

## Tempera Enameling

A “cold” technique that flows paint into embossed metal cells

### (art + history)

Enameling is an ancient art in which glass is fused to metal by firing. The glass melts, flows, and then hardens again when cooled. Its origins are unknown, but the ancient Egyptians, Greeks, Celts, and Chinese are all known to have practiced enameling techniques on jewelry, sacred items, and high-end handicrafts.

Many techniques have been developed over the centuries, but one of the oldest and most popular is known as “Champlevé” — French for “raised field.” In this process, troughs or cells are created on a metal object by carving into it or formed through a casting process. These cells are then filled with glass pieces or powders and then fired until fused. The city of Limoges in southern France became renowned for this style of enamel work during medieval times.

Relatively new “cold” techniques use glossy paint or epoxy resin on metal to simulate fused enamel.

In the classroom, an easy way to mimic the champlevé technique is to emboss a design into soft tooling metal, then fill the cells with glossy paint. Jazz Tempera is waterbased and dries with a high gloss finish. It flows into recessed areas and can be easily lifted with a damp paper towel. When dry, a clear acrylic spray or varnish can be used to seal it.

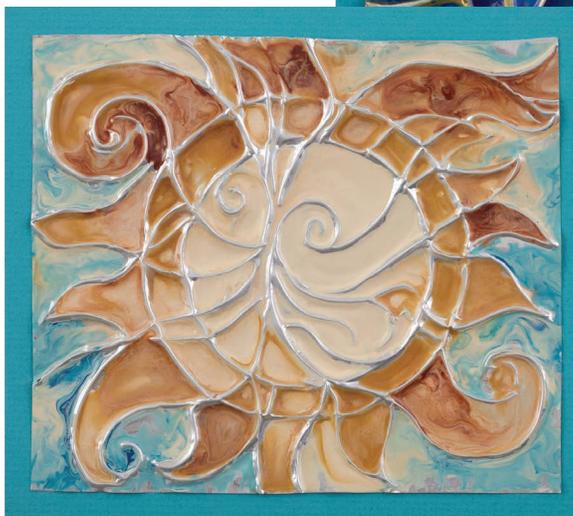
**GRADES 5-12** Note: Instructions and materials are based upon a class size of 24 students. Adjust as needed.

### Preparation

1. Cut down tooling foil into smaller pieces; 6" x 8" pieces = 74 per roll; 6" x 6" = 100 per roll; and 6" x 4" = 150 per roll.
2. Cut chipboard into pieces 1" smaller than the foil for each dimension. Example: if the foil is 6" x 8", the chipboard pieces should be 5" x 7".

### Process

1. Using a pencil, trace around the outer edge of the tooling foil onto a sheet of newsprint. Place the chipboard piece in the center and trace around it. Create a line drawing within the center outline. Keep in mind that these will be embossed lines, so it is important that they not be too small, too close together, or too complicated for tooling. Lines should create mostly closed shapes that will hold color, much like a stained glass window. Designs will be reversed, so avoid lettering and words.  
Cut out the sketch along the outer lines (it will be the same size as tooling foil).



### Materials (required)

**Two-Tone Tooling Foil**, Goldtone, 38 gauge (.004"), 12" x 25 ft (60504-4050); share one roll across class

**Jazz Gloss Tempera**, 16 oz, assorted colors (00014-); share a minimum of 3-4 colors across class

**Modeling Tools**, Liner (60500-1010); need one per student

**Blick All-Purpose Newsprint**, 8-1/2" x 11", 500-sheet ream (10204-1085); need one sheet per student

**Creativity Street WonderFoam Sheets**, 9" x 12", 10-pack (60947-1023); need one sheet per student

**Blick Scholastic Short Handle Wonder White Round Brushes**, size 6 (05857-1006); need one per student

**Maped Ultimate Scissors**, 5" ambidextrous (58470-1005); need one per student

### Optional Materials

**Amaco ArtEmboss Soft Metal Sheets**, medium weight, Black/Aluminum, 9-1/4" x 12", 12-pack (60518-2060)



## Process, continued

2. Tooling is a process that stretches soft metal. It is best to work on a cushioned surface that gives way as the metal is stretched into it. A sheet of craft foam or thick felt makes a good cushion.

**Caution:** Tooling foil has sharp edges and may cause small cuts if mishandled.

3. Place the foil on the cushion with the color desired for the back side facing up.

Place the drawing over the foil and secure it to the surface temporarily with masking tape. Use a pencil to trace the sketch, pressing down so that it transfers onto the foil below, but not so hard that it tears the paper. If desired, a ruler can be used to make sure edges are straight. When finished, discard both the tape and the sketch.



4. With the pointed end of the wood liner tool, retrace the lines on the back side, pressing deeply into the foil. Work an area of the design, then turn the sheet over.

5. Notice on the front side that the lines are now raised. The next step will press back down from the front side, creating areas of depth and stretching the metal even further. This is known as “chasing.” Leave the raised lines as they are, but press around them with the flat side of the wooden tool. At this stage, lines are not being created. The raised lines are defined by pushing the foil down between them and pressing the flat edge of the tool against them.

As it is worked, the foil is stretching and becoming thinner. It's common for small tears to form. These can be repaired by placing a small piece of masking tape on the back side. These tears will likely be hidden when paint is applied.

6. When the design has been embossed, color can be added. Apply a generous amount of tempera on the front side, making sure the recessed areas are filled. It's not necessary to remain between the raised lines with the color; in fact, it's better to paint over them! Tempera will naturally flow into the lower areas of the design and away from the raised areas. If lines remain covered, remove them in the next step.
7. Allow the paint to dry for several hours or overnight. Paint must be completely dry — not tacky. The length of drying time needed depends on the thickness of the application. When dry, take a damp cloth or paper towel and gently wipe the surface. Try to wipe the raised metal only. This will remove any excess paint and bring back the glow of the metal. Take care not to wipe the painted areas as this may make the glossy surface matte or remove more color than desired.
8. Turn the metal over and place the chipboard so that it aligns with the edges of the artwork. With scissors, snip a diagonal line from the corners of the foil to the corner of the design. Fold the edges up over the back of the chipboard and tape or glue it in place.



**Step 1:** Create a line drawing and transfer it to the back of the foil sheet by tracing.



**Step 2:** Using a wood liner tool, retrace the line drawing, pressing deeply into the metal. Turn over and “chase” from the front side.



**Step 3:** Flow tempera paint into the recessed areas and allow to dry. When dry, a damp cloth can be used to clean away excess paint.

### Process, continued

9. A clear, glossy acrylic spray can be applied to seal and protect the waterbased tempera.

### Options

- Use copper or black colored foil for a variety of effects.

### National Core Arts Standards - Visual Arts

#### Creating

**Anchor Standard 1:** Generate and conceptualize artistic ideas and work.

#### Creating

**Anchor Standard 2:** Organize and develop artistic ideas and work.

#### Connecting

**Anchor Standard 11:** Relate artistic ideas and works with societal, cultural, and historical context to deepen understanding.

