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Technology Then and Now 2: Glass Beads

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Glass Beads

People at Fort St. Joseph used glass beads to embellish their appearance in the eighteenth century.

PRODUCTION CENTERS

Europeans began making glass beads in Murano, Italy in the eleventh century, and the practice spread to Amsterdam and Paris by the seventeenth century. These manufacturing centers produced many of the inexpensive glass beads that were distributed in North America, include those found at Fort St. Joseph.



This image, originally taken from Denis Diderot and Jean Le Rond d'Alembert's Encyclopédie, depicts a small-scale glass factory in France. The workers are utilizing a wood-fired furnace to complete the final steps in shaping a goblet.

PRODUCTION METHODS

There were two primary methods used to produce glass beads.

- In the drawn method, a molten bubble of glass was stretched into long, thin tubes. Once the tubes cooled, they were cut into small segments before they were rolled in barrels of sand or ash to smooth their rough edges.
- Wire-wound beads were made by winding a string of molten glass around a copper or iron wire (known as a mandrel) until the bead reached the desired size.



Example of a French glass manufacturer. The image depicts a fundamental component of eighteenth century glass production: a wood-fired furnace, which produced the high temperatures necessary for glass manipulation. Photo courtesy of Denis Diderot and Jean Le Rond d'Alembert's Encyclopédie.

"I analyzed 45 beads from the site, including 21 dark blue, 5 opaque blue, and 19 turquoise blue beads. These can be sorted into two recipe groups that correspond to age: pre-1700 and post-1700. 37 of the beads are in the latter group, while 8 are from the pre-1700 group."



Dr. Heather Walder conducting compositional analysis of glass beads found at Fort St. Joseph. Photo courtesy of Heather Walder.

ARCHAEOLOGICAL ANALYSIS

Archaeologists rely on a number of techniques when analyzing artifacts like glass beads. Visual analysis is sufficient when determining the raw material, such as glass or shell. However, differences in chemical composition can be used to determine the age of the beads because the glass "recipes" changed over time. Archaeologists can use Laser Ablation-Inductively Coupled Plasma-Mass Spectrometry (LA-ICP-MS) to establish age and then trace trade patterns and population movements to learn how diverse groups interacted.

(Left) The wire-wound beads above are recognizable by their spherical shape.

(Right) Examples of glass beads produced using the drawn method, which exhibit a long, cylindrical shape.

FASHION

Both the French and Native Americans desired glass beads at Fort St. Joseph. They used them to decorate textiles, bags, and moccasins. The varying size and color of the beads were used to create intricate, eye-catching designs. The practice of using beads to enhance clothing and textiles continues today.



Example of glass bead embroidery on a pair of eighteenth-century Native American Ojibwa leggings. Photo courtesy of the Museums of the Fur Trade.

BECOME A JUNIOR ARCHAEOLOGIST

One of these beads is made of glass and one is made of shell: Can you tell the difference? (find the answer at the bottom of the banner)



Left - Shell Right - Glass

