

*Students will learn the indirect mosaic method while learning about functional art applications. Project is large enough that students can collaborate on the design building team skills and encouraging group creativity.*



**Materials Required:**

<u>Item #</u>	<u>Description</u>
8875	Rounded Rectangle Bench Mold
2230	Mosaic Outdoor Cement (7 packages needed)
6079	Tiffany Garden Benches and More ( <i>contains pattern shown in image</i> )
S3172- Medium	Spectrum Medium Amber & White Transparent Glass
S3276- Medium	Spectrum Dark Green & White Translucent
S3651- Medium	Spectrum White & Yellow Opal
S6227- Medium	Spectrum Forest Green Opal
Y1157SP-Medium	Youghioghny White, Peach & Gold Stipple

*Teachers Note: Glass listed is only one suggestion for this pattern. Any glass or pattern may be substituted. We suggest the Mosaic Glass Pack #8016 for a variety of colors.*

**Additional Need Materials**

<u>Item#</u>	<u>Description</u>
5532	Mosaic Mount Paper <i>or</i> Contact Paper
5163	Safety Glasses
5161pk	Dust Masks
5177	Black Ez Trace Marking Pen
5169	Scythe Stone <i>or</i> Glass Grinder

**Additional Materials:** Scissors, Paper Towels, Petroleum Jelly, Sand Paper, Measuring Spoon, Mixing Bowl and Spoons. You will also need all the tools and supplies discussed in the Mosaic Direct Method General Instructions Guide.

**Directions:**

*Refer to Delphi's Mosaic Indirect Method Instructions for more detailed directions.*

**Step 1 - Preparation**

1. Make two copies of a stepping stone pattern per student.
2. Outline the mold on Mosaic Mount Paper #5532 or clear contact paper (contact paper is available from craft suppliers and grocery stores). Note that the paper should be smooth, sticky and free of creases. Trim to fit.
3. Paper should fit closely inside the mold. Achieve a good fit by placing the trimmed paper inside the mold and running a pen along the sides of the mold wherever the paper needs to be further trimmed. Trim as needed and place paper to the side.
4. Using a paper towel, apply a thin coat of petroleum jelly along the inner edges of the mold.

**Step 2 - Glass Cutting**

1. The Mosaic Glass Pack #8016 provides an excellent selection of easy-to-cut stained glass. The variety of glass colors allows students to pick their own colors for the variety of stepping stone patterns.
2. After assigning colors to each pattern piece, cut pattern pieces inside the black lines to allow room for cement.
3. Trace pattern pieces onto the glass. Notice the grain line in some stained glass. Pattern pieces should follow the grain. (Example: leaf pieces in rose pattern should be placed on glass following the grain lines of the glass.)
4. Score and cut one section of the piece at a time. Use the cutter to score a light continuous scratch on the glass surface, extending from one edge of the glass to the other edge. Wear safety glasses.
  - a. A good score should look like a hair on the glass; a string is too heavy. Also, a good score has no breaks or gaps in it.
  - b. Heavy pressure is not required and in fact can cause a poor break of the glass.
  - c. Hold the cutter as you would a pen or pencil. Don't tilt from side to side, but keep the wheel perpendicular to the piece of glass. Drag your hand as you score to control the motion. Steering is from the elbow/shoulder, your wrist should remain motionless. Stand rather than sit while cutting.
  - d. You can either push or pull the cutter. To cut straight lines pull; for shaped pieces push so you can see the pattern lines.
  - e. Always score the glass on the shiniest or smoothest side. Make only one score at a time, break, than make the next score. Avoid running your score lines less than 1/2" from the side of the glass. Never back-up or re-score the same line.

5. Use running pliers to break out the glass piece. Line up the score with the indicator line of the upper jaw of the pliers, place pliers 1/4" to 1/2" over the glass edge.
  - a. Gently clamp down on the glass. Turn set screw until you feel it just touch the glass, then back off the set screw slightly (about a 1/4 turn) and squeeze.
  - b. Score line will break and the glass piece is cut.
6. Use breaker/grozer pliers to remove pieces of glass too small for running pliers. Place the pliers approximately 1/16" from perpendicular, parallel to the score line, with the flat jaw on top. Use your other hand to apply a two fisted grip and bend pliers down and away from the score.
7. To break off any burrs in the glass use the grozing side of the breaker/grozer. Using one hand to hold onto the glass, roll the serrated surface of the jaw over the edge, removing unwanted glass. To smooth out any large burrs in the glass, file with the scythe stone #5169 or glass grinder.
8. Carefully clean and dry the glass.

### Step 3 – Place Glass

1. Lay the glass pieces on the pattern. Place pieces slightly apart and in from the mold's edge to allow room for cement. Peel the backing off the paper and place over the glass pieces, being careful not to stick the Mosaic Mount Paper to the pattern paper.
2. Flip paper and place the glass/paper sheet in the mold, with glass facing up (see placement diagram below).
3. Adjust pieces as necessary and press them firmly onto the paper.



### Step 4 – Pour Cement

1. Mix Mosaic Outdoor Cement #2230 following the directions on the cement label. If you wish to color your cement, add cement colorants. Wear a dust mask while mixing cement.
2. Pour cement slowly and evenly into the mold. Do not move the mold while the cement is drying.
3. Tap the table underneath the mold and the sides of the mold for five minutes to release any air bubbles in the cement.
4. Wait approximately 1-2 hours (time may vary due to climate) for the cement to harden. The cement will warm as it hardens. Once it has cooled and set remove the stone from the mold. If using regular cement allow to set for 24-48 hours.

5. Remove the stone by turning the mold over and lifting up the edges of the mold.
6. Peel off the paper and clean off any excess cement covering the glass, using a paper towel or craft knife.
7. Fill in any remaining air holes by mixing up a small amount of the remaining cement into a paste and rubbing the cement into the holes in a circular motion. Marks or paper lines in the cement may be smoothed out with sandpaper.
8. Allow stone to cure indoors for 24-48 hours.

**For More Mosaic Instructions and Projects:**



**Tiffany Garden Item# 6316**

A best seller, use this inspirational book to create beautiful outdoor glass mosaic walkways. Includes a variety of patterns and complete easy-to-follow instructions - from making patterns to pouring concrete, installation, and care. Now the original book gets even better as it celebrates its 5 year anniversary with this special edition featuring **full-size patterns** for all designs. Featured shapes includes 16" hexagons and 4" x 8" bricks. Book by Bishop-Day.