in size and create 80-degree angles with both of the other two mirrors. This will be demonstrated in steps 9 through 18.

For this particular mirror system, I have determined that the width of the larger two mirrors needs to be $\frac{3}{8}$ " smaller than the diameter of the marble. The fused glass sides of the kaleidoscope will be $\frac{1}{4}$ " wider than the mirror. The length of the scope is not affected by the size of the marble and can be anything you wish. I've decided to make the length 8". The measurement for this kaleidoscope will be:

Marble Diameter = $1\text{-}\frac{9}{16}$ "

2 Mirrors = $1\text{-}\frac{3}{16}$ " x 8"

2 Fused Side Pieces = $1\text{-}\frac{7}{16}$ " x 8"

Fusing the Glass

If you decide to create a kaleidoscope that does not include fused glass, use purchased stained glass and skip this glass fusing portion of the tutorial.

4

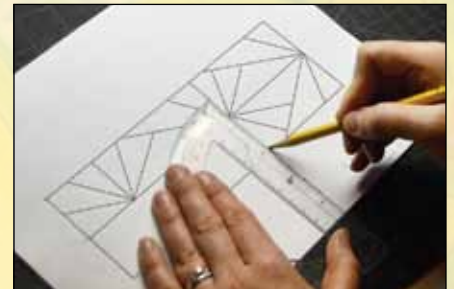
Draw two $1\text{-}\frac{7}{16}$ " x 8" rectangles on a piece of paper.



You will use this as a template for the pattern that you will cut out of the fused glass.

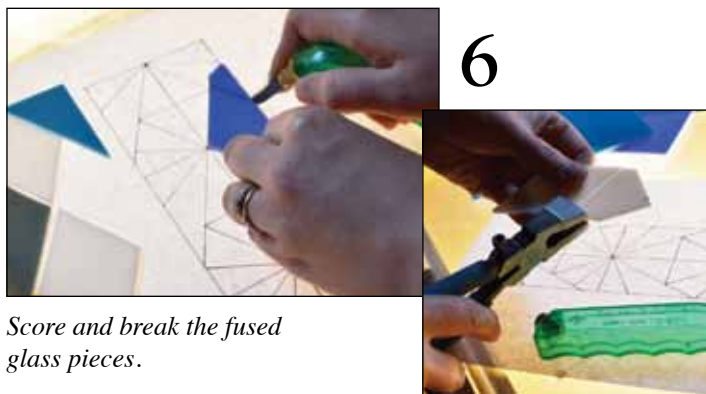
5

Plan out the design.



While observing the marble through the scope, I was drawn to how the color spectrum would change from warm red, orange, and yellow colors to cool greens, blues, and purples as I spun the marble. There would be moments in between when the entire rainbow would be captured for split seconds in a complex array of shapes and lines. Therefore, I am going to create a triangular radiating design with a bottom layer of opaque colors and an overlapping layer of transparent colors.

Each of the transparent colors on the top layer will overlap two or more of the bottom colors to create even more colors of the rainbow. I will transition these colors from red to orange to yellow to green to blue on one side of the scope and from green to blue to purple and back to red on the other side. That will mimic my experience of how I viewed the color changes inside the scope.



Score and break the fused glass pieces.

First, place the glass on top of the pattern. You should be able to see the lines clearly through the glass. If you have trouble seeing the pattern through the glass, use a light box to help you see the lines. You can also cut out the pieces of the pattern and trace the paper shapes with a Sharpie onto the glass.

Press the glass cutting tool against the glass and draw the tool along the surface to score the glass using enough pressure to make a faint sound. You will want to cut from one edge of the glass all the way to the other edge. Do not stop in the middle of the glass, since that will cause the glass to break randomly. Also do not go over your scored lines more than once, since that will ruin the blade of your cutting tool.

Using the running pliers, place the marked line on the center of the tool head over the score line you just created on one of the edges and squeeze. The glass should break along the scored line. If not, use the breakers/grozier pliers to break off the remainder of the glass from the line. Continue until you've cut out all of the pattern pieces and filled the rectangular template two times.



Fuse the glass pieces together.

When you melt the design in a kiln, the resulting piece will be 1/4" thick. Therefore, in order to maintain the same shape and size when your pieces melt, you will need to use two layers of 1/8"-thick fusible glass.

Note: For an optional basic stained glass design, cut two rectangles that are 1-7/16" x 8" from your choice of stained glass. You do not need to double the thickness for stained glass.

8

Place the design on a kiln washed shelf or shelf paper in your kiln and set the firing schedule for a full fuse.



Remember that each kiln fires differently, so you may need to adjust the schedule to fit your own particular kiln.

Full Fuse Schedule

Segment 1: Ramp 250°F/hr to 1000°F and hold 60 min.

Segment 2: Ramp 50°F/hr to 1250°F and hold 20 min.

Segment 3: Ramp 250°F/hr to 1440°F and hold 20 min.

Segment 4: Ramp 9999 (AFAP*) to 960°F and hold 60 min.

Segment 5: Ramp 100°F/hr to 700°F and no hold.

*as fast as possible

Creating the Mirror System



9

Begin to work on the interior mirrors.

While you wait for the glass to fuse in the kiln, or if you are using purchased stained glass, begin working on the mirrors for the interior of the kaleidoscope. Cut two 1-3/16" x 8" rectangles out of the mirror. If you have a Morton Cutting System, this is the ideal time to use it. Otherwise, draw the rectangles on the back of the mirror with a Sharpie marker.

The front of the mirror has a blue film. **Do not remove the film.** It will keep your mirror clean and smudge proof until you are ready to assemble the mirror system and place it inside the kaleidoscope. Cut and break the mirror as you did with the glass.

Note: The mirror thickness is 1/16". Since it is only half as thick as the glass, it requires less pressure to cut.

10

Use an X-Acto blade to slice the film and separate the pieces from each other.





CS-5630 Dimensions

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

Introducing the Paragon CS-5630 clamshell kiln with quartz tubes

Deluxe quartz tubes

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

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

Heat from the top, walls, and floor

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

Extra insulation and woven gasket

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

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

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

Motorized vent for firing molds

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

Low maintenance

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

Rugged

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

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

Optional touch screen controller

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



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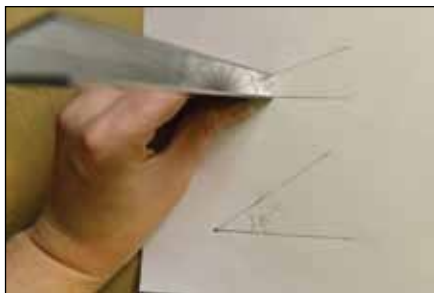
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Be careful not to scratch the front of the mirror surface with the blade. Do not remove the blue film yet.

11

Draw a diagram to help with the placement of the mirror angles.



On a clean piece of white paper, use a protractor to draw a 20-degree angle. In the center of the angle, write 20 degrees. Stand the two pieces of mirror on their narrow ends on the drawn angle touching in the corner. You will be able to see the reflections of your written 20 degrees multiply in the mirror. There should be 18 reflections. If not, adjust the angle until there are 18 perfect reflections.

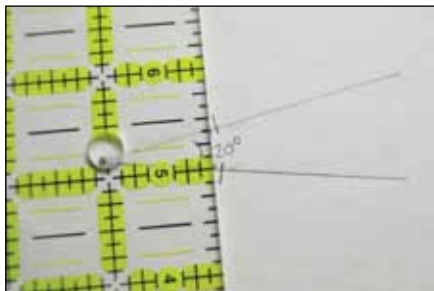
12

Holding the mirrors in place, mark the outside edges of the two mirrors on the paper at the wide end of the angle.



13

Figure the measurements for the third piece of mirror.



Draw a third line to create a triangle on the paper. The line needs to be exactly 1/16" inside the marks that you made for the edges of the mirror. This will tell you the measurement for the width of the third piece of mirror completing the mirror system. Measure the line and cut another piece of mirror using that measurement by 8" in length. My measurements are 3/8" x 8".

Note: Do not rely solely on my measurements for your own piece. The slightest inaccuracy in measurement can result in an imperfect mirror system. By using this method of drawing the angle and checking the reflections, you will have better results.

14

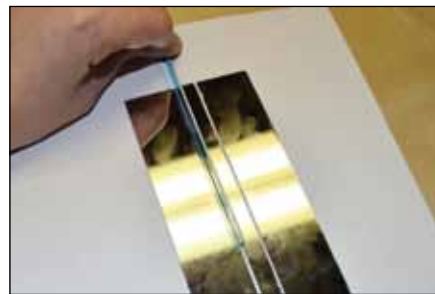
Remove the blue film from the three mirror pieces and place the glass face down on the paper.



Make sure you still have a clean work surface and your paper is clear of dust and debris. Be careful to not touch the front surface of the mirror. Place the smaller piece of mirror in the center.

15

Create gaps between the three pieces of mirror by using a scrap piece of mirror as a guide.



The gap should be just a hair larger than the thickness of the mirror.

16

Cut small pieces of duct tape to tape the mirrors to each other at each end and in the center.



Be sure to maintain the gaps.

17

Carefully lift the mirrors and bring the outer edges together to form the triangle with the front surface of the mirror on the inside.



The duct tape is on the outside.

18

Finish taping the edges together.



Tape the final edge together with small pieces of duct tape. Using larger strips of duct tape, wrap the mirror system to secure it in place. The duct tape holds the mirror system together and will also give you a little cushion between the mirror and the glass encasement when you put the kaleidoscope together. Set the mirror system aside in a safe place where it will not collect any dust.

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Fusing Part Two



19

When the fused pieces are fired and cooled, clean the glass, add any additional design elements you would like, and tack-fuse the pieces.

After the fused glass pieces have finished their first firing, clean them with a little dish detergent and water. Decide if you would like to add any more design elements to the pieces. Here I decided that I would like another layer of transparent colors and texture. I cut some more triangular pieces to lay on top and fired the glass again, this time to a tack fuse using the following schedule. Remember to adjust the schedule to suit your own kiln if needed.

Tack Fuse Schedule

Segment 1: Ramp 250°F/hr to 1000°F and hold 60 min.

Segment 2: Ramp 250°F/hr to 1425°F and hold 20 min.

Segment 3: Ramp 9999 (AFAP*) to 960°F and hold 60 min.

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

Segment 5: Ramp 300°F/hr to 300°F and no hold.

*as fast as possible

Remove the pieces from the kiln, clean them, and inspect your work to determine if you are happy with the results. If you have more design elements you wish to add, do so. You may refire the glass pieces several more times if you wish. As long as you are using a proper firing schedule, there should be no issues with more firings.

Note on compatibility: Glass compatibility can shift during firing, which will result in fractures in your piece. For example, this can happen from raising the temperature too high.

Note on devitrification: A discolored matte finish on your glass is called devitrification. Devitrification can result from unclean glass or from an improper firing schedule where the kiln temperature is held at 1300°F to 1380°F for too long.

Assembling the Kaleidoscope

20

Foil the perimeter of the glass pieces.



Start to remove the paper backing from the 3/8" copper foil, center the end of the tape along the edge of the fused glass pieces, and wrap the tape all around the perimeter. If working with stained glass instead of fused pieces, use the 7/32" copper foil for this step instead.

21

Burnish the foil on the edge of the glass with a plastic or wooden fid.



Use your fingers to wrap the foil around the edge of the glass. There should be approximately the same amount of foil wrapping around the front and the back sides of the glass pieces. Use the fid to burnish the foil and flatten the creases.

22

Tack-solder the pieces together.



Hold the long sides of the fused or stained glass pieces together at a 20-degree angle. You may use your mirror system under the glass pieces as an armature for this step if you are comfortable doing that. Be careful not to dirty the mirror.

Brush a small amount of soldering paste, also known as flux, where the edges meet together at both ends and the center. Tack the glass pieces to each other using your soldering iron and 60/40 solder where you brushed on the flux.

23

Fill in the gap with solder along the entire joint.



Do not worry about smoothing the solder until you have a substantial amount of solder in place. If you linger too long in one place with the soldering iron, you may drip solder down through the joint and interfere with how the mirror fits inside the kaleidoscope.

24

After covering all of the copper foil along the joint, smooth out the solder.



Start at one end, touching and moving the iron along the edge. Allow the solder to melt and flow, giving it a nice flat surface. After you are satisfied with your soldering work, clean off the flux with window cleaner and a paper towel.

25

With the mirror system placed inside the glass walls, measure the width of the bottom.



The resulting width by 8" in length is the measurement that you will use to cut a piece of 3/4" x 8" stained glass for the bottom edge of the kaleidoscope.

26

Add the glass for the bottom of the kaleidoscope.



Cut the glass for the bottom of your kaleidoscope, wrap it in the 7/32" copper foil, and tack-solder it to the edges of the fused pieces with the mirror system inside. Finish soldering the edges.

27

Cut the clear glass for the ends of the scope.



I like to put clear windows on the ends of the kaleidoscope in order to prevent dust from getting inside the scope over time. This could be cut out of broken glass from a picture frame or purchased from your local hardware store. However, you may want to use a lens rather than just clear glass on the end through which you look into the scope. This is useful for image clarity, especially if the kaleidoscope is less than 7" in length. With a focal length of 8", I do not think it is necessary.

Place the scope on end on top of the clear glass and trace around the outside of the scope onto the glass with a Sharpie marker. Turn the piece around and trace another piece for the other end. Cut out the pieces. I recommend cutting the glass 1/8" to 1/4" smaller than the traced line.

28

Wrap copper foil around the edge of your clear window pieces.



I use the 3/8" foil to wrap the window or lens end of the scope through which you look and the 7/32" foil for the end where the marble will be placed.

Note: Be careful not to cut the pieces so small that the foil on the edge of the window can be seen when looking through the scope.

29

Holding the clear glass to the end of the scope, brush a very small amount of flux lightly on the copper foiled edge of the window and the scope.



If you use too much flux, liquid can get inside the kaleidoscope chamber and impact the image. Tack-solder the windows to the ends of the scope.

30

Finish soldering the ends of the scope.

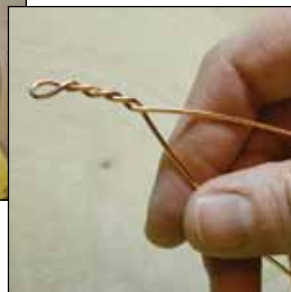


Be very careful to not drip any excess solder inside the chamber of the scope. If possible, I recommend turning the temperature down to low on the soldering iron for this step. After you are finished soldering, clean off the flux with window cleaner and a paper towel.

31



Cut a piece of copper wire 20" in length, fold it in half, and begin twisting the copper from the folded end so that you have a small loop.



32

Twist the wire all the way down to your desired tightness and use pliers to form a spiral with the wire.



33

*Flux and
solder the wire.*



Coat the wire with a generous amount of flux. Run a bead of solder along the edge of the wire with the soldering iron in order to coat the wire with the silver colored solder. I use scrap wood for a work surface for this step, since the wire will get very hot and will leave burn marks on the work surface.

34

*After the
wire has cooled,
hold it to the end
of the kaleidoscope
and solder the wire
in place.*



I attach the wire to the bottom side and the top point of the triangular window. Clean off the flux with window cleaner and paper towels.



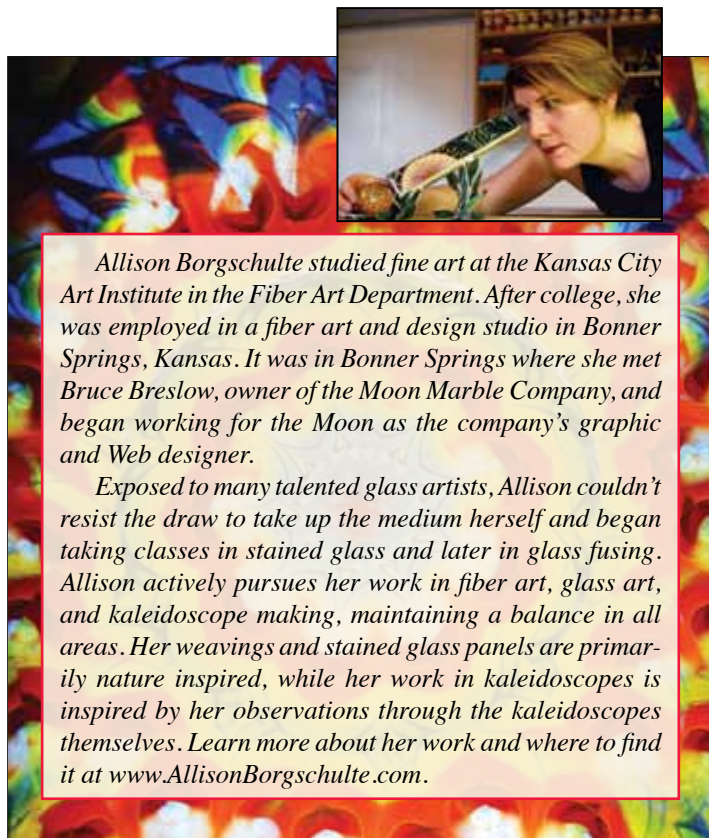
35

*Insert the
marble through
the side of the
spiral.*



Adjust the wire until it feels as if the marble is being held securely but not so tightly that it grinds against the glass. To view the piece, gently spin the marble with one finger inside the wire. Enjoy!

GPQ



Allison Borgschulte studied fine art at the Kansas City Art Institute in the Fiber Art Department. After college, she was employed in a fiber art and design studio in Bonner Springs, Kansas. It was in Bonner Springs where she met Bruce Breslow, owner of the Moon Marble Company, and began working for the Moon as the company's graphic and Web designer.

Exposed to many talented glass artists, Allison couldn't resist the draw to take up the medium herself and began taking classes in stained glass and later in glass fusing. Allison actively pursues her work in fiber art, glass art, and kaleidoscope making, maintaining a balance in all areas. Her weavings and stained glass panels are primarily nature inspired, while her work in kaleidoscopes is inspired by her observations through the kaleidoscopes themselves. Learn more about her work and where to find it at www.AllisonBorgschulte.com.



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Sunflower Introductions

Design by Paned Expressions Studios, Text by Darlene Welch



It's hard to make it through the summer without coming across a field of sunflowers, most likely named for their appearance and the fact that their large heads are constantly turning toward the sun. They originated in the Americas and have been cultivated as a valuable source of food for humans, cattle, and poultry for centuries. Their tall stalks and seed-filled blooms are also transformed into the local diner by wildlife galore including squirrels, chipmunks, garden mice, and even raccoons, plus loads of birds.

Paned Expressions Studios has captured the sunflower's charm in this 47" x 32" stained glass panel from their CD pattern collection, *In Full Bloom II*. The CD contains nearly 80 patterns for panels, windows, transoms, sidelights, and larger projects. The collection features a wide variety of floral designs including asters, roses, daisies, tulips, and more. This CD contains image only files with no software included. All of the patterns are provided in color plus black and white in JPG, TIF, and GlassEye formats for both PC and Mac for easy resizing, reshaping, and recoloring. All levels of expertise are accommodated. Visit www.panedexpressions.com for more information on this and many other outstanding pattern CDs from Paned Expressions Studios.

GPO

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- 1-D Yellow Silver/Dense Opal/Crystal for Flower Petals, 2 Sq. Ft.
- 145-SP Dark Amber/Opal/Crystal for Flower Petals, 3 Sq. Ft.
- 199-LL Medium Amber/Dark Amber Brown Streaky for Flower Centers, 1 Sq. Ft.
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- WO-112 Dark Green/Dark Amber/Opal Wispy for Leaves and Stems, 4 Sq. Ft.
- 23-L Light Green/Light Opal/Copper Red for Leaves and Stems, 4 Sq. Ft.
- 188-L Gray Blue/White Light Opal for Sky, 12 Sq. Ft.

Tools and Materials

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

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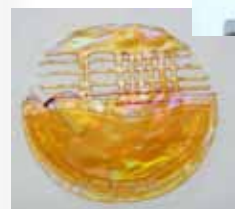
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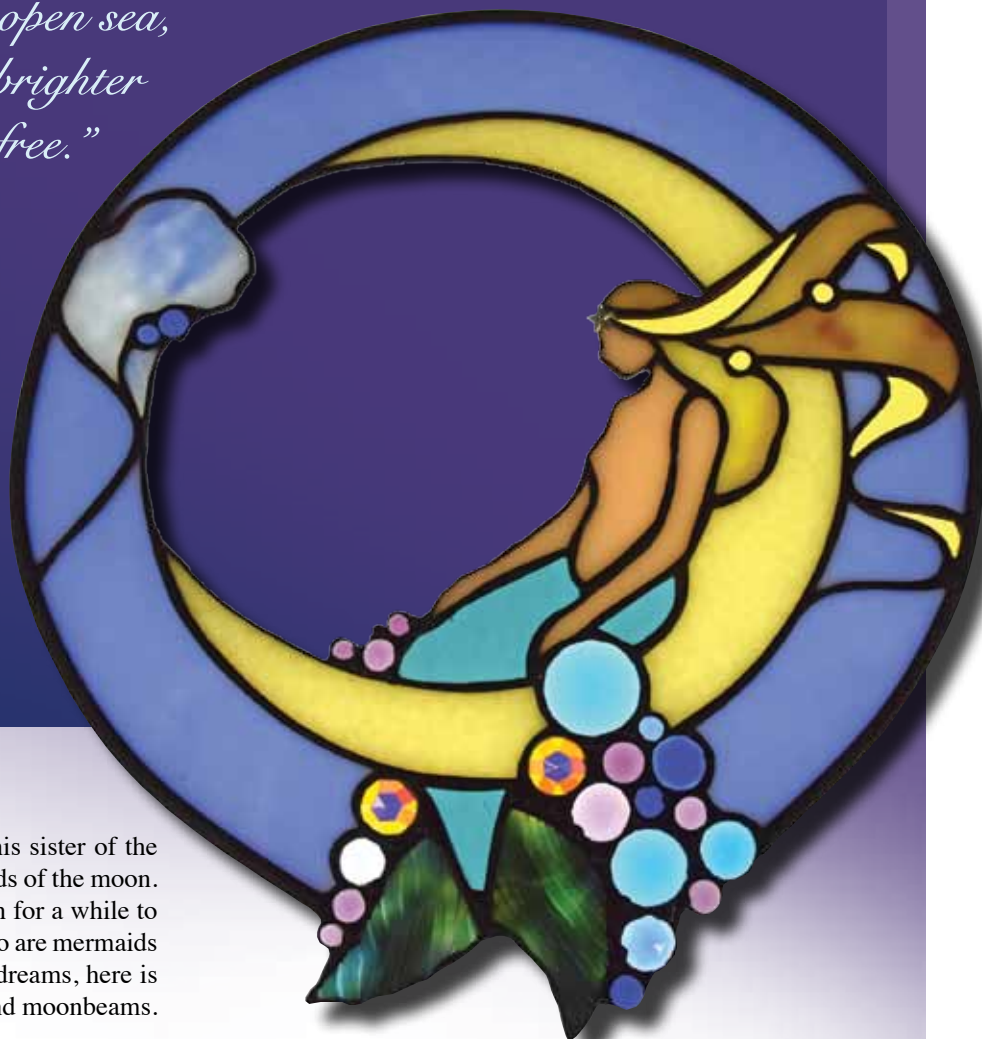
Moonbeam Mermaid

Adrift in Sea Dreams

Design, Fabrication, and Text by Leslie Gibbs

Photography by Jon Gibbs

*"My home is in the open sea,
Where stars shine brighter
And my soul is free."*



The lure of the moon was irresistible to this sister of the tide . . . tides controlled by the many moods of the moon. So she left her deep waters and moonlit beach for a while to let the night sky take charge. For all of you who are mermaids at heart or have a friend who is adrift in sea dreams, here is a pattern designed to provide sweet dreams and moonbeams.

Bullseye Glass Co.

- 000108-0030 Powder Blue Opalescent for Border, 10" x 8"
- 002304-0000 White Lavender Blue Opalescent for Wave, 3" x 3"
- 000137-0030 French Vanilla Opalescent for Moon, 5" x 6"
- 2137-0030 Amber/White Opalescent for Hair, 4" x 4"
- 001137-0031 Medium Amber Iridescent for Hair, 2" x 3"
- 001444-0030 Sea Blue for Lower Body, 3" x 4"
- 000138-0030 Marzipan Opalescent for Flesh, 4" x 5"

Uroboros Glass

- 50-15 Emerald Green Chartreuse/Turquoise Ripple for Mermaid Tail, 4" x 4"

Additional Glass

Assorted Faceted and Cabochon Gems and Jewels

Tools and Materials

- 1/4" and 1" Grinding Bits
- 5/32" Silver-Backed Copper Foil
- Kem-O-Pro Polishing Wax
- Soft Cleaning and Polishing Cloths
- Old Towel Cotton Swabs
- Bostik Blu-Tack Reusable Adhesive
- U-Channel Lead Came Horseshoe Nails
- Black Patina Wire Hanging Hooks
- Flux Remover Alcohol Wipes
- 60/40 Solder 10" Circle Template
- Steel Pushpins 20-Gauge Wire
- Old Toothbrush Black Waterproof Marker
- Scissors X-Acto® Knife

Make two copies of the pattern, one for layout and one to use as a cutting guide.



Do not cut the pattern sections until you have adjusted the pattern for your selection of gems.

Select the gems you would like to use for the design.



The pattern will need to be adjusted to accommodate the gems you decide to use. You can find various sizes of gems and jewels at your stained glass retailer, or often you can find some real "gems" in broken costume jewelry.

Trace the shapes of the gems onto the pattern.



Once you have selected the gems, lay them out on the pattern and draw around the gems to adjust them to the pattern sections. I find it helpful to photograph the selection with my phone so I can remember what goes where. You can also simply number the backs of the gems and their places on the pattern with black marker.

Now that the pattern has been adjusted, cut the glass sections following the pattern.



I used two colors of amber for the hair and alternated their placement.

Grind each section of glass, using the smaller bit for the facial detail.



It is not necessary to grind the gems. However, they can be ground if you feel you need to make some of them smaller. Clean each piece of glass after it is ground.

Wrap each glass section and gem in silver-backed copper foil.



Use alcohol wipes to clean the gems before foiling. Since the edges of the gems are so narrow, I usually trim the copper foil with scissors or an X-Acto knife to make it easier to wrap the foil around the gems.

Use a 10" circular template to lay out the foiled glass pieces to prepare for soldering the panel.



The template keeps everything in place, except for the bottom part of the mermaid's tail and some of the lower gems, but you can add them later. You can also secure the glass sections in place using steel pushpins.

Hold the gems in place with reusable adhesive.



When adding the gems, place a small dot of reusable adhesive such as Blu-Tack on the back of the gems to secure them in place. The adhesive will also help to elevate the gems to the same level as the glass sections so they don't appear to sink below the surface of the design.

9

Apply flux to the panel and solder the design lines, front and back.



You can use decorative solder techniques to enhance the appearance of the gems if desired. Solder the front side of the panel, remove the braces, then add the lower jewels and the mermaid's tail.

After the front of the panel is soldered, place it face down on a towel or other padding to prevent wobbling from the gems and solder the back of the panel. Remove the flux from both sides with flux remover.

10

Wrap the U-channel lead around the panel, beginning and ending with the tail of the mermaid and bottom gems.



Secure the lead in place with horseshoe nails as you wrap the lead. Flux and solder the lead at each point where it touches a line of soldered copper foil, remove the horseshoe nails, and repeat on the other side. Clean off the flux with flux remover.

11

Install hooks for hanging the panel.



Place the panel face down on a soft surface and use the 20-gauge wire to make two hanging hooks. Solder the hooks securely to an inside solder line, such as the top of the wave on one side and the hair on the other. Don't solder the hooks to the outside lead, since the lead will stretch over time if you do that.

12

Apply black patina to all of the solder lines and the lead on both sides of the panel.



Cotton swabs make it easier to access the areas around the gems. Clean off any excess patina and let the panel dry a bit before waxing.

13

Wax and polish the panel.



Using a soft cloth, apply wax to the front of the panel, letting the wax dry before turning the panel over and applying wax to the back. When the wax has dried to a haze, use another soft, clean cloth to polish the panel. An old toothbrush makes it easier to clean up the wax from tight areas such as the hair and around the gems.

Now take the time to "shell-e-brate" your moonlit mermaid by remembering these words of mermaid wisdom. Avoid pier pressure, don't get tide down, come out of your shell, and seas the day . . . every day!

GPO



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

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

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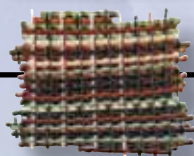
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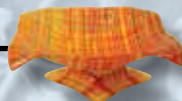
New



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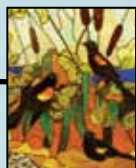
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August 2



Dennis Brady
Screen Melt
August 14



Dale Keating
Fused Glass Lilies
August 23



Denny Berkery
The Copper Foil Method
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Flower Basket Panel

An Introduction to Freeze 'n Fuse

Design, Fabrication, and Text by Robin Anderson

A flower basket is one of the most delightful signs of summer, and here's one you can enjoy year round using a combination of stained and fused glass techniques. We begin by creating a simple stained glass panel of a hanging basket with foliage. This will be the background onto which we cold-fuse—read glue—a colorful selection of flowers made with some innovations on the Freeze 'n Fuse technique.

Bullseye Glass Co.

2109 Woodland Brown for Tree Limb, 1/2 Sq. Ft.

Additional Sheet Glass

Sky Blue/White Wispy for Sky, 3 Sq. Ft.

Sky Blue Cathedral for Border, 1-1/2 Sq. Ft.

Various Shades of Compatible Green
for Basket Foliage, Scrap

90 or 96 COE Glass Powders

Opal and/or Transparent Colors in the Same COE

Tools and Materials

Glass Cutter Soldering Iron

Breaking and Grozing Pliers

Hakko Tip Cleaner or Wet Sponge

Sharpie Markers Pencils

X-Acto® Knife Scissors Grinder

Glass Ring Saw (optional)

Pushpins Gel Flux and Flux Brush

60/40 Solder 3/8" Zinc U-Came

Handi Hangers™ 7/32" Copper Foil

Liva Pro Polishing Wax Steel Wool

Chain for Hanging Decorative Chain

3" Piece of Wire Black Patina (optional)

Rags or Paper Towels

Powder Vibe or Powder Pro 3 with Extra Tips

Flexible Molds Face Mask or Respirator

Small Funnel and Teaspoon Water

Morton System (Optional)

Fine Paintbrush and/or Rubber Brush

Freezer Shelf Space Breathing Protection



The Panel

The panel is straightforward with nice big pieces and easy cuts. It's also a great place to use up some green scrap for the foliage.

1

Prepare the pattern.



Print off two copies of the pattern, one for laying out the project on your work board and one for cutting the pattern pieces. Number the pieces identically on each copy and cut one of the copies into individual pieces.

Now for the fun part—selecting the glass! For my sample, most of the glass for the foliage came from the scrap drawer. Use at least three or four shades of green to give the appearance of different types of plants, but remember that not a lot may show between the flowers in the final piece. I chose a blue border to match the background sky, but there are many other options.

2

Lay the pattern pieces on the glass, trace around them, cut out the glass pieces, and label each one.



Place the full pattern on your work board and put a jig around all four sides to prevent the panel from creeping in size as it is built. The Morton System makes a good jig, but you can also use pieces of quarter-round wood trim drilled with small nail holes.



Grind each piece and fit it into its space on the full work board pattern.

3



4

Foil each piece and fit it back into the panel.



At this point you may need to do a bit of additional grinding before foiling some of the glass pieces. Ideally, you want no gaps in the lead lines, but you also don't want pieces to fit too tightly or they may crack. A 7/32" copper foil tape usually works well, but if you have very thin or thick glass, you may need a 3/16" or 1/4" tape. Try to center the foil on the edge of each piece.

A note here: If you have enough flowers so that you will essentially be covering up the entire basket when you're done, you could certainly opt to just cut one piece of green for all the foliage and be done with it. No need to bother with all the different pieces. If you don't have a lot of flowers, however, you may want to have the smaller pieces.

Flux and flat-solder the front of the panel, but don't add a finishing bead of solder. You'll want a flat surface for gluing on the flowers and leaves. If any solder lines show afterwards, you can add a bead then. Turn the panel over and flat-solder and bead-solder the reverse. Clean and dry the panel.

If you plan to patina, you can do the back of the panel now, but wait to do the front until after all the flowers are in place. That way you can add any necessary bead soldering first. If you do apply patina, clean and dry the panel again.

5

For the frame, measure and cut 3/8" zinc U-came for the sides, top, and bottom of the panel.



Measure, cut, and fit the zinc came onto the panel edges, making sure to completely insert the glass into the U-came channel. Install the top horizontal came piece so that the tops of the vertical came pieces are open for adding the hangers next.

Use pushpins to hold the U-came in position while you solder it. Rub the U-came with steel wool before applying the flux, then solder the corners and every joint where the lead lines join the U-came. Repeat on the reverse side.

Now it's time to attach the Handi Hangers. Use a flux brush to get some flux into the zinc channel. Burnish the Handi Hangers with fine steel wool to remove any tarnish, then flux and tin each shaft with a bit of solder. Insert the shaft in the channel and drop in a good size drop of solder, enough to hold the hanger in place. Repeat for the opposite corner.

Attach a length of chain for hanging, then clean and dry the panel. Finally, use a high-quality polish such as Liva Pro to finish the panel. Apply sparingly with a soft cloth, let dry to a haze, and buff to a high gloss.

Now it's time to start making the flowers and leaves, if you haven't already. Making the Freeze 'n Fuse castings is time consuming, so you may want to start a "stash" well in advance. You can also always add more flowers and leaves later.

Flowers and Leaves

Freeze 'n Fuse, originally developed by Paul Kimball around 2005, is a technique for making castings from dampened powdered glass. If you'd like to learn more about it, there are a number of tutorials and YouTube videos describing the technique.



Molds, powder, tools, and the always essential respirator mask

The basic method involves packing damp glass powder into a mold and freezing it. The glass is then removed from the mold and immediately fused before it can thaw so that the shape fuses before it can crumble.

Part of the fun of this method is the ability to use an enormous variety of molds—such as candy, butter, and soap molds—that can't be used in a kiln. You can also make your own silicone or latex molds. The only rule is that the molds must be flexible, since you must twist and bend them to remove the frozen casting. I prefer pink silicone candy molds and flat tray molds that have 8 to 10 molds per tray. The mold cavity should be at least 1/2" deep but no more than 1-1/2" deep. Be sure to rinse them in cool water after each use to remove any powder residue and allow them to dry.

This project uses the basic concept with some important changes. The most significant change is that we won't be working with dampened powder, but rather with powder that remains dry until the very end of the molding process just before freezing. This enables you to use several colors in the same piece, such as one color for a flower's center, another for the petals, and a third for the petal tips.



Using a powder vibe to fill molds with dry glass powder

The other key change is the use of a Powder Vibe. This is a brass tube that includes a hollow cylinder with a hole in the tip that can be filled with powder plus a base that holds two AAA batteries. There is a new product on the market similar to the Powder Vibe call the Powder Pro 3, which works on the same principle. Hold the Vibe as you would hold a pencil, pressing a flat trigger that causes the cylinder to vibrate. This allows the powder to flow out of the hole. It takes a bit of practice to master the Powder Vibe, but once you get the hang of it, you can use it to create amazing and intricate glass powder work. Note that this method uses powder only, not frit, because frit doesn't suspend in water.

Powders selected before beginning the project



Finally, let's consider the powders. Your color palette can be whatever you wish as long as the powders are compatible. Opal, opalescent, and transparent powders will all work equally well. You can dilute a transparent color by adding clear powder or an opal color by adding white. If you mix colors to create your own custom color, be sure to keep detailed records so that you can duplicate the mix.

For this panel, I recommend opal powders. The flowers will be set against opal glass, and very little light will come through them, so opal colors will "pop" the best.

One last reminder: **For this type of work, you must have a good mask or respirator.** Always wear a mask and eye protection whenever you're working with powders and for some time afterwards if you're going to be in your work area, since particles remain airborne for quite a while. You are working with powdered glass, which you do not want in your lungs or eyes.

Filling the Molds

Now it's time to let your creativity flow! The basic rule in filling molds is that you're working vertically, in layers, and "upside down." The first layer of powder is the most important, because it will be the top layer of the finished piece when it is removed from the mold. Since we're working with flowers, let's start with the center, which is often some shade of yellow.

6

Using the Powder Vibe, begin to fill the molds.



Load the Powder Vibe with yellow glass powder, place the hole directly over the center of the flower cavity, and gently squeeze the trigger. As the Vibe begins to vibrate and powder flows out, fill the center area as full as you can without letting any grains of powder fall outside the desired area.

As you are using the Vibe you may find yourself saying, "Wait! I hold the trigger down and it vibrates, but nothing comes out!" This is a common problem with the Vibe. Powder grains can clump together at the hole. To help with this problem, hold the Vibe vertically and gently tap the base on your work board to unclog the hold. If that doesn't work, use a pin to poke the hole open.

7

If grains of glass powder spill over, use a paintbrush to brush them into the center or out of the mold.



You must be sure to pack every spot, or you'll get an air bubble. Once you've pushed the powder down, keep adding powder with the Vibe until you can't add more without it sliding off the center area.

Use the butt end of the brush or a similar blunt item to gently but firmly push the powder into every nook and cranny of the mold. That way, you stand a better chance of getting the powder into all the crevices of the top layer.

Now let's do the tips of the petals in, let's say, a nice purple. Empty the Vibe barrel back into the yellow powder jar, tap the empty barrel to remove any residue, and fill with purple powder. Place the hole over the tip of a petal and press the trigger to lay down some powder. Be sure to release the trigger before moving to the next petal, or you'll have a line of purple between tips. You won't be able to lay down much color at this stage, but don't worry about that. Use the paintbrush end to tamp down the powder tightly, and add more as needed.

You may be saying, "Argh! I got purple where I didn't want it! How do I get rid of it?" If the powder is directly on the mold surface, pick it up with a damp paintbrush. If it is on top of another color, there isn't much you can do. Sprinkle more of the "correct" color on top and it shouldn't show much, since it isn't the top layer.

Now empty out the purple powder and fill your Vibe barrel with pink powder for the petals. Fill the entire area between the yellow center and the purple tips with pink. Try not to let the pink fall into the yellow and purple areas, but if a little falls in, just leave it and cover it with the correct color. Mother Nature isn't perfect either!

8

Before adding a second layer of powder, be sure to flatten and gently tamp down the first layer.



Press your thumb or first finger gently but firmly straight into the mold. Don't rub or try to move the powder around. Just press hard and release to push that powder into any empty spaces. When working over an area with detailed crevices, use the butt end of the paintbrush to push the powder down, then add more with the Vibe to bring it level with the rest of the powder. Now your all-important, most visible layer is in place! It's now time for the second layer.

9

Fill the Vibe with yellow and fill the center, mounded as high as you can without spilling over onto the pink.



Do the same with the purple tips and then for the pink petals. Repeat this layering until you have either filled the entire cavity or have at least 1/2" to 5/8" of powder laid down. Then tamp down the powder well with a finger.

10

Use multiple Vibe barrels to make it easier to change powder colors.



Emptying and filling the Vibe barrel is a pain. That's why I recommend having two or three barrels on hand. Then you can go back and forth between colors without having to empty and reload every time.

Because you are using dry powder and the Vibe, your powder will be highly aerated, and you are going to have air holes that must be filled. First, gently tap the sides of the mold all the way around to settle the powder, then add more powder as needed to bring the mold to the desired height. Now tamp it all down firmly with your finger, thumb, or a blunt tool.

Don't rub. Just keep pushing firmly and lifting the finger or tool, working your way around the cavity until you have compressed all the powder. Add more powder as needed. If you are doing a tray-type mold, tamp and fill all of the cavities before moving on to the next step. Now the hardest part is done!

Adding and Subtracting Water

You can use tap water to dampen the powder, but if your water is hard or has a high mineral content, distilled water is preferable.

11

Using a teaspoon, add water slowly and carefully to the powder in the mold.



Add enough so that there is a skim of water across the top of the cavity and all the powder is thoroughly wet. If you are using a tray mold, add water to all the cavities.

12

Tap all of the air bubbles out of the powder.



Here's the tough part. Air bubbles are inevitable, and you must get absolutely every one of them out of the mold. Otherwise, they will ruin your casting. First, use a spoon handle to gently tap the mold, working all the way around it.

As the water begins to vibrate, you'll see air bubbles rising to the surface. Pop any that don't break on their own. Keep tapping until you don't see anything remotely like a bubble trying to rise. If you have a clear plastic mold—one reason I like these—hold it up and look at the mold from underneath. You're likely to see bubbles that haven't risen. When you find one, carefully poke a needle or similar tool straight down into the bubble to release the air. If that doesn't work, push down firmly but gently with the butt end of the paintbrush until powder is pushed into the remaining holes.

Once all the air bubbles are released, blot up as much water as you can. Take a paper towel, fold it, and lay it across the mold. Press firmly with your thumb and first finger, again without rubbing, to blot up the water. Use fresh towels as needed to press and blot. As you do this, you may find that the volume of powder is getting too low, so you'll need to add more with the Vibe. Then add more water and blot again.

Keep in mind that your casting is going to lose about 1/3 or more of its volume in the firing due to all of the air spaces in the powder. That means if you want a 1/2"-thick flower, your mold needs to be about 3/4" full. That is why very thin molds, 1/8" thick or so, do not work well here, because they do not hold enough powder for a successful fuse.

Freezing the Molds

It's time to move the mold to your freezer. Be sure it sits level so that nothing slips or slides. A mold needs at least 20 to 30 minutes to freeze thoroughly and can easily sit overnight or even a day or two if necessary. If you plan to leave your mold in the freezer longer than overnight, slide it into a plastic ziplock bag to keep the surface from drying out.

Decanting the Molds

Timing is critical here! Do not remove a molded piece until you are ready to fire it. Your piece will begin to thaw as soon as it is removed from the freezer and will become unstable. Once you've placed it in the kiln, you cannot move it again, since it will fall apart. It's best to plan where you'll put all of your pieces before you even open the freezer door.

13

Release the frozen glass powder pieces from the molds.



Take the molds, one by one, out of the freezer to the kiln. Turn the mold upside down just above the kiln shelf and begin flexing the mold, twisting gently, pulling the sides away from the molded piece. Work all the way around the piece, then press the center out. You'll probably see one area release before another. Be sure that you are holding it as closely as possible to the shelf so that it won't have far to drop, or it will break.

If you are working with a tray mold, some pieces may release before others. If you are very careful, you may be able to use a tool to move pieces to different locations, but expect to see a trail of powder left behind.

There's a fair chance that you'll now see more air bubbles frozen into the top of the piece. Is it a loss? Not necessarily. At least it's worth a try. If you have a steady hand, you may be able to repair it.

For a big hole, take a fine-tipped paintbrush and get it dripping wet. Carefully drop the water into the hole, then "paint" the edges of the bubble until they soften and cave in a bit. Then take your Vibe and carefully add some dry powder to the depression, enough to fill it and a bit extra. Finally, add a tiny drop of water to wet the powder.

For small holes, add a drop or two of water with the brush. Don't let the brush touch the piece. The water will generally soften and remove a small hole. Such holes usually don't need to be filled.

Firing

14

Fuse the collection of flowers and leaves.



The firing schedule below is for 96 COE in my Jen-Ken Bonnie Glo kiln. You may need to make adjustments for your own kiln.

Firing Schedule

Segment 1: Ramp 200°F/hr to 400°F and hold 30 min.
Segment 2: Ramp 400°F/hr to 1320°F and hold 35 min.
Segment 3: Ramp 9999 (AFAP*) to 950°F and hold 60 min.
Segment 4: Ramp 200°F/hr to 700°F and hold 1 min.
Segment 5: Ramp 400°F/hr to 120°F and off.

*as fast as possible

Finishing the Panel

You now have a lovely background panel and a riot of blooms in all colors, sizes, and shapes, so it's time to bring it all together. Let creativity reign!

It's time to "cold-fuse"—that is, glue—the flowers to the panel. I recommend E-6000 glue. It needs to dry overnight for a super hold, but it never lets go.

15

Begin to assemble the panel.



Be sure that the panel is clean and dry. Again, don't put a bead of solder on the lead lines, since you need flat surfaces on which to apply the flowers. You can always add bead solder later.

Bring all of the flowers and leaves to the panel and start arranging them. Try different groupings and color combinations. Let some spill over the sides, hang down, or even climb the chain. If you don't have enough flowers, you can always mold more!

16

Glue the flowers onto the panel.



Once you've decided on the placement of the flowers, take a photo for reference. Use a toothpick to apply a couple of spots of glue to each flower or leaf and set it firmly in place. You may want to do the gluing in a couple of sessions, letting one layer of flowers dry before adding more. The glue will set within 20 minutes.

Measure three lengths of decorative chain to make the hanging chain of the basket, and glue them to the lead lines. Cut a piece of wire and shape it to match the hanging hook that goes over the tree limb, then solder it to the lead line. If you can, bend a tiny eyelet into the bottom of the hook and run the ends of the chain through it for added realism.

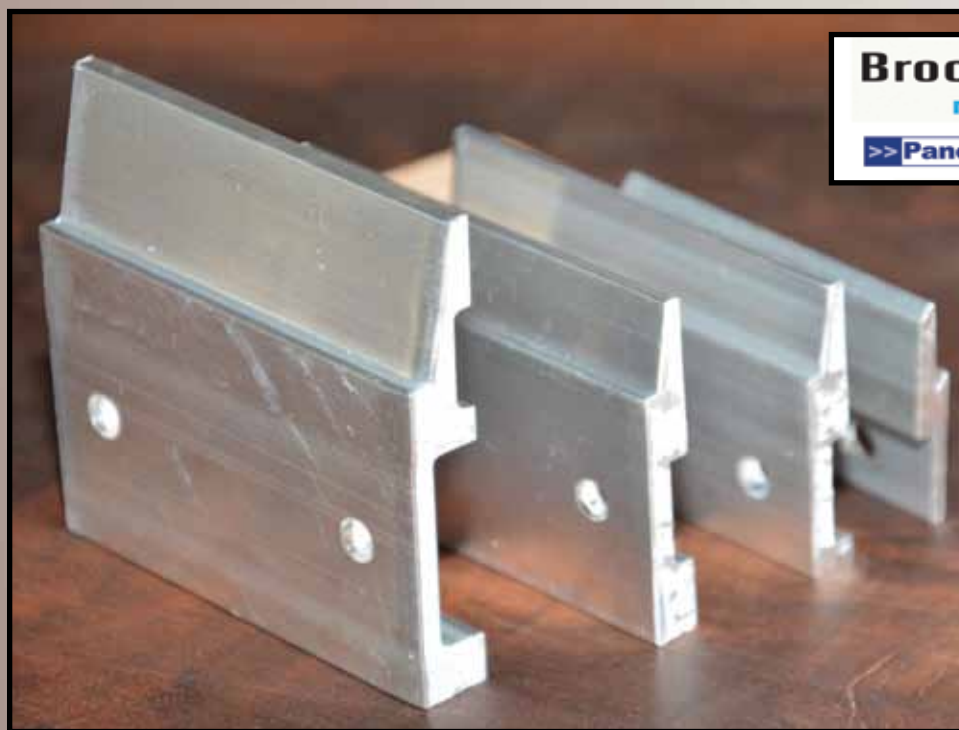
Let the panel dry overnight. Remove any excess glue with an X-Acto knife. Add a bead of solder if necessary, and patina if you so choose. Carefully clean and dry the piece. To finish, polish the front of the panel, being careful to not get any polish in and around the flowers where you will never get it all out. You now have a glorious hanging basket of summer flowers that will never wilt! Happy glassing !

GPQ

Robin Anderson got hooked on stained glass back in the early 1990s and opened her Sunny Brook Studio in 2000. Since then, she has become best known for her highly realistic pet designs, most of them done as memorial pieces for beloved companions who have passed. In 2013, she also turned her attention to making her designs available to other artists through her pattern books, Best in Show, Best in Show – Puppy Class, It's a Cat's Life, and the latest, Whimsical Critters, all available from her Web page, www.sunnybrookstudio.com, Amazon, or your local stained glass retailer. Robin now devotes her full time to her pet portraits, stained and fused glass trophies for dog shows, and her own fused glass art. She loves to hear from other glass lovers at rlandersn@suddenlink.net or on her Sunny Brook Studio Facebook page.



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Beach Crowd

Design by Kevin Thornhill, Text by Delynn Ellis

Have fun with this colorful 18" x 24" stained glass panel from Kevin Thornhill. A multitude of umbrellas staked in the sand along the ocean side make us wonder what the day holds for these festive beach goers.

Nostalgic memories of summers gone by provide favorite design themes for glass artists. GPQ has selected some vibrant Wissmach glass suggestions for you, but you may have some colors of your own to experiment with in fashioning the crowded umbrellas. Shown here in copper foil fabrication, you could also use this pattern for a mosaic panel or as a guide for a fused composition.

Kevin Thornhill is a retired stained glass artist and former creator of the patterns for Focal Point Glassworks. He now enjoys making jewelry when the mood hits him, creating sterling silver pendants, earrings, and rings in St. Petersburg, Florida.

GPQ



Wissmach Glass Company

315-D Medium Amber/Dense Opal for Sand and Outer Border, 2 Sq. Ft.

WO-503 Opal/Dark Gray/Brown Wisspy for Thin Border, 1 Sq. Ft.

188-L Cobalt Blue/Light Opal/Crystal for Sky, 2 Sq. Ft.

277-L Medium Blue Light Opal/Dark Blue for Water, 1-1/2 Sq. Ft.

78-D Medium Amber/Green/Dense Opal/Crystal for Mountains, Scrap

51DDXXMSP Light Opal/Crystal for Clouds, 2 Sq. Ft.

Umbrellas

101-LL Dark Green/Opal Crystal, 2 Sq. Ft.

Remaining Colors Cut from Scrap

1-L Silver Yellow/Opal/Crystal Streaky

WO-2 Yellow/Opal/Crystal

118-LL Cobalt Blue/Opal/Crystal Streaky

118-D Cobalt Blue/Dense Opal/Crystal

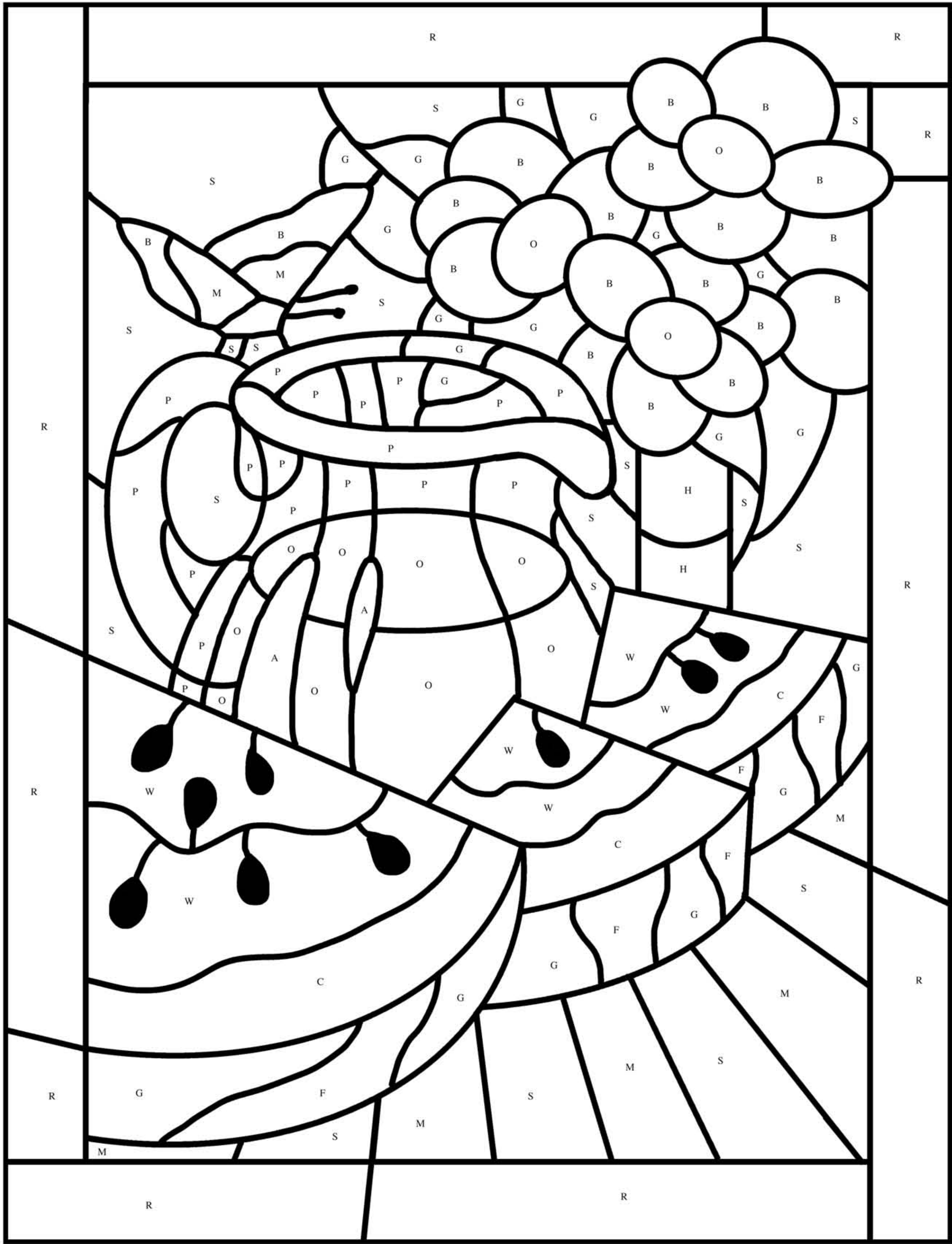
281-D Purple/Dense Opal

WO-28 Orange/Opal Wisspy

Tools and Materials

7/32" Copper Foil Flux Solder

Black Patina 1/2" U-Channel Zinc

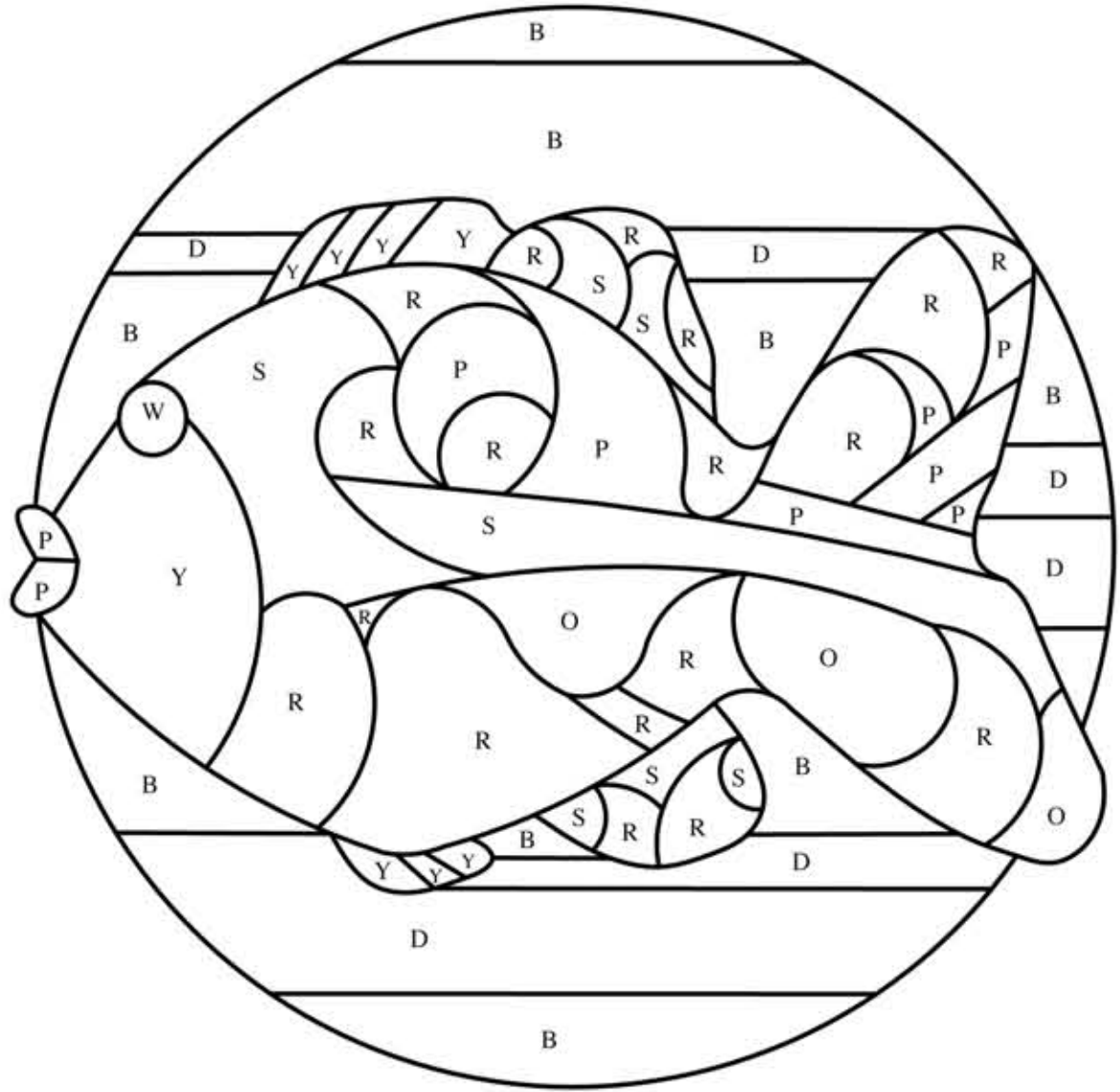


Watermelon Picnic

Design by Chantal Paré

Wissmach Glass Company
S - Clear Seedy for Inside Border, 1/2 Sq. Ft.
C - Light Cranberry Pink Ripple for Watermelon Slices, 1/2 Sq. Ft.
W - Cranberry Pink English Muffle for Watermelon Slices and Flower Centers, 1/2 Sq. Ft.
F - Medium Green Flemish for Watermelon Rind, 1/2 Sq. Ft.
B - Dark Copper Blue English Muffle for Flowers and Butterfly Wings, 1/2 Sq. Ft.
M - Medium Copper Blue English Muffle for Flowers, Butterfly Wings, and Tablecloth Stripes, 1/2 Sq. Ft.
G - Dark Yellow Green Double Rolled for Leaves and Watermelon Rind, 1/2 Sq. Ft.
H - Clear Hammered for Flower Vase, Scrap

Spectrum Glass Company
R - Clear Rainwater® for Outer Border, 1 Sq. Ft.
O - Orange Artique® for Orange Juice and Flower Center, 1/2 Sq. Ft.
P - Clear Baroque™ for Pitcher, 1/2 Sq. Ft.
S - Clear Cord for Tablecloth Stripes, 1/2 Sq. Ft.
Youghioheny Opalescent Glass Company
A - Clear Stipple for Pitcher Reflection, Scrap



Bubble the Fish

Design by Jean Beaulieu

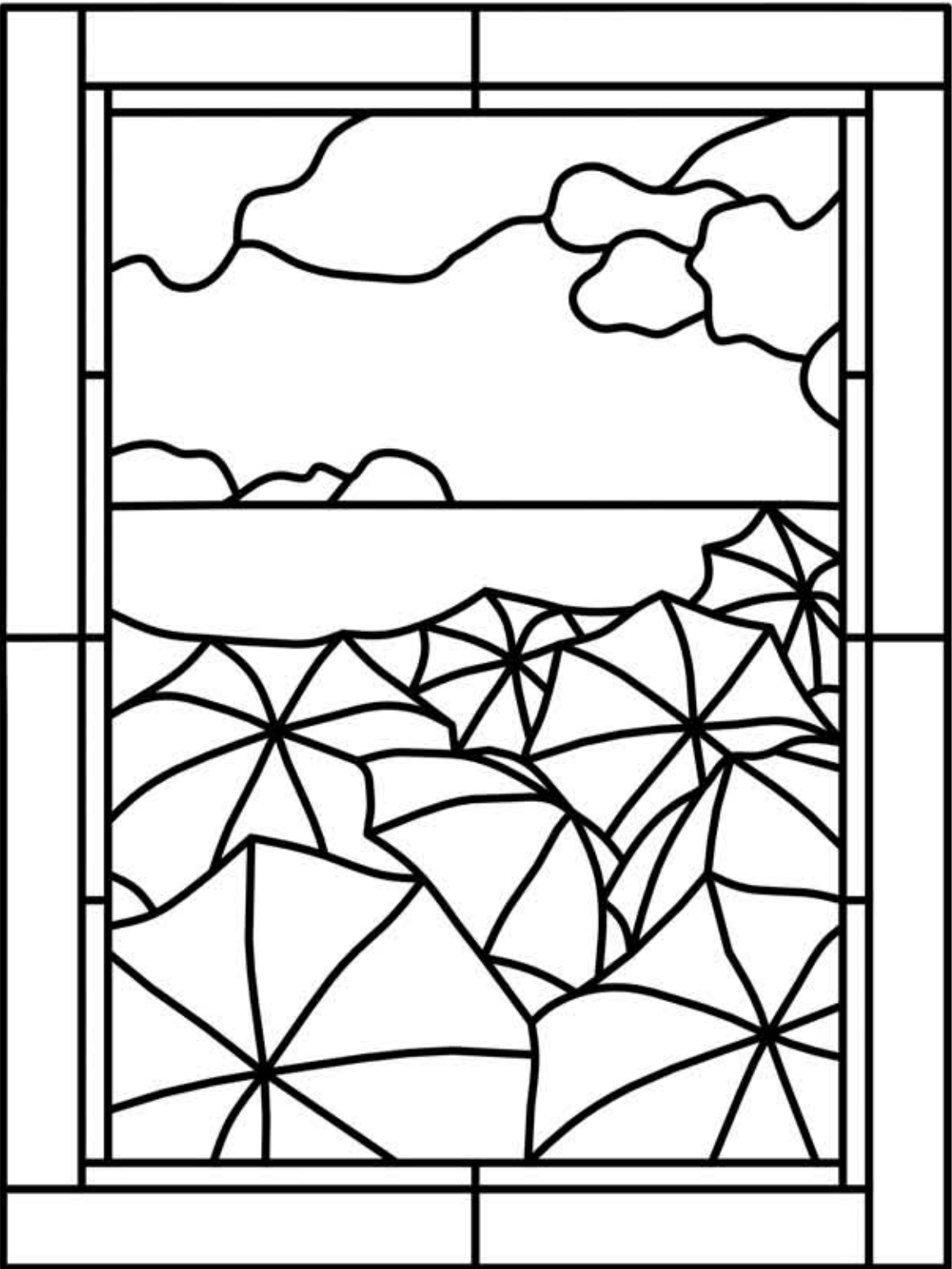
Wissmach Glass Company
D - Cobalt Blue/Dense Opal/Crystal for Water, Scrap
B - Cobalt Blue/Streaky/Crystal for Water, 1/2 Sq. Ft.
Y - Yellow/Dense Opal/Crystal for Fish, Scrap
S - Silver Yellow/Light Opal/Crystal for Fish, Scrap
R - Opal/Copper Red/Crystal Wissy for Fish, Scrap
P - Medium Purple/Dark Purple/White Opal Mystic for Fish, Scrap
O - Dark Amber/Dense Opal for Fish, Scrap
W - White for Fish Eye, Scrap

Wissmach Glass Company

315-D Medium Amber/Dense Opal for Sand and Outer Border, 2 Sq. Ft.
WO-503 Opal/Dark Gray/Brown Wissy for Thin Border, 1 Sq. Ft.
188-L Cobalt Blue/Light Opal/Crystal for Sky, 2 Sq. Ft.
277-L Medium Blue Light Opal/Dark Blue for Water, 1-1/2 Sq. Ft.
78-D Medium Amber/Green/Dense Opal/Crystal for Mountains, Scrap
51DDXXMSP Light Opal/Crystal for Clouds, 2 Sq. Ft.

Umbrellas

101-LL Dark Green/Opal Crystal, 2 Sq. Ft.
Remaining Colors Cut from Scrap
1-L Silver Yellow/Opal/Crystal Streaky
WO-2 Yellow/Opal/Crystal
118-LL Cobalt Blue/Opal/Crystal Streaky
118-D Cobalt Blue/Dense Opal/Crystal
281-D Purple/Dense Opal
WO-28 Orange/Opal Wissy



Enlarge to desired size

Beach Crowd

Design by Kevin Thornhill

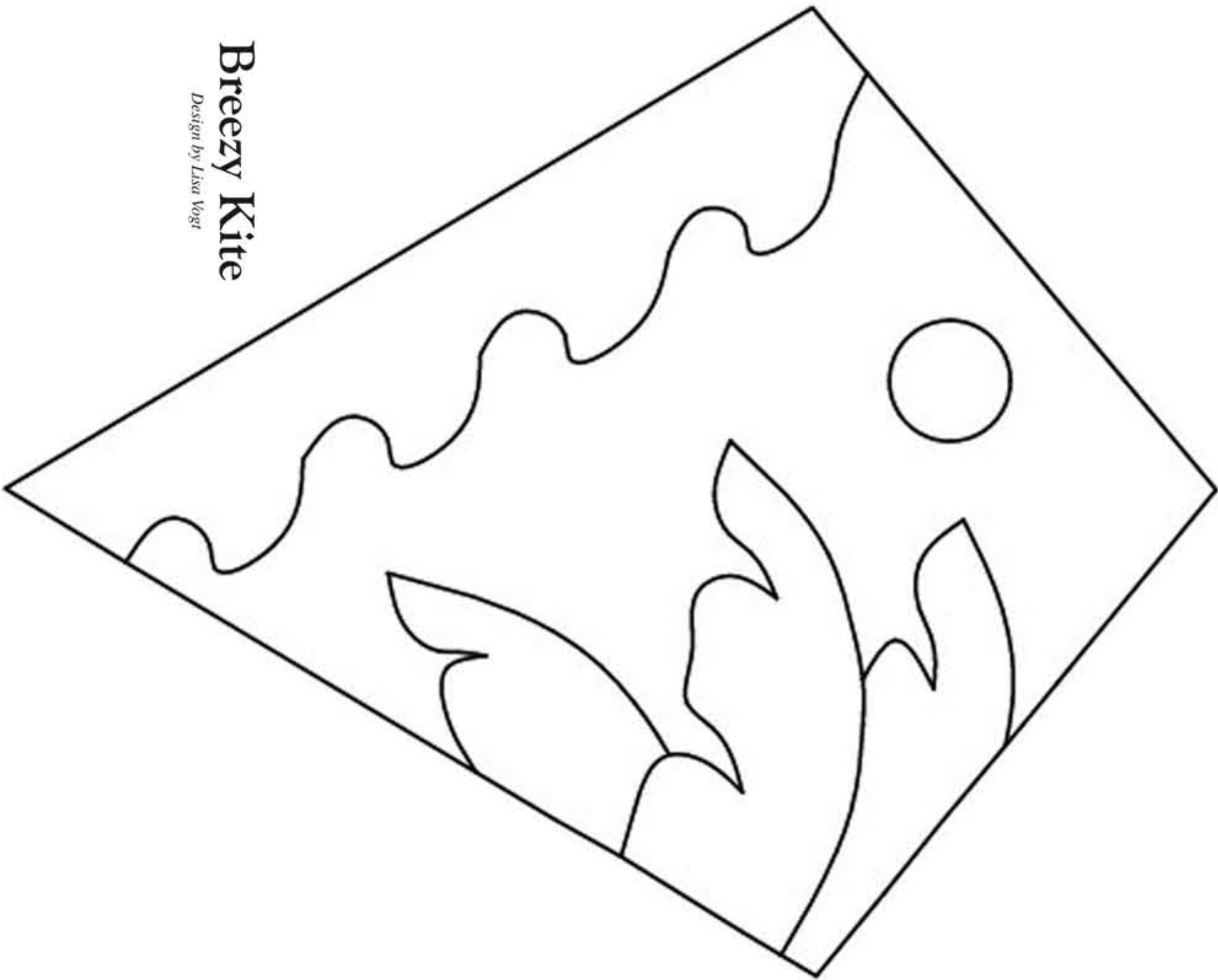
Wissmach 96" Frit
96-03 Opaque White for Kite Base Layer, 1 Sq. Ft.
96-13 Transparent Deep Sky Blue for Second Layer, 1 Sq. Ft.
96-19 Transparent Sapphire Blue for Rolling Wave, 1/4 Sq. Ft.
96-10 Gold Tone for Palm Leaf, 1/4 Sq. Ft.
96-40 Orange Red for Palm Leaf, Scrap
96-42 Orange for Palm Leaf, Scrap
Clear and White Twisted Cane, 1

Coatings By Sandberg

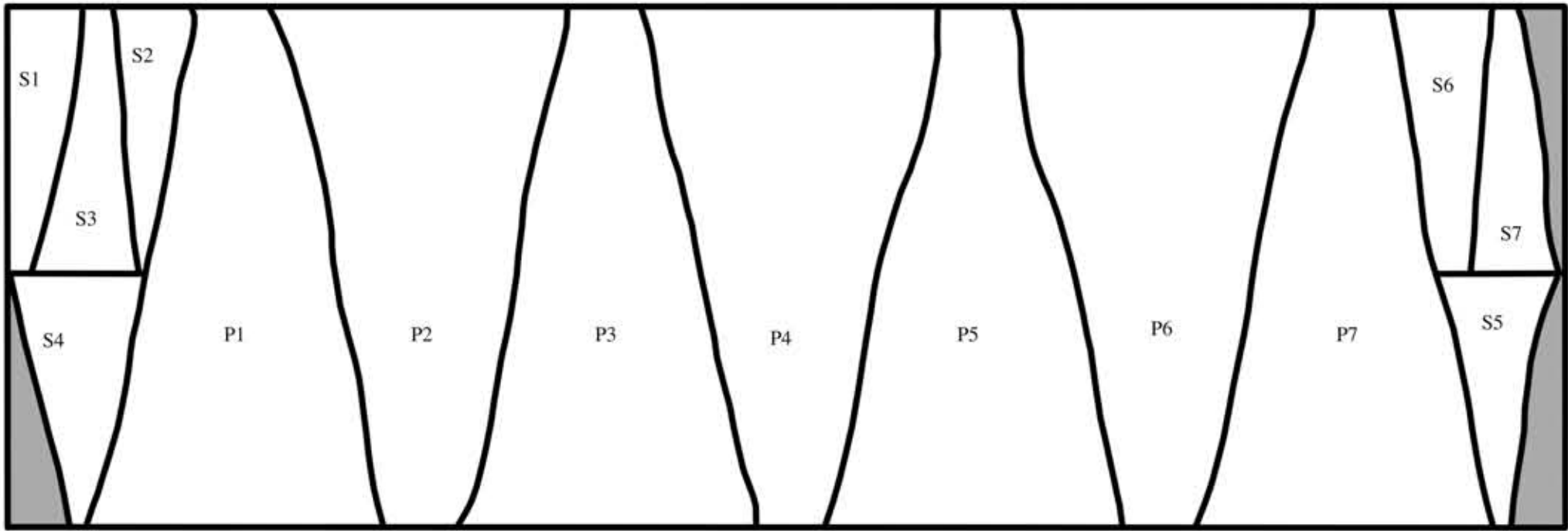
Textured Dichroic Glass on Black for the Sun, Scrap
System 96" Frit
F1-2702-96-8 Orange Opal Powder Frit for Shading
F1-402-96-8 Flame Opal Powder Frit for Shading
F1-2402-96-8 Yellow Opal Powder Frit for Shading

Breezy Kite

Design by Lisa Vogt



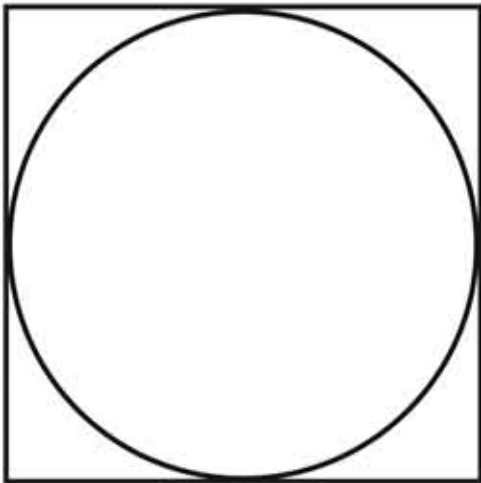
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Maltese Cross

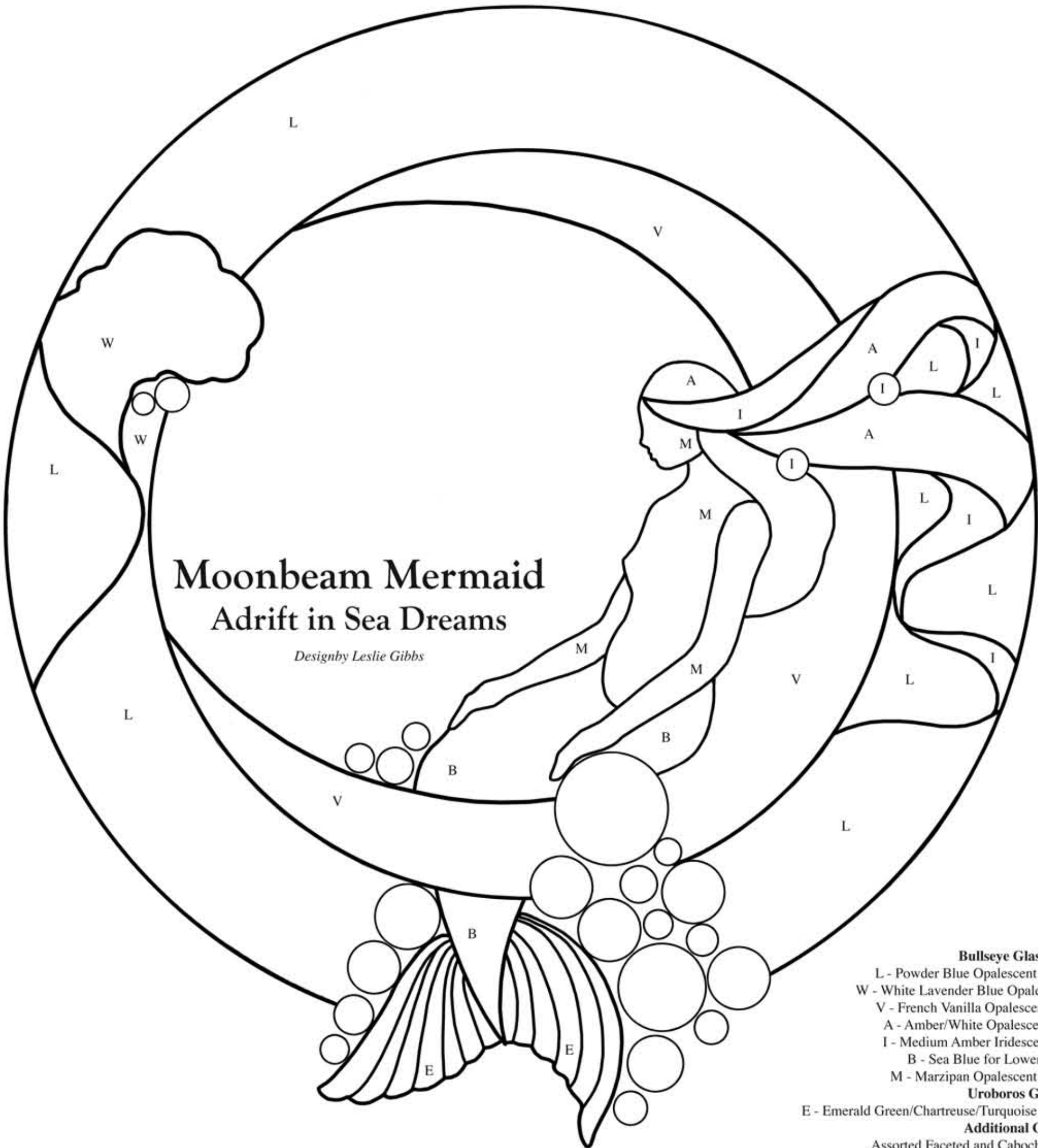
Design by Komal C. Prasad

Bullseye Glass Co.
2024 Clear/Red Opal, 3-1/2" x 10-1/2"
1100-380-F Tekta, Scrap
312 Pea Pod Green, Scrap
1412 Light Aventurine Green Frit, Medium



P = Petal
S = Side Stamen

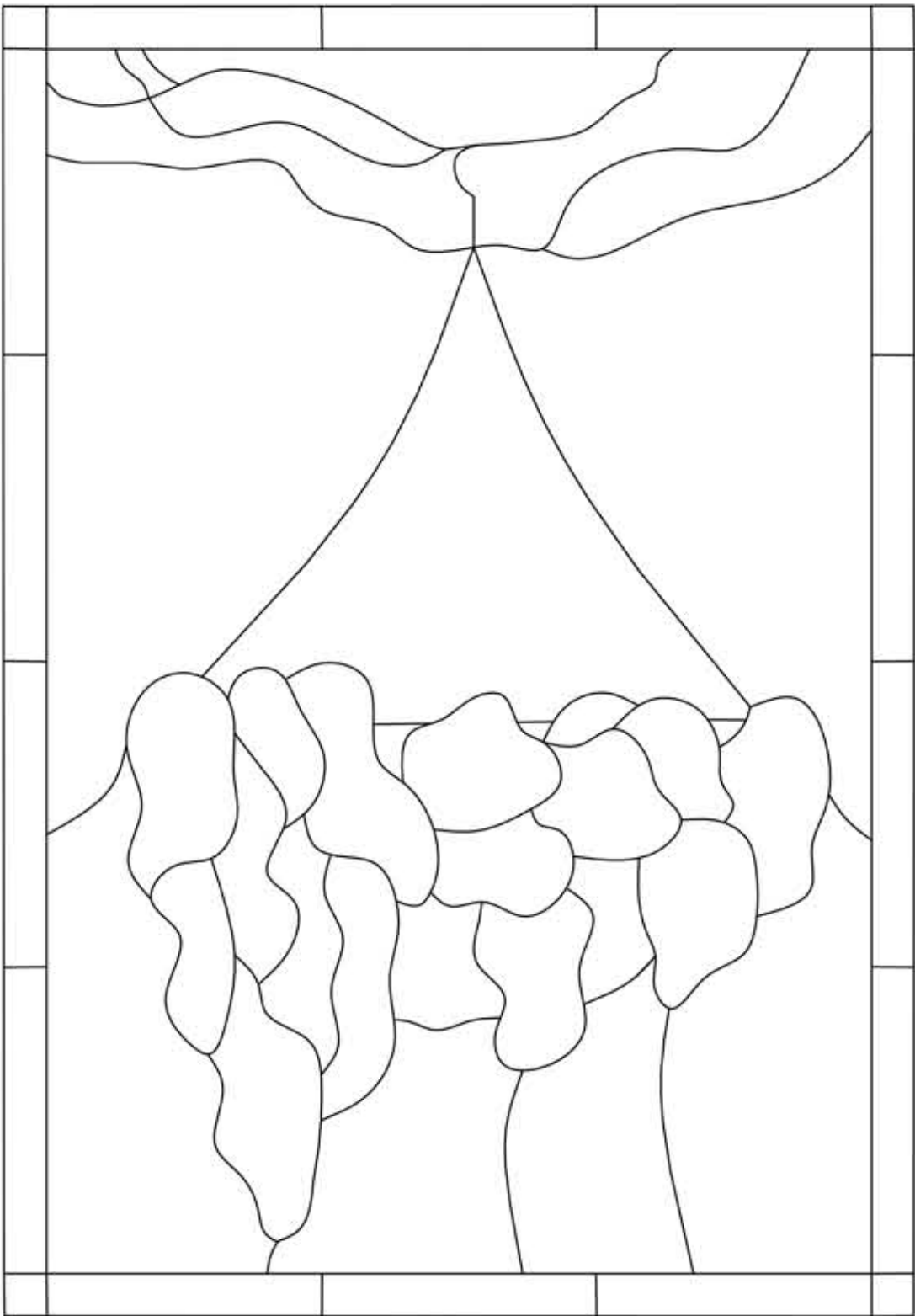
2-1/2" Square
Nip it to make a circle.
Cut 1 Clear Circle
Cut 1 Green Circle



Moonbeam Mermaid Adrift in Sea Dreams

Design by Leslie Gibbs

Bullseye Glass Co.
L - Powder Blue Opalescent for Border, 10" x 8"
W - White Lavender Blue Opalescent for Wave, 3" x 3"
V - French Vanilla Opalescent for Moon, 5" x 6"
A - Amber/White Opalescent for Hair, 4" x 4"
I - Medium Amber Iridescent for Hair, 2" x 3"
B - Sea Blue for Lower Body, 3" x 4"
M - Marzipan Opalescent for Flesh, 4" x 5"
Uroboros Glass
E - Emerald Green/Chartreuse/Turquoise Ripple for Mermaid Tail, 4" x 4"
Additional Glass
Assorted Faceted and Cabochon Gems and Jewels



Enlarge to desired size

Flower Basket Panel An Introduction to Freeze'n Fuse

Design by Robin Anderson

Bullseye Glass Co.
2109 Woodland Brown for Tree Limb, 1/2 Sq. Ft.
Additional Sheet Glass
Sky Blue/White Wispy for Sky, 3 Sq. Ft.
Sky Blue Cathedral for Border, 1-1/2 Sq. Ft.
Various Shades of Compatible Green
for Basket Foliage, Scrap
90 or 96 COE Glass Powders
Opal and/or Transparent Colors in the Same COE

Marble Kaleidoscopes Fantastic Views for Your Favorite Marbles

Design by Allison Borgschulte

1/8" or 3 mm Thick 96 COE Opaque and Transparent Colors, 8" x 8"

Glass for Fused Version

Stained Glass, 8" x 3/4"

Glass for Nonfused Version

Stained Glass, 8" x 4"

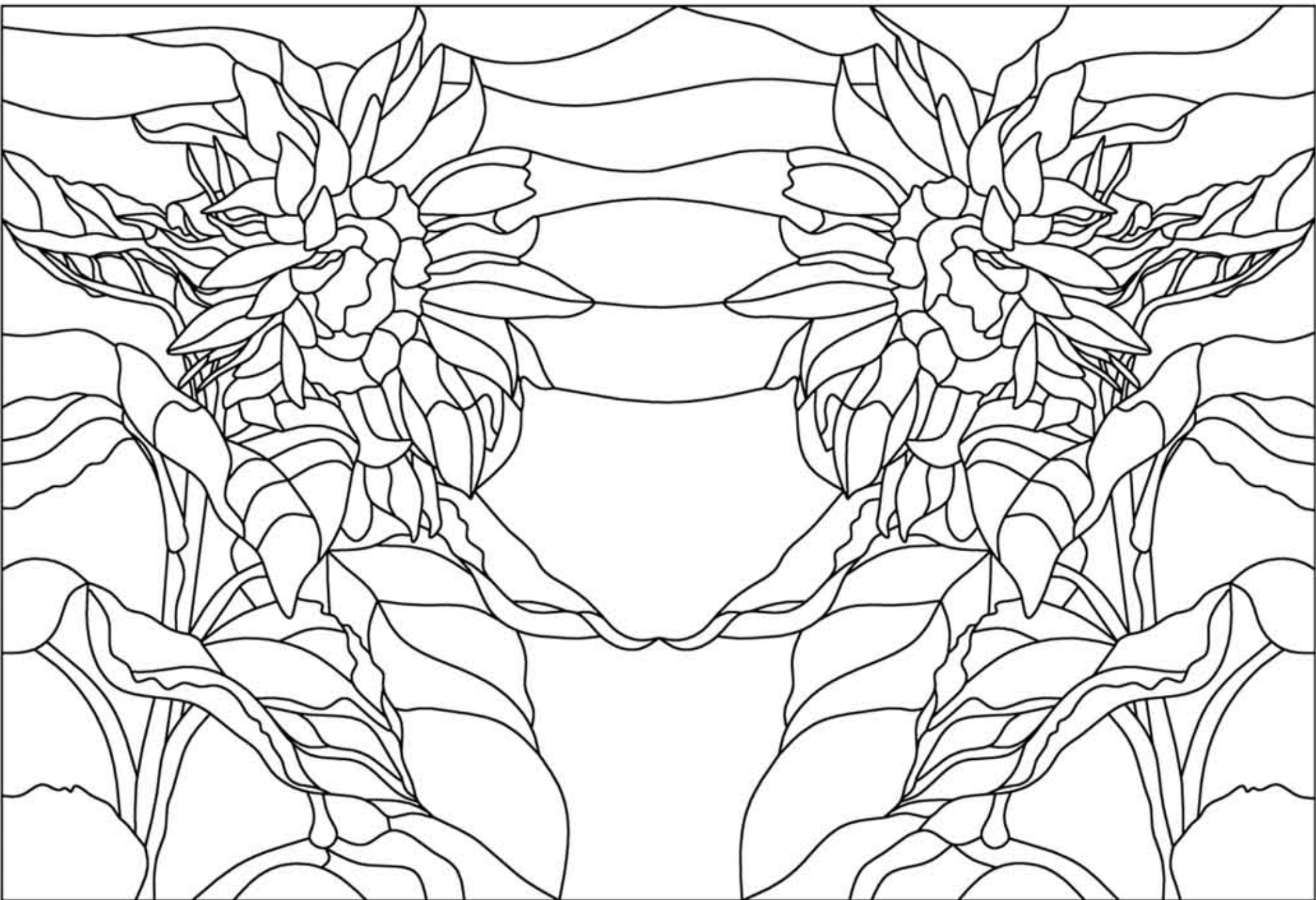
Additional Glass

Clarity Front Surface Mirror, 8" x 4"

Clear Art or Float Glass, approximately 2" x 3"

Glass Lens (optional)

A - Cut two pieces of stained glass.
B - Cut one piece of stained glass.
C - Cut two pieces of mirror.
D - Cut one piece of mirror.
E - Cut two pieces of mirror.
F - Use as guide to cut copper wire.



Enlarge to desired size

Sunflower Introductions

Design by Paned Expressions Studios

Wissmach Glass Company
1-D Yellow Silver/Dense Opal/Crystal for Flower Petals, 2 Sq. Ft.
145-SP Dark Amber/Opal/Crystal for Flower Petals, 3 Sq. Ft.
199-LL Medium Amber/Dark Amber Brown Streaky for Flower Centers, 1 Sq. Ft.
155-LL Dark Purple/Green/Light Opal/Crystal Streaky for Flower Centers, 1 Sq. Ft.
WO-112 Dark Green/Dark Amber/Opal Wispy for Leaves and Stems, 4 Sq. Ft.
23-L Light Green/Light Opal/Copper Red for Leaves and Stems, 4 Sq. Ft.
188-L Grey Blue/White Light Opal for Sky, 12 Sq. Ft.

Bubble the Fish

Design by Jean Beaulieu, Text by Delynn Ellis

Drawing is a wonderful way for children to communicate their feelings. When one of those children is also sick, it makes the communication that much more important. In Jean Beaulieu's book, *Children's Illustrations I*, the artist captures the innocence of a young person's designs. The drawings that he features were created by children who were once staying at the Montreal Ronald McDonald House in Quebec, Canada. A percentage of the sales of his book will be donated to the Fondation des Amis de L'Enfance of Ronald McDonald House of Sainte-Justine Hospital.

Enjoy the Bubble pattern and go crazy with bright colors. You might just brighten someone's day. There is also a Bubble Family featured in Jean's book along with twelve complete patterns that can be used for stained glass fabrication, mosaic designs, or fused glass applications. To order one of Jean's many pattern books or to see more of his work go to www.jeanbeaulieu.com.

GPQ



Wissmach Glass Company

118-D Cobalt Blue/Dense Opal/Crystal for Water, Scrap

118-LL Cobalt Blue/Streaky/Crystal for Water, 1/2 Sq. Ft.

2-D Yellow/Dense Opal/Crystal for Fish, Scrap

1-L Silver Yellow/Light Opal/Crystal for Fish, Scrap

WO-13 Opal/Copper Red/Crystal Wisspy for Fish, Scrap

WO-701 Medium Purple/Dark Purple/White Opal Mystic for Fish, Scrap

317-D Dark Amber/Dense Opal for Fish, Scrap

51-DD White for Fish Eye, Scrap

Tools and Materials

7/32" Copper Foil Flux Solder

Black Patina 1/4" Lead U-Channel

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Maltese Cross

Design, Fabrication, and Text by Komal C. Prasad

Photography by Dr. Dheerendra Prasad



Bullseye Glass Co.

2024 Clear/Red Opal, 3-1/2" x 10-1/2"

1100-380-F Tekta, Scrap

312 Pea Pod Green, Scrap

1412 Light Aventurine Green Frit, Medium

Tools and Materials

1/4" Soft L-Grade Copper Tubing, about 36"

Respirator Mask or Other Breathing Protection

Pipe Cutter Soldering Iron Solder

Drill 1/8" Diamond Coated Ball Drill Bit

#8/32 Aluminum Flat Head Machine Screw, 1-1/2" long

#8/32 Zinc-Plated Nut Aloe Gel

#8 Neoprene Washers (2) Flux Flux Neutralizer

Copper Patina E6000 Craft Glue

Light Machine Oil Kiln Fire Paper

Creative Paradise GM53 Draping Molds or

7" Diameter by 4" Deep Stainless Steel Bowls

Moving from sunny Charlottesville in Virginia, to Buffalo, New York—the famed snow capital of the United States—I knew that I was going to miss my garden. I started by making glass panels of landscapes and floral designs, but the five months of snow covered ground was simply too bleak for me. That is what led me to make flowers in glass so I could add splashes of color to my snowy yard.

The Maltese Cross was one of the first flowers I made. It is simplistic, but it's also very simple to make. Once you have grasped the basic steps for making a flower, you can experiment and create many more variations.

Creating the Glass Flowers

1

Start with a 3-1/2" x 10-1/2" piece of Red Streaky glass.



2

Cut 7 petals per pattern.



All of the petals do not need to be exact, since variation gives a more natural look. Try to keep the top of the petal at 2" and the base of the petal at 1/2". When you finish, you will have 7 petals and 2 side pieces.

3

Cut the side pieces into smaller triangles to get 7 small pieces.





4

Mark and nip each large petal at the top edge to create a curve.



You can slightly nip or grind the corners on the top of the petal, but it is not necessary since the glass will round up on firing.

5

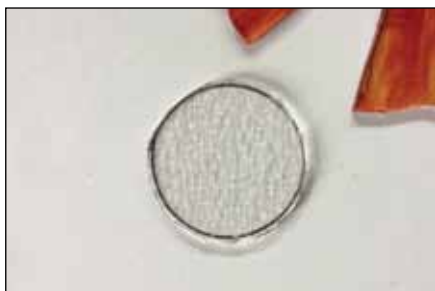
Arrange the flower petals on the kiln shelf.



Here are all the 14 pieces. I used the cutters shown here—the pistol grip for the main cutting and the wheeled nippers to create the curve at the top edge of the larger petal.

6

Cut a 2-1/2" circle from the Clear Tekta textured glass.



You can cut a square and nip it using the wheeled nippers to shape it into a circle. The edges might be rough, but they will blend in during fusing.

7

Place the clear circle in the center of the petals, making sure that you overlap all of the petal edges by at least 1/4".



8

Cut a 2-1/2" circle from the Pea Pod green glass, again using the wheeled nippers to create the circle.



Place the green circle on the side of the flower and fuse it in the same load. See the suggested fusing schedule at the end of the tutorial. Remember that every kiln fires differently, so you may need to make some adjustments for your own kiln.

9



Place the fused flowers on the draping molds.



Here are the flowers already fused and placed on molds ready for draping. I used kiln washed stainless steel bowls that have a slight dip in the center. You can also use Creative Paradise GM53 molds if you prefer. I inverted one of the draped flowers to show how they will look once they are draped.

10

Add some frit to the Pea Pod Green circle.



Dab a bit of aloe gel or a squirt of pump style hairspray on the green circle and sprinkle on some Light Aventurine Green medium frit. Be sure to wear a respirator mask or other breathing protection anytime you are working with glass frits or powders. Tack-fuse the piece to get a textured look. See the end of the tutorial for a suggested tack fuse schedule.



11

Drill a hole in the center of the flower with a 1/8" diamond coated ball drill bit to make a hole for a #8/32 Bolt.



Immerse the center of the flower in water while drilling.

Soldering the Stems

Assemble all of the tools you will need for making the flower stems and cut 3 feet of the 1/4"-diameter soft copper Type L tubing.

12



13

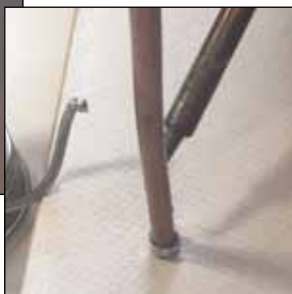


Thread the #8 nut fully onto the #8 aluminum bolt and insert the bolt into the copper tubing.



14

Apply liquid flux sparingly at the tube/nut junction all around and solder until the solder flows evenly.



As you apply the flux and solder, hold the entire assembly inverted on a piece of scrap wood so that the copper tube is flush with the nut. Allow the solder to set for one minute before picking up the tubing.

15

Use a screwdriver to remove the aluminum screw from the assembly and wash the soldered joint well with flux remover.



16

Pat the screw dry and dip it into the copper patina solution until the solder turns copper colored.



Wash and dry the screw after applying the copper patina. If making multiple stems, apply a dab of light machine oil to the nut at this stage to prevent corrosion while you are making the other stems.



17



Attach the flower to the stem using the #8 bolt, placing a rubber washer between the glass and bolt head.



18



On the back side, add another rubber washer before inserting the bolt into the pipe stem.

Tighten by hand, being careful to not overtighten.

Assemble the flower, then attach the green disk decorated with the textured frit on top of the bolt head, using E6000 craft glue.



The green disk will help to cover the bolt head and give the flower a more finished look. Now shape the stem into a natural curve and place it in a vase or directly in the ground. The flowers can stay outdoors year-round.

GPQ

Tack Fusing Schedule

Segment 1: Ramp 250°F/hr to 900°F and hold 45 min.
 Segment 2: Ramp 500°F/hr to 1400°F and hold 15 min.
 Segment 3: Ramp 9999 (AFAP*) to 900°F and hold 45 min.
 Segment 4: Cool to room temperature
 *as fast as possible

Fusing Schedule

Segment 1: Ramp 300°F/hr to 1150°F and hold 30 min.
 Segment 2: Ramp 350°F/hr to 1225°F and hold 30 min.
 Segment 3: Ramp 450°F/hr to 1490°F and hold 10 min.
 Segment 4: 9999 (AFAP*) to 900°F and hold 60 min.
 Segment 5: Ramp 300°F/hr to 700°F and no hold.
 Segment 6: Ramp 400°F/hr to 100°F and no hold.
 *as fast as possible

Draping Schedule

Segment 1: Ramp 350°F/hr to 1000°F and hold 5 min.
 Segment 2: Ramp 450°F/hr to 1150°F and hold 30 min.
 Segment 3: Ramp 9999 (AFAP*) to 900°F and hold 120 min.
 Segment 4: Ramp 300°F/hr to 700°F and no hold.
 Segment 5: Ramp 400°F/hr to 100 and no hold.
 *as fast as possible

Artist and designer Komal C. Prasad launched her company Amaalgam as a vehicle to share her creativity with the world. The name of the company is a takeoff on the many mediums that she works in and with as well as the varied sources and materials she uses.


Fascinated by colors from early childhood, Komal grew up surrounded by art. Her home was a veritable art gallery, with massive oils and watercolors displayed everywhere, not to mention sculptures and statues in wood, plaster of paris, and metal. She has used this to great advantage by following in her mother's footsteps, the National Award winning artist, the late Mrs. Nishi Chopra. Komal has worked with many mediums, from tie-dye and batik on paper, cotton, and silk cloth, watercolors, and oils to stained glass, glass painting, and her latest passion, fused glass.





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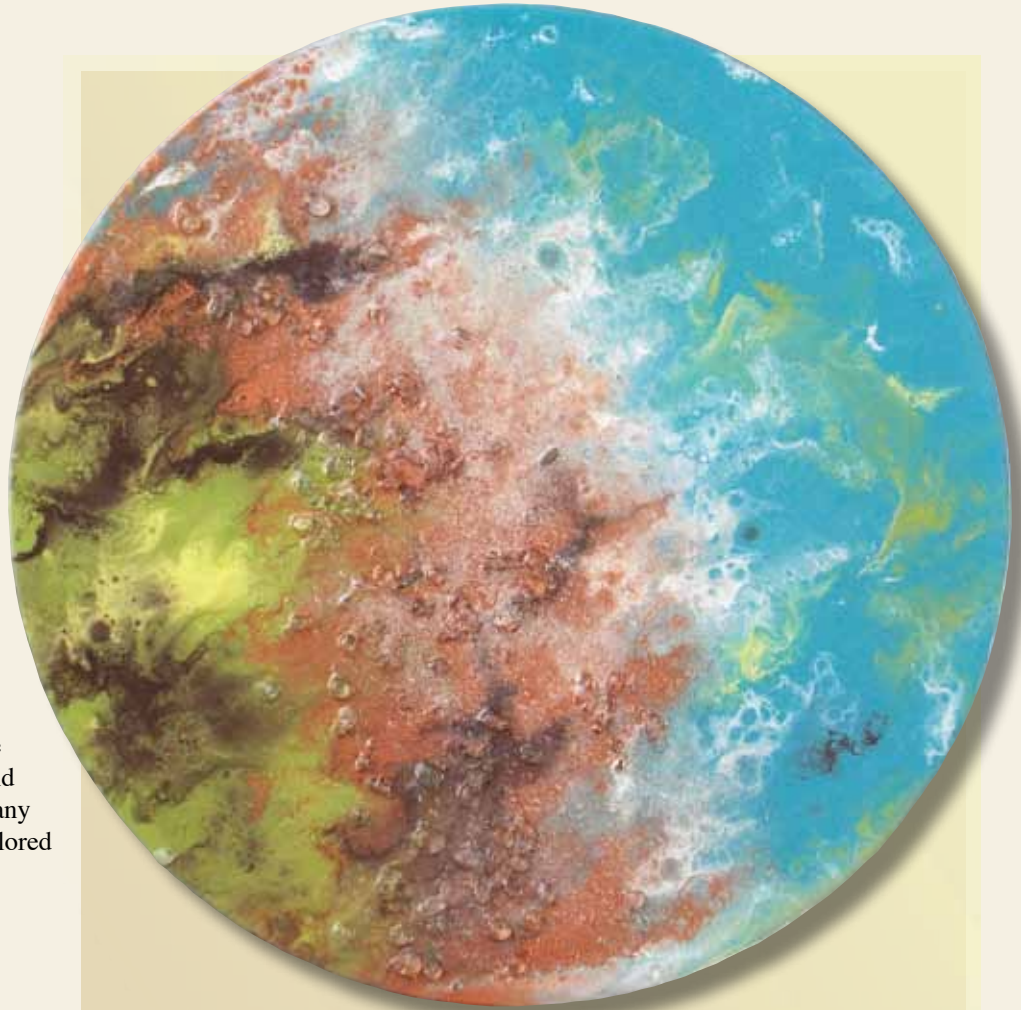
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Pouring Summer Beach Landscape in Poured Glass Enamels

Design, Fabrication, and Text by Margot Clark

Pouring glass enamels is not an exact art, more of an abstract art, but control and manipulation can be used to create an idea. I always plan on doing at least four pours at a time so I can try out different effects. This one made the cut by looking the most like a nice, sandy, summer beach. All the others are shown later in this article and all could be slumped or draped or created on any shape of glass. I use clear, but any colored glass could also be used as the base.



Fusible Glass

10" Diameter Clear Glass

Clear Coarse and Fine Frit (same COE as Clear Glass)

Unique Glass Colors

1951 Brite White

1963 Tulip Yellow

1967 Dark Brown

1977 Jade

1995 Apple Green

11013 Copper Glow

Layering Mix

Tools and Materials

Small Butane Torch Stir Sticks

Toothpicks Measuring Spoons

Straws 3 ounce and 9 ounce Disposable Cups

Single Edge Razor Blade

Aluminum Tray and Parchment Paper Liner (optional)

Preparation

1

Gather all of the materials you will need for the project.



Here is my setup for Pouring Enamels. The aluminum tray is a disposable oven liner and helps to keep things neat. If you want to save the drips from pouring, you can line the sheet with the kind of parchment paper you use for cooking. After the drips dry—say that fast ten times!—you can peel them off and use them for a really abstract pour.

Using the 9 ounce cups, mix at least two tablespoons of each color to two tablespoons of Layering Mix. These will remain your base colors. We will be adding water to some of the colors, but if you keep these separate, you will have the option of changing the amounts of water for your next pour.

Please note that you can never, ever get the same thing twice, even doing the exact same thing, so aim for a suggestion of a calm beach scene. Plan on at least two pours. As I stated at the beginning of this article, I like to do four so that I have some leeway for experimentation.

This is called a Straight Pour, since the colors will be added to the glass surface one at a time. Place 1/2 of each of the mixed colors into separate 3 ounce cups. For the second pour you can adjust the amount of water added or change where you place the colors once you see how the first pour comes out.

Add water in the following amounts:

3/4 teaspoon to Copper Glow

1/2 teaspoon to Dark Brown

1/4 teaspoon to Apple Green

1/8 teaspoon to Tulip Yellow

A few drops to Brite White and Jade

Pouring the Color

Now that the colors are mixed, you're ready to pour.

2

Plan your beach design.



Think about creating a beach scene—Apple Green for some foliage, Tulip Yellow for some highlights in the foliage and water, Dark Brown for earth, Copper Glow for some warm, sparkly beach sand, Brite White for foam and highlights, and Jade for water. You need an idea of what you want so you can plan. However, this technique has a mind of its own, and you may change that story a few times! That is why I always plan on at least four pours to have a choice of what best meets my idea. Or . . . maybe my whole idea changes.

You can see that this is not meant to be nice and neat! Pour the colors onto the glass, then add more drips here and there for interest. Start with the water and move toward the foliage. Add in some Dark Brown for shading and some yellow for highlights.

3

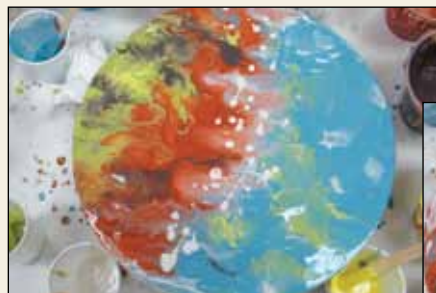
Tilt the glass back and forth to let the colors begin to form a design.





4

Tilt the Jade for the water toward the beach.



5

Add more white if needed for the foam on the water and tilt again.

If you still need to add more white, use a straw to blow the water colors toward the beach. Then turn the piece and blow some of the white out to sea and blow the foliage to connect with the beach.



6

Use the torch to begin to add some nice cell action.

Start by moving the flame in the direction you want the color to flow—for example, the white toward the water to indicate foaming water. The close-up photo shows the very cool foam effect on the water. Now move the torch over the rest of the colors going up and down, around and around, and back and forth. You can play until no more cell action takes place.

Warning: Do not get too close to the piece. I worked 2" to 3" above the surface. Also, do not stay in one place too long or you can burn the wet color. If that happens you will have a brown spot. You can pick it off quickly with a toothpick or do that in two more places and have it be part of the design!



7

While wet, add the coarse frit for rocks and some of the fine frit for sand across the Copper Glow "beach" area.



This photo shows the piece after it's dry. The Layering Mix the colors dries very hard and holds most of the frit in place, so you can turn the piece over after 24 hours and clean off the back and edges in preparation for firing. I use a single edge razor blade in a holder for cleaning, since the color really does dry very hard.

8

Fire the piece to set the colors and frit.



I used float glass and float frit for this article, so my temperatures will be hotter. Use the recommended firing schedule for the glass you are using. UGC colors can be used with 83 through 96 COE, so you can use any glass for this project. **GPQ**

Firing Schedule for Float Glass and Frit

Segment 1: Ramp 450°F/hr to 1465°F and hold 10 min.
Segment 2: Ramp 9999 (AFAP*) to 1000°F and hold 10 min.
Segment 3: Ramp 300°F/hr to 850°F and hold 30 min.
Segment 4: Ramp 80°F/hr to 300°F and hold 1 min.

*as fast as possible



Margot Clark is co-owner of Unique Glass Colors (UGC) along with Harold Clark and Saulius Jankauskas, MD. UGC manufactures kiln fired glass color and MUD so "working" at UGC involves lots of "playing" with color!

Margot teaches art in all forms and mediums, but glass is her passion. She participates in local art exhibits, her work is in private collections worldwide, and she has works that are part of permanent museum collections.





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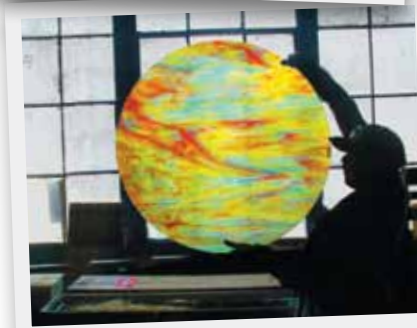
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Breezy Kite

Design, Fabrication, and Text by Lisa Vogt

Some of my favorite childhood memories include flying kites at the beach in the summer. I wished those long carefree days would last forever, but eventually we went back to school and back to our usual routine. When it came time to decorate this free flyer, I took a wistful trip down memory lane and included vibrant tropical designs to bring back that fun loving summer feeling.

You'll be thrilled at how fast and easy it is to make this 8" x 10" kite. You can follow the pattern and use the design elements I've included. You can also think of this kite as your own blank canvas and add special details for a personal touch — maybe include a sailboat or design a woodland scene or chill out with an ice cream cone image. The possibilities are endless. You're limited only by your imagination.

Wissmach 96™ Glass

96-03 Opaque White for Kite Base Layer, 1 Sq. Ft.

96-13 Transparent Deep Sky Blue for Second Layer, 1 Sq. Ft.

96-19 Transparent Sapphire Blue for Rolling Wave, 1/4 Sq. Ft.

96-10 Gold Tone for Palm Leaf, 1/4 Sq. Ft.

96-40 Orange Red for Palm Leaf, Scrap

96-42 Orange for Palm Leaf, Scrap

Clear and White Twisted Cane, 1

Dichroic Glass

Textured Dichroic Glass on Black for the Sun, Scrap

96 COE Powder Frit

Orange Opal Powder Frit for Shading

Flame Opal Powder Frit for Shading

Yellow Opal Powder Frit for Shading

Tools and Materials

Sifter Small Paint Brush

Black and Silver Markers Lip Balm 60/40 Solder

Paste Flux Black Spray Paint

Fish Tank Rubber Tubing E6000 Adhesive

1/4" Steel Rebar, 1/2 Ft. Fuser's Glue (optional)

1/8" Thick Steel Rod, 1-1/2 Ft.

10-1/2" x 9" x 4" Ceramic Sconce Slumping Mold

Chop Saw or Hack Saw Wire Cutters



1

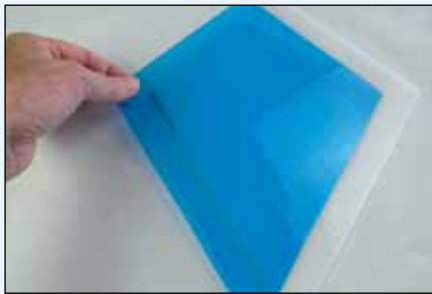
Use the pattern to cut the two glass layers that will form the kite body.



The basic kite is made with two layers of glass. Use the pattern as a guide to cut the base out of the Opaque White glass, which will hide the wall bracket. If you prefer to hang the kite in a window, cut the base out of clear glass. Cut the second layer out of the Deep Sky Blue glass. Grind the two pieces of glass as needed to improve the fit.

2

Stack the blue layer on the white base layer.



3

Trace the outline of the rolling wave onto the Sapphire Blue glass with a marker.



Place the glass for the rolling water on the pattern. Using the pattern as a guide, draw the deep inside curves on the glass with a marker. I use a black marker on light colored glass and a silver marker on dark colors.

4

Coat the marker line with lip balm so it doesn't wash off when using the saw.



5

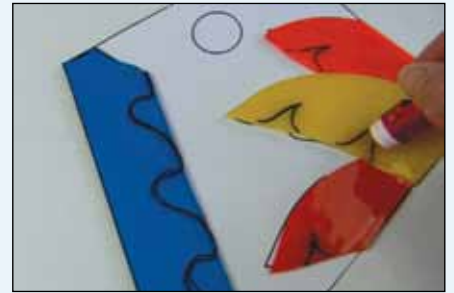
Select the glass for the palm leaves and cut out the leaves.



Using the pattern as a guide, cut as many of the shapes as possible by hand.

6

Outline the deep cuts on each leaf with a marker and coat the marker with lip balm.



7

Cut the circle for the bright sun out of the paper pattern.



8

Trace the circle onto the smooth black reverse side of the CBS textured dichroic glass and cut out the circle.



9

For the sun rays, cut a few 1/4"-wide strips out of the same dichroic glass and cut the strips into small triangles.



10



Grind the palm leaves, blue wave section, and sun to improve the fit.





11

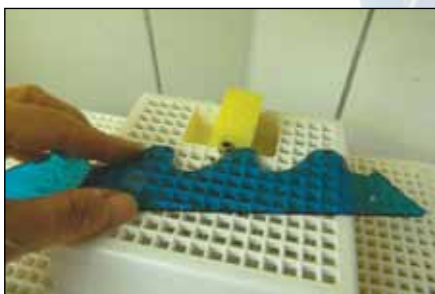
Use a saw to carefully cut out the details on the edges of the palm leaves and the rolling waves.



If you don't have access to a saw, the shapes can be made up of pieces.

12

Grind the rolling wave with a small 1/4" grinder bit to smooth out the curves.



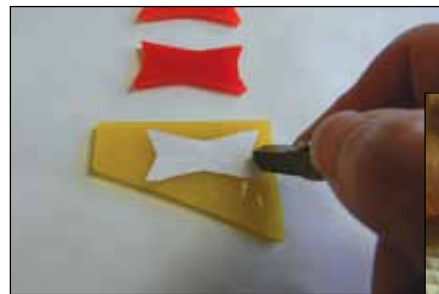
13

Clean the cut glass pieces with a mild soap to remove any leftover marker or lip balm.



Dry the glass and check the fit.

14



Using the pattern as a guide, cut three bows for the kite tail out of complementary glass colors and grind the bows.



15

Add powdered frit color and brushed details to the palm leaves.



Lay the palm leaves on a sheet of scrap paper and sift a high-contrast color powder frit onto each leaf. Add detail to each leaf by pulling a small, dry paint brush through the frit.

16

Assemble the glass pieces.



Add the palm leaves, rolling waves, and other detail pieces to the blue glass kite layer. Carefully arrange the frit-coated palm leaves and the rolling waves on the blue kite glass layer as well as the sun and rays. It's the small, added details that make this kite so charming. Now cut a narrow strip of clear dichroic glass and cut the strip into tiny bits. Nip a white and clear twisted cane to size. Arrange the dichroic bits and twisted cane on the rolling waves piece.

17

Fuse the assembled glass.



The cut glass pieces can be glued to keep them from sliding when the project is moved to the kiln. If you choose to apply glue, use the smallest amount of fuser's glue possible. Place the assembled project on a primed or fiber paper-covered kiln shelf and fire to a full fuse temperature using the guide at the end of the article.

18



Slump the fused glass on a scone mold and fire-polish the kite bows.



Place the fused glass kite on a scone mold. Position the three bows on a kiln shelf or on fiber paper. Fire the glass to a slump temperature using the guide at the end of the article. Firing the bows gives a nice shinny quality to the edges.

19

Cut the lengths of metal for the wall bracket and kite tail.



To make the metal wall bracket, measure across the back side of the kite. Cut the flat 1/4" steel bar to fit inside the glass with a chop saw or hack saw. To make the tail, bend three curves into the end of the 18"-long, 1/8" round steel rod.



20

Solder the metal kite tail rod to the center of the metal bracket bar to form a T shape.



Clean the metal before moving on to the next step.

21

Paint the metal wall bracket with black spray paint and dry overnight.



22

Cut two 1/4"-long pieces of clear, soft fish tank-type rubber tubing with wire cutters.



23

Slide the cut tubing over the ends of the steel bar.



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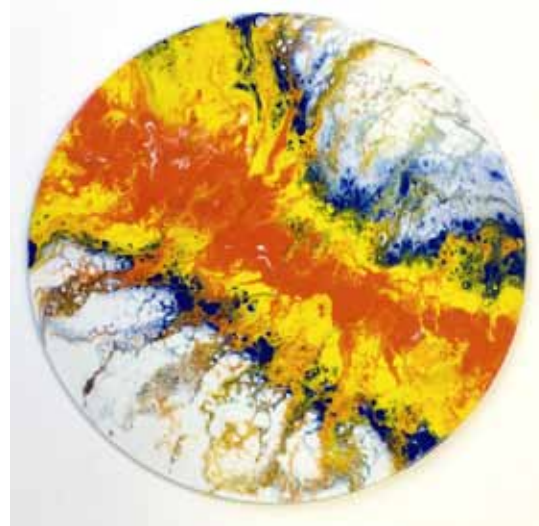
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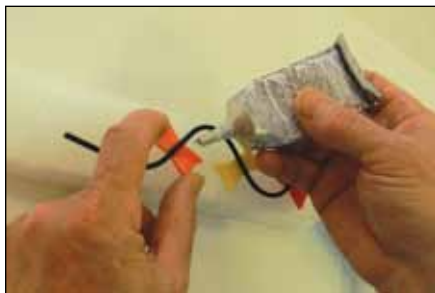
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The tubing acts as a cushion between the glass and the metal. It is also flexible and provides a stronger, longer lasting bond to the glass than the metal alone.

24
Apply E6000 adhesive to the rubber tips and glue the metal wall bracket to the back of the glass kite at three points.



25
Glue the three glass bows onto the tail with E6000, support the tail and kite, and allow the glue to dry overnight.



Hang your kite on the wall with a picture hanging hook. Swing the tail to the right or left for a more whimsical installation. Hold the tail in place by pressing a pin or small nail under one of the bows where it won't be seen. Now sit back and enjoy the carefree, sun-drenched, breezy days of summer all year long. **GPO**

Firing Schedules

Below are suggested schedules for fusing and slumping the kite. However, each kiln fires differently. Be sure to test-fire these guides in your kiln and make adjustments as needed.

Full Fuse Firing Schedule

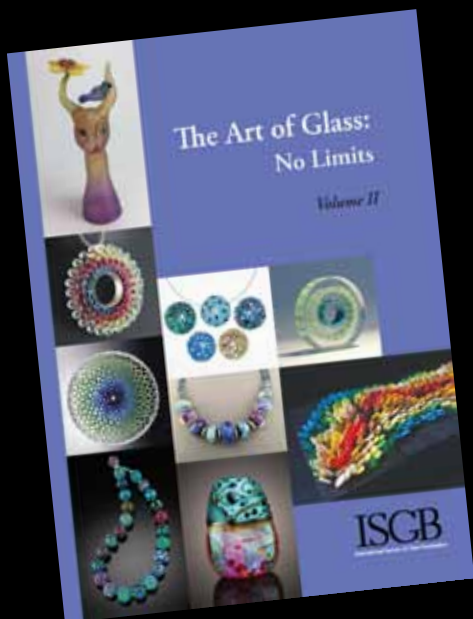
Segment 1: Ramp 300°F/hr to 1300°F and hold 30 min.
Segment 2: Ramp 500°F/hr to 1465°F and hold 10 min.
Segment 3: Ramp 9999 (AFAP*) to 960°F and hold 40 min.
Segment 4: Cool to room temperature.
*as fast as possible

Slumping 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.
Segment 3: Cool to room temperature.
*as fast as possible

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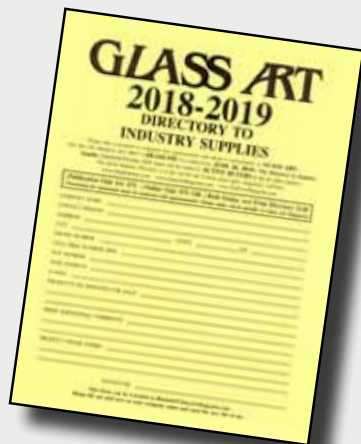
Lisa Vogt discovered glass while pursuing an education in fine art. For more than twenty-five years, this award-winning artist has drawn upon her fine arts background and own sense of style, drama, and whimsy to combine this historic medium with innovative glass techniques for limitless design possibilities.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

Lisa is the author of fourteen design books and a series of instructional videos in addition to frequent articles for industry magazines and fiction for publication. She also lectures at national and regional seminars and has been a featured artist on HGTV, PBS, and Glass Patterns Quarterly Webinars.

A huge supporter of public art, Lisa regularly contributes artwork for auction to benefit local, regional, and national charities. Her home and studio are located north of Tampa Bay in Wesley Chapel, Florida, where she resides with her husband and two daughters. Visit www.LisaVogt.net to find out more about her work and seminars.

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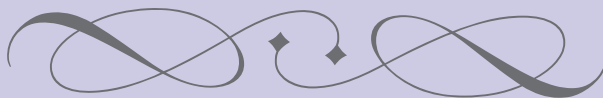
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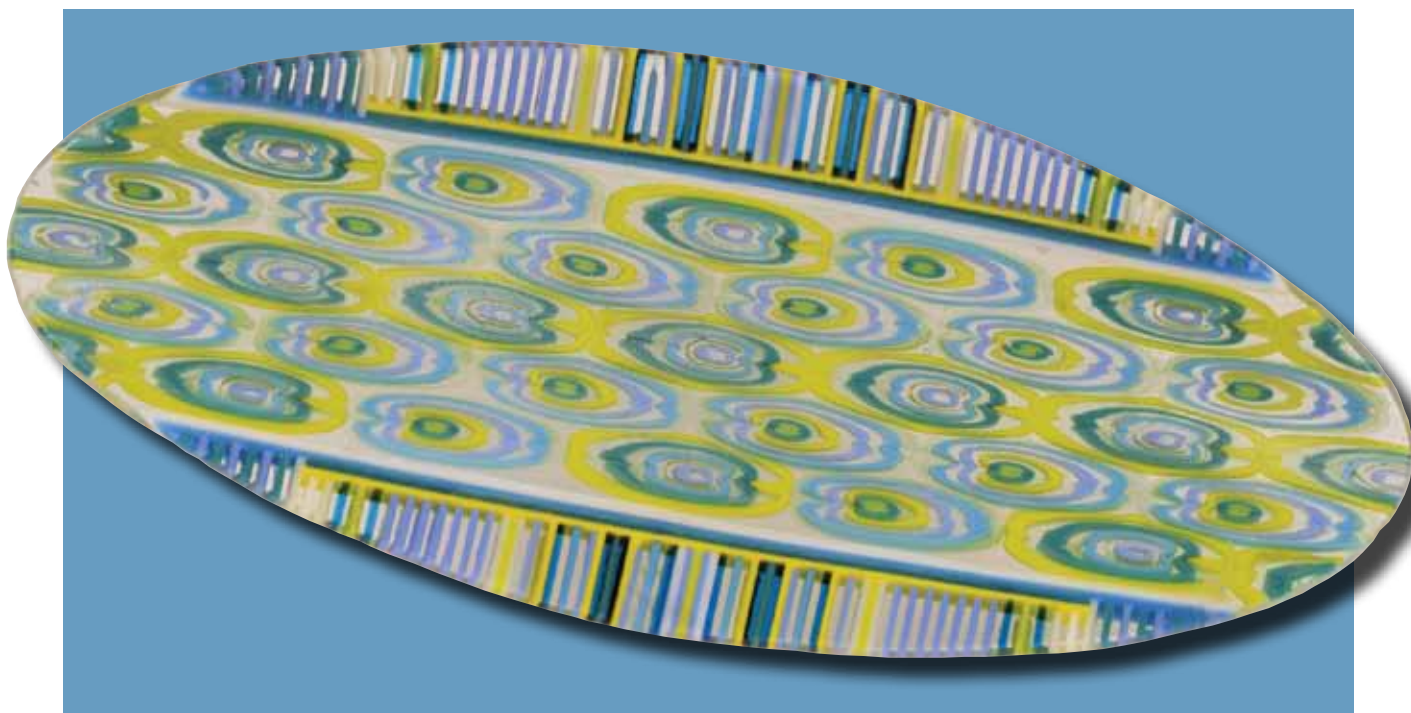
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Surf's Up!

Unique Pattern Bars

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



One of the joys of fusing is that you can combine multiple techniques to create an interesting outcome. In this surfboard replica, you will be creating your own pattern by placing strips of glass both vertically and horizontally in the kiln. You will also learn how to put the finishing touches on the project with a tile saw and wet belt polisher. These techniques will help you create a vibrant color and texture combination that emanates the surfing vibe to all. Let's get started.

Creating the Pattern Components

You will be stacking your colors to create the component for the center design of this project. When making your glass color selections, take time to determine the order you will use for your glass colors before cutting them into specified widths. The strips for the component built were all 12" in length. If you want to make a smaller component slab, you can use shorter lengths, but they must be the same length when building this pattern slab.

Note: The slumping mold we used was found at a local ceramic/glass supply shop. That mold measures 19" x 12". Bullseye mold #8951 is a similar shape but is much narrower at 18.1" x 6.7". The instructions provided are for the project we created.

96 COE Glass

For Component Slices

Clear, 6" x 12"

Lemongrass, 4" x 12" (color #1)

Teal Transparent, 4" x 12" (color #2)

Peacock Green Opal, 2" x 12" (color #3)

Turquoise Green Opal, 2" x 12" (color #4)

For Component Layers

Clear for Bottom Layer, 8" x 21"

Clear Cord for Top Layers, 8" x 21" (2)

Complementary Colors for Border and Stripes, Scrap

Tools and Materials

Basic Glass Cutting Tools Protective Eyewear

Mosaic Nippers Permanent Marker

Morton Cutting System Kiln Paper, 14" x 6" and 14" x 22"

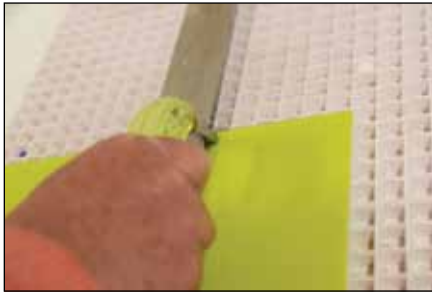
Clear Gel Glue Long Oval Slumping Mold

Tile Saw with Diamond Blade Eye and Ear Protection

60- and 400-Grit Wet Belt Polisher or Lap Wheel

1

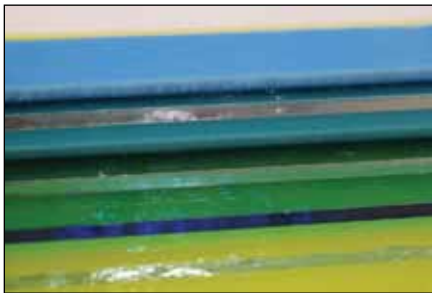
Cut the glass pieces in varying widths according to the different colors.



You will be cutting each different color of glass in a specific width and building the pattern bar in a specific order, with the clear glass in between each different color. The glass colors also have a number provided if you would like to select your own color scheme. Using the Morton System, cut the strips of glass in these widths as follows: 3" Lemongrass (color #1); 2-1/2" Clear; 2" Teal Transparent (color #2); 1-1/2" Clear; 1" Peacock (color #3); 3/4" Clear; 1/2" Turquoise Green Opal (color #4).

2

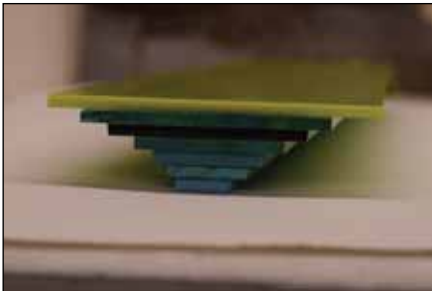
Using a few drops of clear gel glue on each piece of glass, continue to stack the glass in the specified order.



After the stack has been built, be sure that each layer is straight and centered on the piece below it. Allow the glue to dry completely.

3

Place the stack in the kiln and fire with the narrowest strips facing down.



Place a small piece of kiln paper on your work surface. Invert the glass stack onto the kiln paper, place it in the kiln, and fire on a full-fuse program, with a maximum temperature of 1450°F. If you are firing the component with other items in your kiln, be sure to allow enough room for the stack to spread without running into anything else in your kiln. See the suggested schedule at the end of the article.

4

Use the tile saw to slice the bar and match the slices to create the pattern.



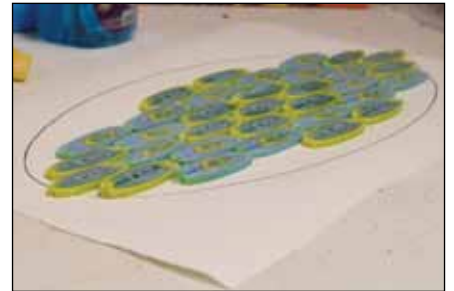
The glass slab in image #4 has been flipped over to show the colors under the Lemongrass (color #1). Your fused component will be a long slab with Lemongrass (color #1) having encased the other colors. Following the manufacturer's instructions for your own tile saw, set the cutting guide on the saw to cut 1/8" strips and begin to cut slices off of the fused slab.

Each feather-like pattern shown is made up of 2 slices. Keep the slices in order as they come off the saw so that each pair is well matched. You will be matching the two slices along the flat edges to create this pattern.

Completing the Project

5

Decide on the design pattern for the piece.



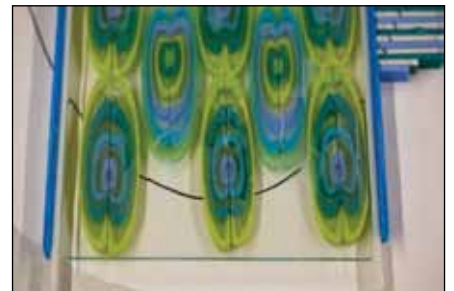
Place the mold you have selected upside down on the larger piece of kiln paper and trace around the edges of the mold with a permanent marker. This will keep the design centered and help you to visualize the overall design.

Start to lay out the component slices to determine your desired pattern. Using your creativity to arrange the pairs of slices sideways, on a diagonal, or lined up individually. The length of the pattern should extend past the mold outline. You will be creating the same thickness of glass on the entire project and will need some overhang on all of the sides to be able to maintain an even thickness when cut.

Once you are happy with the pattern you have created with the component slices, determine the dimensions you will need for the clear glass rectangle that will become the bottom layer of the project. The clear glass needs to be wide enough to just cover the pattern along the widest spot on the sides and long enough to cover the length of the pattern. Be sure it is also long enough to overhang the mold marks along the bottom curves.

6

Prepare the glass for firing.



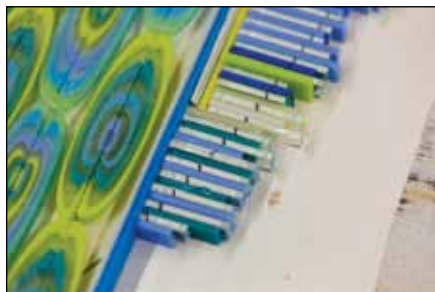
Cut the clear glass to the appropriate size. Using gel glue, glue the clear rectangle directly onto the top of the arranged slices, taking care to not move them, and allow the glue to dry completely. Once dry, the glass can be turned upside down on the kiln paper with the clear glass on the bottom. If you prefer, you can also move the design layout, after first taking a photo, and put the clear glass in place on the kiln paper before gluing the slices in place on the clear glass. Center it within the traced outline.

7
Using the remaining component colors and clear glass, set up the Morton System to cut a selection of 3/8"-wide strips.



Break each strip with running pliers. You can also add strips from other pieces of glass that will complement your pattern bars. We added some Yellow 260-72SF, Amazon 226-74SF, White 200SF and Alpine Blue 238-72SF. Arrange the colors with the strips standing on their sides.

8
Arrange and glue the strips.



Use your glass cutter or mosaic nippers to cut the strips to the desired length. Apply gel glue to the chosen strips and arrange them on their sides flush against the side of the clear glass rectangle. The first row will run the length of the clear glass rectangle. Multiple strips can be combined to create the length you need.

Add as many rows for the side frame as you want. Each row can be a different length. Just remember that you must have a mirror image on the other side of the pattern. At least one strip needs to run the length of the clear glass rectangle.

9
Once you have finished creating a frame for the sides, determine the stripe pattern you would like for the edges of the project.

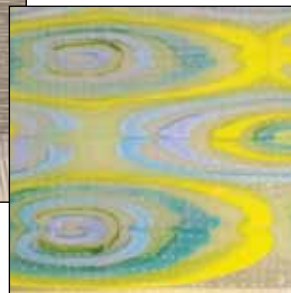


When cutting the lengths for the striped pattern, the strips need to be at least 1/2" longer than the marker outline of the mold. As you start to determine the striped border pattern for the sides, glue each glass strip in place snugly against the last one and make sure that the ends stay flush against the clear rectangle.

Continue the striped border pattern along both sides of the clear glass rectangle. Even though you have glue on the strips, they can still be rearranged for a few minutes. Finish the striped border, making sure to leave at least 1/2" longer than the mold outline.



10

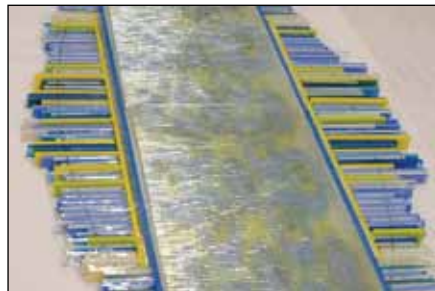


Cut the clear glass pieces for the top layer.

Once you have finished the entire design, cut two additional pieces of clear glass in the same dimensions as the bottom layer. These will be set on top of the component slices within the frame.

Note: We used two layers of Clear Cord glass, cutting the second layer with the texture running perpendicular to the texture in the first layer. Place the pieces with the textured sides together and glue them in place within the frame. By arranging the Cord glass in this manner, you create a grid and capture tiny bubbles within each square when the glass is fused. You can also use 2 pieces of regular clear glass if you prefer.

11
Place the entire piece on kiln paper in the kiln and fire on a full-fuse program.



The suggested full fuse schedule is at the end of the article.

12
Trace the outline of the mold onto the fused glass.



Place and center the mold upside down on the fused piece and trace the outline of the mold directly onto the glass with a permanent marker. This will be your guide for cutting the edges with the saw.

13
Trim away any small sections of glass along the mold outline.



It is not possible to make the curved cuts for this piece on a tile saw without working along the outline in smaller cuts. Trim away any small strips of excess glass along the mold outline. Continue until you have cut away all of the spots along outline.

14

Smooth and
polish the edges.



Using a wet belt polisher or lap wheel, grind off any sharp burrs along the edges of the glass with a 60-grit or other coarse belt. Once you have removed all of the sharp points, use a 400-grit or other fine belt to go along all of the edges of the piece. This will give the glass a smooth finish and help you get the edge cuts flush.

Slump the piece in the prepared mold using the slumping program provided.

GPO



Alysa Phiel, a regular contributor to Glass Patterns Quarterly for the past seven years, is a third-generation glass artist with 30 years of experience, having been taught by her grandparents, longtime glass artists who owned their own studio for 12 years. Alysa then owned and operated Creations in

Glass with her mother for 10 years. She has also shared beginning to advanced classes with hundreds of students over the past eight years as the Director of the Warm Shop at Sonoran Glass School in Tucson, Arizona.

Recently Alysa opened her own studio, Wild Desert Glass, where she continues to create custom projects in addition to offering instruction in fused glass, stained glass, and mosaics. The artist's creativity and range of knowledge make her a fantastic teacher for students looking to create any type of glass art. She constantly experiments with new techniques and materials and helps others challenge themselves and expand their own skills as artists.

Alysa's work, which ranges from fused functional pieces and wall art to mosaic furniture and fountains, can be found in private collections all over the country. She also has numerous commissioned stained glass windows installed in homes and churches all around Tucson.

Fusing Schedules

Remember that all kilns fire differently, so you may need to make adjustments to the following schedules for your own kiln.

Full Fuse Firing Schedule

- Segment 1: Ramp 100°F/hr to 300°F and hold 15 min.
- Segment 2: Ramp 150°F/hr to 1050°F and hold 10 min.
- Segment 3: Ramp 250°F/hr to 1450°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 199°F and no hold.

*as fast as possible

Slow Slumping Guide

- Segment 1: Ramp 250°F/hr to 750°F and hold 10 min.
- Segment 2: Ramp 250°F/hr to 1000°F and hold 15 min.
- Segment 3: Ramp 400°F/hr to 1150°F and hold 20 min.
- Segment 4: Ramp 600°F/hr to 1240°F and hold 10-40**
- Segment 5: Ramp 9999 (AFAP*) to 1000°F and hold 30 min.
- Segment 6: Ramp 90°F/hr to 960°F and hold 60 min.
- Segment 7: Ramp 120°F/hr to 750°F and hold 10 min.
- Segment 8: Ramp 300°F/hr to 100°F and no hold.

* as fast as possible

** time depends on desired effect

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Fused Sun Lamp

Design, Fabrication, and Text by Stephanie O'Toole

Here comes the sun! The sun motif is enjoyed in so many ways, whether it is in the heat of summer or as a reminder of warmth in the winter. Now you can enjoy a sunny glow in the form of a fused lamp. In this project, we will slump glass into a textured mold to create the design. Then we will drape the design over a cylinder mold and finish by inserting the draped glass panels into the lamp base. I will also show you how to stain the ceramic base to give it a warm patina.

Glass

White Opal, 16" x 8"

Pale Amber, 16" x 8"

Creative Paradise

DT30 Sun Texture Mold

GM30 Cylinder Drape (2)

FLBGM30 Lamp Base Kit

Tools and Materials

ZYP Boron Nitride Mold Release

800 Taupe Pickling Stain

Small Soft Brush (optional)

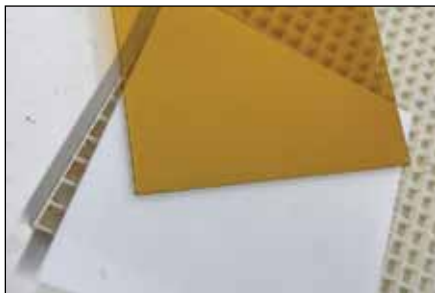
Ceramic Glaze (Optional)

E6000, Epoxy, or Hot Glue



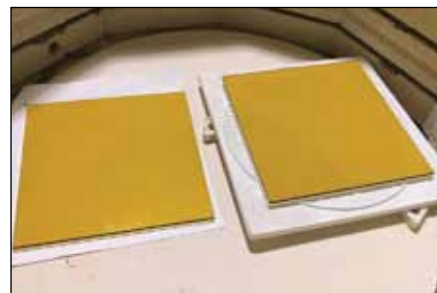
1

Cut two 8" x 8" pieces of Pale Amber and two 8" x 8" pieces of White Opal glass.



2

Position the White Opal and Pale Amber glass pieces in the kiln.



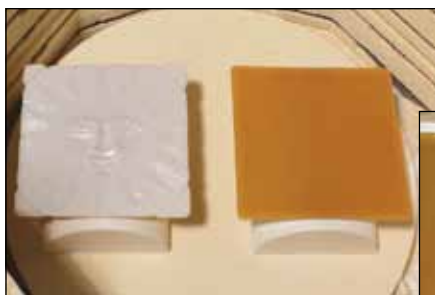
Treat the Sun Texture Mold with the mold release spray and place one of the White Opal glass pieces on top of the treated mold. Place the other White Opal glass piece on kiln shelf paper. Layer one piece of the Pale Amber glass on top of each piece of White Opal.



3

Perform a full fuse using the suggested firing schedule at the end of the tutorial.

The textured panel will be used with the white textured side of the glass out away from the bulb. The light will pass through the amber on the inside of the lamp and radiate through on the textured white side, creating a warm amber color and dimension.



4

Slump the two White Opal/Pale Yellow pieces.

While the glass is cooling, treat two separate GM28 Large Cylinder Drapes with the mold release spray. Center the textured glass panel on one of the draping molds with the white textured side of the panel facing up away from the mold. Drape the smooth piece of glass with the white side facing down on the mold. Having the white glass on the smooth piece, which will be the back lamp panel, face the bulb helps to reflect light through the textured front panel. Center the other glass panel with the amber side facing up on the second draping mold. Fire using the suggested slumping schedule found at the end of the tutorial.



5

Apply stain to the lamp base.



While the glass is firing, apply color to the ceramic lamp base using one of the many great acrylic stain techniques available. If you prefer, you can also use a ceramic glaze technique, which will require firing the base to set the glaze before proceeding. The following is a suggested acrylic stain technique for applying color to the lamp base.

Rinse the FLBGM30 Lamp Base with water to moisten the bisque. Use a damp sponge to apply 800 Taupe Pickling stain to all areas of the ceramic lamp base.

6

Reapply the Pickling stain and wipe off repeatedly until you achieve your desired color.



Moving quickly, rinse the sponge in running water to wipe the Pickling stain off of the ceramic surface, then reapply the stain until the ceramic base matches your own artistic preferences. These stains can also be brushed on with a soft brush and not wiped off. Allow the Pickling stain to dry on the ceramic base.

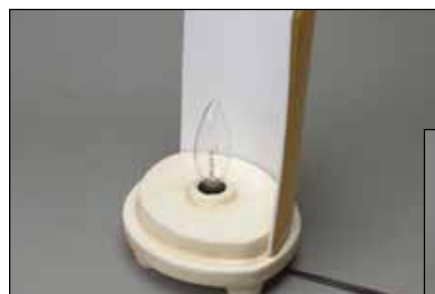


7

Insert the socket into the bottom of the base and screw in the bulb.



After the ceramic lamp base is dry, place the socket with the wings in the hole in the base from underneath the base. Adjust the socket in such a way that the wings on the socket are set in place on both sides of the hole in the bottom of the lamp base. Do not push the socket beyond the bottom hole in the base, since the wings can be difficult to remove if they are pushed beyond the first hole in the bottom of the base. The top of the socket should be just level with the top hole in the base. Screw the torpedo light bulb into the socket.



8

Install the draped glass panels onto the lamp base.



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After both glass panels have been shaped on the cylinder drape molds and the glass is cooled, place the panels on the lamp base with the textured panel facing out. It is advisable to use an adhesive such as E6000, epoxy, or hot glue to make sure the glass panels are not jarred off of the lamp base with inadvertent movement. Now plug in the light socket and enjoy the magic!

GPQ

Firing Schedules

The following are suggested schedules for the full fused and slumped portions of the tutorial. Remember, however, that all kilns fire differently, so adjustments to the schedules may be needed to suit your own kiln.

Full Fuse Schedule

Segment 1: Ramp 250°F/hr to 1215 °F and hold 45 min.
Segment 2: Ramp 50°F/hr to 1250 °F and hold 45 min.
Segment 3: Ramp 350°F/hr to 1465°F and hold 5 min.
Segment 4: Ramp 9999 (AFAP*) to 960°F and hold 75 min.
*as fast as possible

Slumping Schedule

Segment 1: Ramp 250°F/hr to 1215°F and hold 30 min.
Segment 2: Ramp 50°F/hr to 1250°F and hold 15 min.
Segment 3: Ramp 9999 (AFAP*) to 950°F and hold 75 min.
*as fast as possible



Stephanie O'Toole has been active in the fired arts industry for more than twenty-five years.

A self-taught artist and ceramicist, she is the founder of Creative Paradise, Inc., a manufacturer of molds for kiln-working artists. Stephanie is dedicated to offering quality fused glass and ceramic products through her company, including fusing molds and Hues 2 Fuse™ glass, as well as artist education via her Webcastic Seminars. Visit www.creativeparadiseinc.com for more information on the company's products.

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An Invitation to the Wissmach/Kaiser-Lee Kiln Forming Challenge

by Petra Kaiser

Here is an invitation from Wissmach Glass and Kaiser-Lee to help spark your creativity and kiln forming skills. If you're wondering what to make, the possibilities are endless. There are a few things to consider as you plan your entry, which is due by December 15, 2018.

Rules for Entering the Challenge

Your final glass art can be any size and can be one piece or a series of pieces that you have made with your multifunctional Kaiser Lee Board mold. You can also enter a series of drop vases, cocktail dishes, suncatchers, an installation, or cast glass sculptures, to name just a few suggestions. As long as you have used one or more pieces of 6" x 6" Kaiser Lee Board and the Wissmach 90 or 96 COE glass, you are eligible to enter the competition.

Together we brought the art of glass fusing and kiln forming where it is today, and with a little challenge we might be able to spark a few new ideas. All you need to do is to take one or two pieces of 6" x 6" x 1" of Kaiser Lee Board and some Wissmach Glass and start creating.

Glass fusers are a sharing community. That's why we also have a category where you can enter as a group—maybe just yourself and a friend or even a whole class. We can hardly wait to see what you all will come up with.

A Sample Project

In the images you see two examples of how Kaiser Lee Board molds can be set up to kiln form glass projects. I won't be eligible for a prize, but I wanted to take on the challenge myself, and I hope you will too.

My goal for creating the eight to twelve pieces I needed for a ceiling installation was to change the setup of the mold slightly for each hanging part. Each piece can move freely, which means that they will be seen from the front and the back.

Wissmach Luminescent Glass is ideal if you work with sculptural pieces that should look good from both sides. The texture in the Kaiser Lee Board catches the light at different angles, which adds even more interest to each piece. As a design feature, I used Wissmach Clear Textured Glass painted with Unique Artisan Paints. As always, you can full fuse and shape in one firing when you are using Kaiser Lee Board as your choice of mold material.

Participant Rewards

Every participant is a winner! Once you enter the challenge and send in your pictures, you will receive a copy of the e-book that will result from this challenge. Thirty participants will win a spot in the *Challenge E-book*. We will also have a variety of shopping coupons available.

Visit kaiserlee.com/the-6-challenge or e-mail Petra@kaiserlee.com to find out more. There you will also find a video with suggestions and instructions.



This 1" x 6" x 6" setup was made with 1-1/2" Kaiser Lee Boards.



This 1" x 6" x 6" setup is made with one Kaiser Lee Board.

Petra Kaiser, internationally renowned kiln formed glass artist and instructor, has a distinctive style that captures Florida sun, light, and water in sculptures, functional glassware, and wearable designs. She is always drawn to 3-D sculptures and abstract shapes, and when first introduced to glass fusing in 1997, she found the available mold options rather limiting. This gave birth to Kaiser Lee Board, a perfect kiln forming medium developed by Petra and husband Wolfgang, that is easy to cut and form into any shape for fusing molds.



Petra loves to teach and shares her cutting-edge techniques and designs with students in her Fuse It Studio and all over the world, and is a regular instructor at the Glass Craft & Bead Expo, BIG Arts, and Edison State College. She has also shared her innovative ideas in three books from Wardell Publications as well as through numerous articles in various international glass magazines. Visit www.kaiserlee.com to learn more about Petra's glass art and workshops.

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2 New Videos from Lisa



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What's New



Wissmach Glass Company has just released its new **2018 Kiln Glass Catalog**. Filled with great offerings from the Wissmach 90™ and Wissmach 96™ COE lines, there is something for everyone who appreciates quality fusible glass. All of the new colors that were released in 2017 have been added. In addition, glass artists and enthusiasts will find new colors that were released in March 2018, including the highly requested 96-51 Transparent Orange Red and 96-52 Dark Red colors. There will also be at least five new Wissmach 96™ colors added in April 2018 as well, along with the addition of at least five transparent colors to the company's growing line of beautiful frits.
304-337-2253 wissmach@frontier.com
www.wissmachglass.com

Bullseye Glass Co. announces new classes for 2018.

Classes will include *Graphic Swim* with Jeffrey Sarmiento, *Chasing Rainbows* with Kathryn Wightman, and a master casting seminar with Daniel Clayman. Register now for these and many more classes from beginner to advanced levels by visiting the website.
503-232-8887
www.bullseyeglass.com



Lisa Vogt presents two new videos. *Fun and Fanciful Fusing with Lisa Vogt*, an exciting DVD video that shows glass artists how to have fun with fusing. It's all about working with vibrant glass colors, making new project shapes, and getting excited about glass fusing again. In this fast-paced video, Lisa will share her pro tips for working with color and how easy it is to build unique project shapes that inspire your creativity. Viewers will be guided step-by-step through



the many firing processes and receive Lisa's time-tested firing guides and helpful hints for making custom display stands. *Advanced Glass Fusing with Lisa Vogt* techniques for combing, free flows, pattern bars, creative slumping, extraordinary glass design, and crafting unique display stands are all included in this comprehensive DVD. Lisa will share the creative process from concept to completion as she explores new, innovative techniques that push the boundaries imposed by glass fusing. With all of these pro secrets revealed, viewers will feel empowered to break free from traditional methods to dig deeper, climb higher, and advance their work to the next level.

lisavogt1@verizon.net
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Astral Glass Studio, LLC and Cindi Shaffer present the **Astral Glass ChopMaster™ Base Unit with Cane Rod Gauge**. These nippers allow the chopping of glass with virtually no hand strain. Great for cutting sheet glass for casting, mosaics, and refining stained glass shapes, they can also cut cane and rods into consistent lengths with flat cuts that stand on end beautifully. The Base Unit and Cane Rod gauge can be purchased on the company's website.

Creative Paradise presents **four new molds**. Included are the LF171 Two Succulents mold, the LF172 Double Succulent Mold, the GM233 Square Shelf Ring; and the GM229 mold, which is designed to slump panels made in the GM110 Patty Gray Dam Mold.

316-794-8621 creativeparadiseglass@live.com
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Piper's Pattern Paper makes DIY stained glass work easier with the company's new **adhesive backed pattern paper**. The rolls are 10 feet long by 30 inches wide for a total of 25 square feet per roll. This adhesive pattern paper provides much greater accuracy in cutting glass, because the thickness of the paper gives artists a slightly raised edge to score against. Leaving the paper on while you grind will speed the process even more, because you will know exactly where the glass is supposed to be ground, and unlike a marker, the paper won't rinse away while you grind. There's no tape, glue, or spray adhesive to mess with. There's also no fitting required, but you get a perfect fit every time. Piper's Pattern Paper is distributed by Creator's Stained Glass and is available on Amazon.com and Walmart.com. 847-477-3863



Unique Glass Colors has added a new kit to its growing line of **Color Kits for Pouring Enamels**. Joining Serenity with its very calming colors and Straw Flowers, which teaches artists how to create flowers using a straw, **Primary Blast** uses all of the intense primary colors. The kits contain all of the colors needed, Layering Mix, and instructions. Visit the company's website to see the whole line of Color Kits or call for more information. info@uniqueglasscolors.com www.uniqueglasscolors.com



The Kay Bain Weiner Glass Art Educational Foundation is hosting its **third annual Glass Experience Madison (GEM 3)** August 16-19, 2018, at The Vinery Stained Glass Studio in Madison, Wisconsin. Over 25 classes taught by 11 instructors, including internationally known Patty Gray, Janine Stillman, and JC Herrell, assistants, and professional staff will offer a first-rate experience. All profits will fund the KBW Foundation's scholarship and outreach programs promoting glass art in K-12 classes. Call or check the website for more information. 608-244-9900 info@kbwfoundation.com www.kbwfoundation.com



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Kiln Corner

A Kiln Maintenance Checklist

by Arnold Howard

Photography Courtesy
of Paragon Industries, L.P.

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

Regular kiln maintenance is an important aspect of making sure that your kiln is working at its best. After every 10 to 15 firings, you should inspect your kiln and perform the following routine maintenance.

1. Make sure the kiln is centered on the stand and that the stand is stable. Before each firing, check all around the kiln to make sure that nothing is touching it. Do not allow anything to lean against the kiln.

2. Remove all flammable materials from around the kiln. Do not store gasoline, paint, or other flammable liquids in the kiln room. Keep these items in a storage shed if your kiln is in the garage. Otherwise you will spend time removing them before each firing. Make sure the kiln is at least 12 inches from the nearest wall.

3. Vacuum the kiln interior and exterior with the brush nozzle. Remember to vacuum the brick grooves. If you have difficulty removing debris from inside the grooves, use a narrow wand-type vacuum cleaner nozzle, being careful to not scrape the kiln walls. Do not vacuum the switch box or allow the nozzle to get close to the thermocouple or controller. The static from the nozzle can damage the controller.

4. If you have a firebrick kiln, check the kiln wash on the bottom for cracks and bare spots in the coating. Remove any melted glass. Reapply kiln wash if needed. Check the kiln walls for glass debris and remove it carefully with a small knife.

5. Check the cord insulation, wall outlet, and plug for heat damage. Has the cord touched the side of the kiln during firing? This will damage the cord insulation. Replace it if it has become damaged. Replace both the cord and wall outlet if either the plug or the outlet shows signs of heat damage.

6. Make sure that the elements are not bulging out of sidewall grooves and repair as necessary.

7. Check the condition of the lid support or spring system and the lid handle. For front loading kilns, lubricate the hinge with graphite if needed. (Do not disassemble the hinge to apply the graphite.)

8. Check the aluminum vent duct for leaks in the kiln downdraft vent.

9. For digital kilns, make sure that the thermocouple extends far enough into the kiln. For 1/4" wide thermocouple the distance should be 1". For a 1/8" wide thermocouple, it should be 5/8".

10. Some final notes: Keep the lid closed when you are not using the kiln. This keeps dust out and prevents the lid from dropping while you are away. Do not store anything besides a shelf inside the kiln, and do not store anything on top.

GPO



Used canned air rather than a vacuum cleaner to remove dust from the inside of a kiln switch box. This is necessary only if you have the switch box open to change parts.



Very gently vacuum the lid of your kiln.

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

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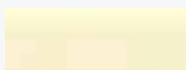
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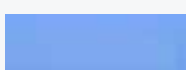
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4 lbs - 2 kg