Advanced Stained Glass Stepping Stones with

DiamondCRETE™
Inc.
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*Within the following class outline are two types of text. Regular text indicates a technique taught in the basic stained glass stepping stone class. <u>Advanced techniques are underlined.</u> Hopefully the blending of techniques will allow you to see how easily you can add interest to your stained glass stepping stones regardless of skill level or experience.

Supplies needed:

Pens or pencil	Mosaic Mount™
Prepared pattern original	Razor blade or craft knife
Pattern copy on card stock	Mold
Carbon paper	Mold release agent
Scissors	Glue stick (optional)
Glass in selected colors	DiamondCRETE™
Glass marking pens	Mixing buckets
Glass cutter, groziers, & running pliers	Measuring cups – dry and liquid
Safety glasses	Gloves
Grinder (optional)	Rubber mallet
Glass cleaner & paper towels	DiamondSEAL™

<u>Advanced supplies:</u> Each supply gives a different effect

<u>Glass enamel paint</u> (for small details such as eyes, antennae)
<u>Play-Doh or modeling clay & glass nuggets, or textured glass</u> (for surface interest)
<u>Sand, pebbles & stiff brush</u> (for rock & pebble borders)
<u>BriteBak reflective tape & faceted jewels</u> (for optical depth)
<u>UV protective clear spray & Silvered wide width foil tape</u> (for images)
<u>Mirror Edge Sealant</u> (for Spectrum SilverCoat glass)
<u>Strap or mirror hooks & jig</u> (for wall hangings)
<u>Freezer duty Ziploc bags</u> (for swirl techniques)
<u>Glitter-extra fine</u> (for glittered surfaces)
<u>Candle Stone plug or assorted rubber plugs</u> (for spacers)

Prepare Pattern:

A. <u>Examine original pattern to determine whether design adjustments are needed to accommodate any advanced techniques such as replacing a portion of the pattern with a faceted jewel. Resize and redraw pattern lines as needed and make a copy on card stock.</u>

B. Place carbon paper between the original <u>(or adjusted)</u> pattern and the pattern copy and use a pen or pencil to 1) number the pattern pieces, 2) note color selection for each piece, 3) mark each pattern piece for 'directional' placement on your glass.

C. Cut out all pattern pieces from the card stock copy by 'removing' the thick lines left by the marker. This is best accomplished with scissors instead of pattern shears as pattern shears do not leave the required 1/4" space between pieces to allow the DiamondCRETE™ to properly flow around each piece of glass.

Cut & Prepare Glass:

A. Arrange each pattern piece on selected glass aligning the 'swirl' or pattern in the glass with the marks drawn on each pattern piece in the previous step. Using glass marking pens, trace and number each piece onto the glass leaving enough room to separate each piece before final cutting.

B. Wearing safety glasses, use the glass cutter, groziers, and running pliers to cut out each piece of the pattern. For proper fit, be sure and cut on the inside of the traced lines.

C. As needed, use the grinder to remove especially sharp points or flares. Best results are achieved when the top surface of the glass does not come in contact with the grinder. Remember that flares or chips below the top surface of the glass will be buried in DiamondCRETE^{TM} and will not be visible.

D. Once your pieces are cut, clean each piece and check it for fit against the original pattern and in relation to the adjacent pieces.

E. If any of the selected glass is a mirror-backed piece or from Spectrum's SilverCoat line be sure to coat the back and sides with Mirror Edge Sealant. This protects the mirrored backing from the alkaline nature of the DiamondCRETE^{TM}.

F. Any glass painting that requires firing or baking should be done at this time.

G. Jewels or other items being featured in the stepping stone that require additional preparation before placement should be prepped at this time. This could mean backing a piece of cathedral glass with BriteBak tape, protecting a picture or photo with a UV spray and encapsulating it in optically clear glass or filling in crevices of a textured piece of glass with white Play-Doh or modeling clay.

Assemble Project:

A. After cleaning your work area, arrange each piece of glass face up evenly over the original pattern. Jewels, plugs and other spacers are placed in step D. For now, be certain to leave adequate room when arranging the glass pieces over the original pattern.

B. Using Mosaic Mount^{TM} cut slightly larger than the pattern, apply the sticky side of the Mosaic Mount^{TM} evenly over the top surface of the glass pieces. Gently press each piece of glass to be sure the adhesive film has made contact, remove your pattern from the back of the design, and then firmly press the edges of each piece of glass to insure good adhesion.

C. Flip project over. Using a razor blade or craft knife, trim Mosaic Mount^{TM} around the outside borders of the project design.

D. If faceted jewels or pictures are being featured in your stepping stone, now is the time to place the prepared pieces on the sticky surface of the mount and align them with the rest of the design already adhered to the Mount. If nuggets are being used, place a rounded ball of white Play-Doh or modeling clay on the mount where the nugget will be placed in the finished design. Rubber stoppers or other place holders should also be placed in the design at this time.

E. Prepare the mold by spraying the vertical inside surfaces with mold release or applying a thin film of petroleum jelly. Coating the bottom of the mold with a mold release agent is usually unnecessary and prevents the effective use of a glue stick if needed (see next step.) Exception – when using glitter, the petroleum jelly is an excellent medium for glitter placement. Spread a thin film in the mold where glitter is desired in the finished design. Place mold on a level surface.

F. To prevent the pattern from shifting in the mold during the pouring operation, use a glue stick and apply glue as needed to the Mosaic Mount^{TM} and then place the project in the mold with the Mosaic Mount^{TM} face down. Be careful that no glue from the glue stick comes in contact with the mold where there is no Mosaic Mount^{TM} and clean up any accidental smears or smudges. If the clean up is not thorough, the water based glue will react with the water in the DiamondCRETE^{TM} mixture and will streak your finished piece. Once your glass is in place, if glitter is desired, sprinkle evenly around design.

G. For embedded pebbles or shells, place sand in the bottom of the mold in the desired location. Any grit of sand may be used – the finer the grit the more detail will be exposed in the pebbles selected for the border. Be sure to keep the sand pushed away from the edge of the glass pieces. Next place rocks, pebbles, shells or other interesting objects in the sand. The sand will act as a 'place-holder' and prevent the DiamondCRETE^{TM} from completely surrounding the featured pebbles during the pouring operation. Experimenting with different amounts of sand will produce deeper crevices between pebbles or more deeply buried pebbles or shells.

H. In separate containers, measure DiamondCRETE^{TM} and water sufficient for the project. Be sure and reserve a small amount of dry DiamondCRETE for grouting after the stepping stone is removed from the mold. If you are creating a custom color, measure both dry colors into the same dry bucket and mix the powder together until you see a consistent dry color. With a custom color, it is VERY important that you remember to reserve sufficient dry mix for grouting as it will be difficult to achieve the same color ratio as your original mix. If you are creating a swirled or marbled coloration, pre-measure the primary color in your dry bucket and the swirled or secondary color in a freezer duty Ziploc bag. Secondary colors rarely need more that 1 or 2 cups of dry product to create the desired effect.

I. Pour approximately two-thirds of the pre-measured water into the mixing container. Add all the pre-measured DiamondCRETE^{TM} and begin mixing. Start mixing slowly to avoid splashing and add only enough water to bring the slurry to a thick milkshake consistency. You should not need all of the water, however, exact amounts used will vary by humidity and color of DiamondCRETE^{TM} selected. Increase the vigor of your stirring to insure the strengtheners are properly mixed or simply use a drill with a mixing paddle attachment, but be sure the slurry is thoroughly mixed. Slowly, pour the slurry over the glass in the bottom of the mold. From the time the water comes in contact with the DiamondCRETE^{TM} to the time you complete your pour should be no more than 5 minutes. For a swirled or marbled coloration in the DiamondCRETE^{TM}, mix the secondary color with water in a freezer duty Ziploc bag to a milkshake consistency and set it aside (briefly.) Next mix your primary color in the mixing bucket. Once both mixtures are the same consistency, open the 'bagged' color and pour into the bucket with the primary color. Using a gloved hand or stir stick, turn the mixture once or twice (no more) and pour the slurry over the glass in the mold. Ribbons of color should be

visible while pouring and (with a little practice) can be directed over selected areas in your glass design.

J. For pieces designed to hang on a wall or other vertical surface, center and embed the strap or mirror hook in the slurry at the back of the stone and hold in place with a jig until the DiamondCRETE^{TM} is 'set.' Jigs can be fashioned from coat hangers or wooden dowels with clips attached.

K. Using a rubber mallet, tap the surface on which the mold is sitting to encourage air bubbles in the DiamondCRETE^{TM} to rise to the back surface of the stone. Make note of the time and allow the stone to harden undisturbed in the mold for approximately 1 hour. If you wish to add your name to the back of the stone, wait about 10 minutes (give or take a few) and use a stylus, nail or other straight object to engrave in the back of your stone.

Project Completion

A. When DiamondCRETE^{TM} has hardened, turn the mold upside down to remove the stone. If you've used any sand, it is advisable to turn your stone out onto a piece of newsprint or craft paper to easily collect the sand as it falls from the mold.

B. Remove the Mosaic Mount^{TM} from the glass and using a razor blade, clean up excess DiamondCRETE^{TM} that may have flowed over the glass pieces. For stepping stones with pebbles or other embedded items, use a stiff brush to remove any excess sand from between those items. Any Play-Doh or modeling clay used as place holders for nuggets should be removed and the nuggets glued in place as well. Rubber plugs or other place holders should be removed as well.

C. Mix some of the reserve DiamondCRETE^{TM} to a very thick paste and grout the stepping stone by pressing the paste into any small holes in the DiamondCRETE^{TM} left between glass pieces and on the sides of the stone. If a swirled or marbled pour was done, two separate batches of grout may be needed to match colors.

D. Elevate your project indoors on pencils or wooden dowels for 28 days to allow the DiamondCRETE^{TM} to fully cure. Your stone is weakest on the day it is poured but gains most of it's strength within the first week or two of the curing process.

E. Seal the top, bottom and sides of the stepping stone with DiamondSEAL^{TM}. Be sure and sign your art work if you did not engrave in the back during the set up!

F. Install your stone in the ground on approximately 1/2" bed of course sand or pebbles to allow for proper drainage of water away from the stone as well as an even weight distribution.

G. Enjoy!