

TWISTED VESSELS

Exploring Industrial Processes to Create Unique Extruded Vessels

by Michael Sprague

An extruder is a machine which pushes or draws certain materials through a cross-sectional die to form specific shapes. Commonly extruded materials include metals, polymers, ceramic clays and food stuffs such as pasta. In ceramics, the use of extruders can be traced back to 1619 when an Englishman named John Etherington built the first hand-operated extruder for creating bricks. Extruders are still used today for the manufacturing of ceramic roof, wall and floor tiles, bricks and in the most basic form, for pugging, de-airing and forming clay into consistent blocks that fit into boxes for shipping!

Ceramic artists use extruders today for creating consistent coils, slab strips, test tiles, and irregular continuous shapes for hand-building complex forms. Artists using ceramic extruders in their studios include Diana Pancioli, Randy Johnston, and David Hendley. Each artist uses the simple extruding tool developed for industry to transform clay into personal and expressive forms.



These vessels were glazed with AMACO® glazes MF-20 Dark Blue over LT-113 Sand (left), MF-40 Dark Green over LG-36 Freckled Brown (back), ST-25 Blue-Gray over LT-3 Old Pewter (front), and LT-161 Tiger Eye over ST-23 Light Blue (right).



Textured Alligator
LT-161 Tiger Eye layered
over Stone Texture
ST-23 Light Blue

National Visual Arts Standards

- Understanding and applying media, techniques, and processes.
- Understanding the visual arts in relation to history and cultures.
- Making connections between visual arts and other disciplines.
- Students will use knowledge of structures and functions.
- Students will reflect upon and assess the characteristics and merits of their work and the work of others.

Instructions



1. Load 2" square die, 1 1/2" interior die and spider into extruder end cap. Shape and load clay into extruder. **TIP:** Less space between clay and wall of extruder barrel equals less air bubbles in extrusion.



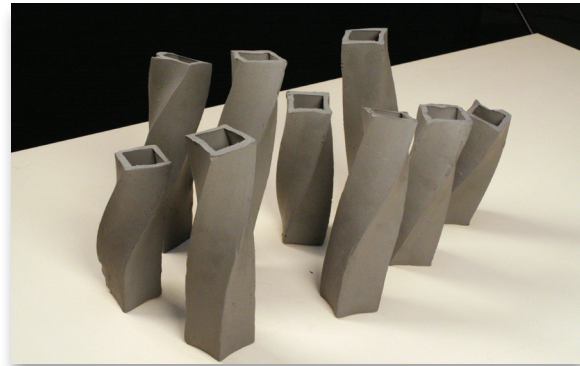
2. Pull down on the lever of the extruder with one hand, while twisting the clay as it exits the end cap with the other hand.

Tools & Materials

- Low Fire (Cone 05) Clay (choose one)
AMACO® Versa Clay No. 20 (45030R) (all glazes)
AMACO® White Art Clay No. 25 (45015Y) (all glazes except Magic Flow)
- brent® Clay Extruder (22627H) or
brent® Clay Extruder HD (22863X)
- brent® Clay Extruder Hollow Die Set (22629K)
- AMACO® Low Fire Glazes (Cone 05)
Artist's Choice Glazes (A)
Gloss Glazes (LG)
Magic Flow Glazes (MF)
Stone Texture Glazes (ST)
Textured Alligator Glazes (LT)
- Wire Clay Cutter (11017N)
- Fettling Knife (11192H)
- Hardwood Rolling Pin (11196M) and
Hardwood Thickness Strips (11190F)
- Hardwood Pony Roller (11198T)
- Synthetic Sponge (11239J)
- Fitch Fan Brush Series 28, No. 4 (11182B)
- Ruler or AccuAngle (11297V)
- Bowl of water (to make slip)

Lesson Plan Goals and Objectives

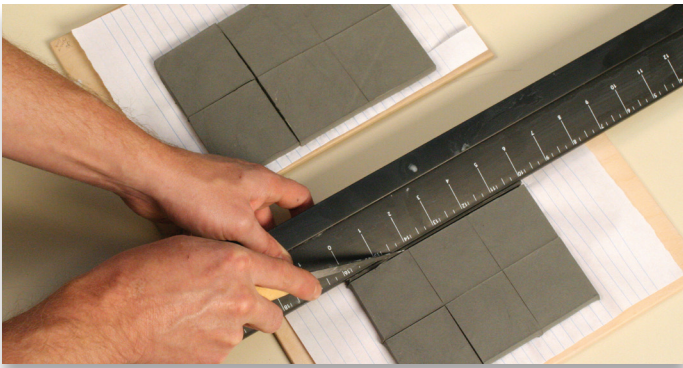
- Students will create fun, functional twisted lidded jars or they can explore creating a series by varying the height of the same form.
- Students will learn to extrude and hand build with clay.
- This lesson shows one of the possibilities using the clay extruder.
- This lesson is suitable for 4th graders to adult.



3. Use wire cutter to slice extrusions at 6" to 12" intervals from the end cap. Stand cut extrusions on a table to dry until leather hard (about 1-2 hours) or wrap in plastic to use during next class period.



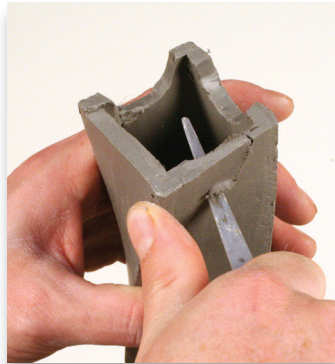
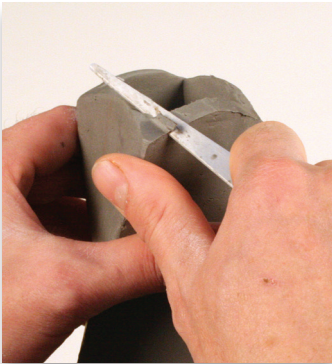
4. Roll slabs for tops and bottoms of the vessels. Make slabs the same thickness as the walls of extruded pieces. Allow to dry until leather hard.



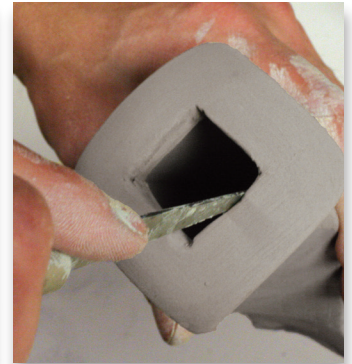
5. Cut one slab into 2" squares (bottom) and the other into 2 1/2" squares (top). Set aside. You will use one of each size for each vessel. Cover squares with plastic so they don't get too dry.



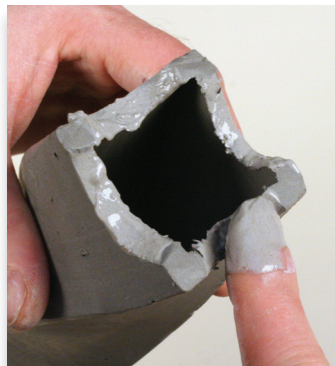
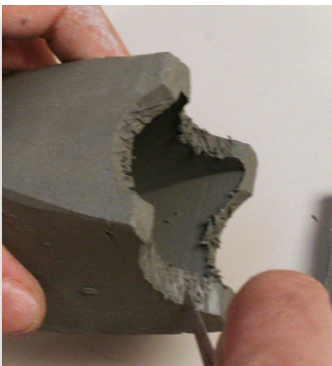
9. Round and smooth the corners of a 2 1/2" square with a wet sponge. Score and slip the top edges of the extruded piece, then add the slab to the jar. There should be a slight overhang.



6. Choose one of the extruded pieces and cut to size to square up the top and bottom ends. Carve the top into a slight arch. Cut deep arches on the bottom sides so the four corners become the feet.



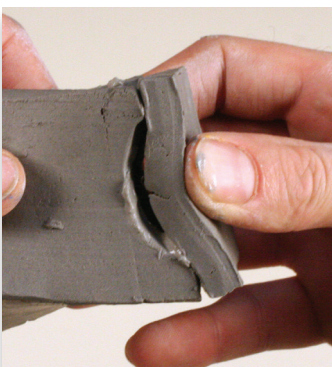
10. Use the Pony Roller to roll lightly over the slab to make it tight and conform to the arch. Cut a 1" square out of the center.



7. Score and slip the bottom edges and attach the bottom slab (one of the 2" x 2" squares).



11. For the lid, roll out clay 1/8" thick. Cut out 1" and 1 1/2" squares (one of each size needed per lid).



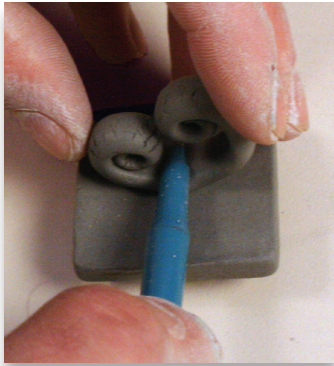
8. Push bottom slab up into the arches with thumb. Roll fettling knife handle along the edges to reinforce the seam. Trim any excess clay, then smooth the edge with a wet sponge.



12. When leather hard, slip and score one side of the 1" square center and attach it to the center of the 1 1/2" square.



13. For the handle, roll a clay coil approximately 3" long tapered on the ends. Pick up the coil and slap it down onto the table to create one flat side. Roll up each end of the coil, flat side up.



14. Slip and score the center of the lid top and attach the coil handle. Use a pencil or pen to press the handle on firmly.



Magic Flow
MF-66 Burnt Orange
over Artist's Choice
A-66 Burnt Orange



Bisque fired Versa Clay No. 20 ready for glazing. Versa Clay is white after firing.

15. Firing. Allow pieces to dry completely, then bisque fire to a mature Cone 04.

16. Glazing: Brush on 3 coats, tapering the third towards the base of the piece. If layering with Magic Flow glazes, apply two additional coats over the top third of the pot. Do not use Magic Flow glaze on the lids or inside of the piece as it runs/flows. Wipe all glaze off the feet so they will not stick to the kiln shelf. Glaze fire to Cone 05.

Note: Use Kiln Shelf Wash on your kiln shelves to prevent sticking. Do not fire with the lids on the vessels or they will stick together.

Glossary

Bone-dry: Final stage of greenware, completely dry and ready to be fired. Clay is very fragile, non-plastic and porous at this stage.

Extrusion: A form produced by forcing materials through a die.

Glaze: A mixture of ceramic materials including clay, silica and fluxes that forms the protective and decorative coating on the surface of pottery when subjected to high temperatures in a kiln.

Leather-hard Clay: Stage between wet and dry clay. The clay is stiff enough to support its own weight, but pliable enough to be bent and worked with.

Slip and Score: Process of joining 2 pieces of clay by texturing each piece slightly with little cuts where they will be joined then applying slip (watered down clay) or vinegar and pressing together to form a strong bond.

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