

1505-2

Nate Perea shows how to make lampwork beads.

Watch the video for this project online at:
<http://youtu.be/7XCL8L3PfrY>

For more information visit:



Products. Service. Know-how.
Sharing your passion for making jewelry.

www.riogrande.com

Please continue to page 2 for project instructions.

Guest:



Nate Perea

RIO GRANDE®

Since 1944

Sharing your passion for making jewelry.
Products. Service. Know-how.

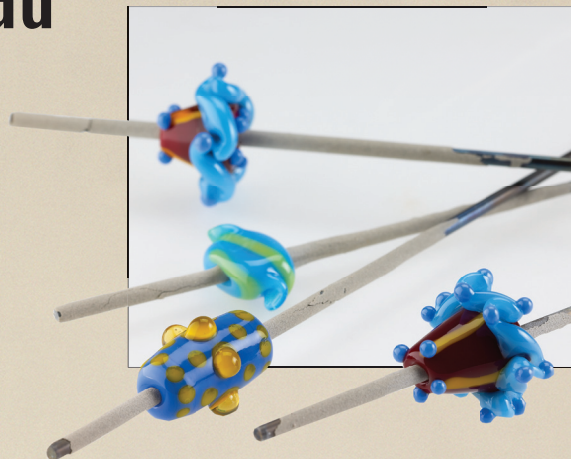
Making A Lampworked Bead

Working with glass gives you a whole new medium and a bright new rainbow of color to work with! Once you understand how glass works and how to take the right precautions using the torch and handling your glass, you'll be surprised to find how wide your design horizons become.

Steps:

1. Prepare mandrels by dipping the top 4" or so into a bead separator and allowing them to dry.
2. Light your torch and adjust the flame as needed.
3. Select a glass rod and warm it in the flame by dipping it rapidly in and out of the center of the flame.
4. At the same time, warm a coated and dried mandrel at the far end of your flame.
5. When the glass begins to droop, lay the end of the glass on the mandrel and slowly twist the mandrel away from you, laying a ring of glass around the mandrel.
6. When the ring is complete, gently press the end of the rod to the ring to create a separation point and pull it away and out of the flame. Keeping the mandrel and glass bead turning in the flame, set the glass rod on a heat-proof surface to cool.
7. Keeping it horizontal, hold the mandrel in the flame, turning it constantly and moving it in and out of the flame until the bead is smooth, round and even.
8. Set the mandrel and bead in the kiln to anneal (set at approx. 960°F and allow 15 minutes for each ¼" thickness of glass). After annealing, turn off the kiln and allow the bead to cool completely inside the kiln.
9. After cooling, the bead should slide easily off the mandrel. If needed, you can use a little water to remove the bead separator.

⚠ **CAUTION!** Always wear eye protection when performing these processes.



Flameworked glass beads
by Eleanore Macnish

Safety/Setup

- **Workbench and seat**—Choose a stable and heat resistant surface or bench and a chair that allows you to work comfortably over the torch.
- **Ventilation**—There should be a nice cross-draft in the room, possibly fans pulling and pushing air past you.
- **Protective glasses**—Wear protective glasses to protect yourself from popping glass and soda flare.
- **Hair and clothing**—Keep long hair tied back; no loose clothing.
- **Protective apron**—Wear a protective apron to shield against popping glass; a cotton apron can also be used to clean your glass rods.
- **Flame awareness and hot glass on the table**—Be aware of the hot areas created by the flame. Make sure to set all heated tools and glass rods down with their heated ends facing away from you.
- **Be sure you're using glass with the same COE**—The COE (coefficient of expansion) must be the same throughout each bead, otherwise the different rates of expansion will create stress in your cooling bead, causing it to crack or shatter.

See next page for supply list and additional information.

Tools

- **Mandrels**—When mandrels are new, they will have a small amount of oil on them. To prepare them for use, place them in a kiln set to 600°F for 30 minutes. After you've used a mandrel, just give it a light scrub with a ScotchBrite™ or other scouring pad and it is ready to use. Take care not to bend mandrels; building and removing beads from a bent mandrel can be very difficult.
- **Bead separator**—Always coat your mandrels with bead separator and be very sure they are completely dry before using them. You can set dipped mandrels in your kiln to speed drying.
- **Torches available**—Minor Burner (4000°F) is a surface mixing torch, meaning that the fuel (propane) and oxygen enter the torch handle separately and mix at the surface of the torch tip. This method can achieve a hotter flame and deliver greater control over the flame. The Hot Head (3000°F) is a pre-mix type, meaning that the fuel (Mapp or propane) and oxygen mix before they get to the surface of the torch tip. Do a bit of research to find the right make and type of torch for you.
- **Marvers/paddles**—These are graphite tools used to shape hot glass; they are torch-mounted or hand-held.
- **Rakes/tweezers/shapers**—These tools are used to form and shape hot glass in a great variety of ways.
- **Kilns**—Kilns or ovens are used to pre-heat mandrels and anneal finished beads so they cool without breaking; some have a special bead door that allows you to set your mandrel inside without having to open the large door and lose a great deal of heat from the kiln.

Glass

- **COE**—Each piece of glass used in a single bead must have the same COE. Glass cools and contracts at a specific rate; if a single piece is made using glass with different COEs, the internal stress caused by different rates of contraction results in cracked or shattered glass.
- **Annealing**—As you're melting and shaping your glass, you are creating stress inside the bead. In order to have a strong, stable bead, you must relieve that stress by annealing the finished piece before letting it cool. Annealing is the process of bringing the piece to a temperature of approx. 975°F in a kiln and cooling it slowly inside the kiln. This process ensures you have a strong stable piece that is ready to wear or sell. Beads can be annealed on the mandrel or batch annealed.

- **Fiber blankets**—Fiber blankets act as an insulator, allowing beads to cool without cracking; however, these products do not anneal or remove the internal stress from the bead. Beads still must be annealed in a kiln.

Supplies:

Order #	Description
703-118	Kiln with bead door
500-001	Hot Head torch kit
500-116	Surface for Hot Head torch
500-103	Marver for Hot Head torch
500-110	Nortel Minor Burner torch
500-112	Marver for Minor Burner
119-011	Mandrels, 3/32"
119-037	Mandrel, 12"
119-038	Mandrel, 16"
119-031	Thimble mandrel
119-026	Puffy mandrel
119-017	Mashers
119-009	Shaping tool
119-052	Mandrel, 2-hole
119-059	Hemostats
701-409	Graphite paddle
119-045	Hot Fingers bead holder
119-021	Glass cutters
119-020	Tweezer masher
500-238	Safe-D-Tect leak detector, 8 oz.
503-025/15	Torch striker with flints
701-406	Bead separator, 4 oz.
201-055	Ace safety glasses (economy frame)
201-056	Ace safety glasses (wrap-around frame)
113-173	Cotton apron
629-763	Brass silver-plated bead bar with ball end
629-356/12	Pewter rhodium-plated pendant bail (solid bail)
629-355/12	Pewter rhodium-plated pendant bail (ring)
629-354/12	Pewter rhodium-plated pendant end
340-001*	Uroboros System 96® glass rod assortment
—	Jars of sand
—	Fiber blanket

*Rio Grande carries a wide array of glass rods; see our selection at riogrande.com