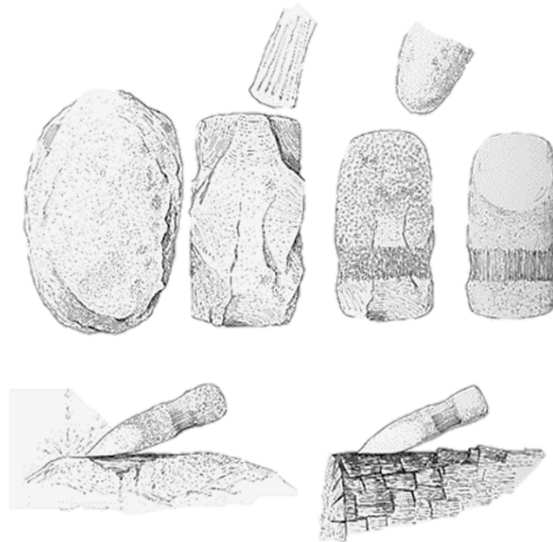


**Summary Data for the Grooved Axes Depicted in the 2022 Pennsylvania
Archaeology Month Poster
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Over the past 15,000 years, the Indigenous peoples of Pennsylvania used several different types of axes. Archaeologists have identified one type, the grooved axe, based on the technique for hafting the axe to a handle. The axes on the Pennsylvania 2022 Archaeology Month poster were chosen from The State Museum of Pennsylvania, Section of Archaeology collection as interesting and/or representative examples of the various grooved axe types. Precontact grooved axes can be characterized based on the type of groove such as full grooved, $\frac{3}{4}$ groove, and slant groove which is a sub-category of both the full and $\frac{3}{4}$ groove type. (see diagram from Adams 2002)

Grooved axes were made from a hard dense material. The most common lithic material type for axes from eastern Pennsylvania was graywacke, followed by diabase with hornfels-argillite and sandstone as the third most commonly used stone. The stone used to make an axe could be collected directly from a bed rock formation, but many were made from a river worn cobble. The cobble origin has been demonstrated by the presence of the water worn surface common on finished axes.

Grooved axes were produced through a process of pecking (hammering on the surface of the rock, which removes small pieces of rock), grinding against a piece of sandstone, polishing with a fine-grained piece of sandstone, and possibly by rubbing against a charcoal covered log.



In the following list, each axe is identified by the type of groove, lithic material, weight, and length with a short note on specific characteristics. As noted in the comments for each specimen, there is variation in the size and weight. The variation is partially related to the specific function/needs of the maker, the shape of the original cobble and over time, through re-sharpening the damage to the axe and dulling of the bit from use.

	<u>Catalog#</u>	<u>Description</u>	<u>Material</u>	<u>Weight</u>	<u>Length</u>
1.	36La/4	trade axe	iron	997.7 gr.	18.5 cm.

Iron axes, traded from the Europeans, were of great importance to Native Americans; so much so that they were less frequently included as grave offerings. This example is relatively heavy, with an oval eye suggesting it dates to the Schultz phase of the Susquehannock culture or about 420 years ago(1600AD).

2.	J.200.2	full groove	graywacke	746.6 gr.	18.2 cm.
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The surface of this specimen is extensively pecked, and the bit is the only section that has been partially polished. It is made from a graywacke river worn cobble, the most common lithic material for full grooved axes. Sufficient cortex is present on the surface to estimate the original size of the river cobble at approximately 2.5 - 4.6 cm in thickness. This is a rather long specimen, about 4 cm longer than average.

3.	36Pa/197.88	¾ slant groove	hornfels-argillite	1756.9 gr.	27.9 cm.
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This axe is pecked over 98% of its surface with minor chipping around the edges of the blade and poll end. Slant groove and ¾ groove axes are the largest axes in size. This specimen is nearly twice the length of all axes and over twice as heavy.

4.	E.1.12	¾ slant groove	basalt	2266.9 gr.	38.9 cm.
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The blade of this specimen is extensively pecked, but the poll end is characterized by extensive cortex indicating the original thickness of the cobble at about 4.5 cm. in thickness. About half of the bit is polished. This specimen is one of the largest in the collection, nearly twice as heavy and three to four times as long as other axes.

5.	PaO/1.8	full	basalt	1043 gr.	19.2 cm.
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This is an interesting example of minimal work to produce an axe made from a cobble. This elongated flat, river worn cobble is mostly covered with the original cortex with only the groove, bit, and poll end exhibiting minor evidence of pecking and chipping.

The bit is polished. The length of the poll end is twice as long compared to the average poll length on other axes.

6. 36Pa/212 double grooved hornfels/argillite 740.0 gr. 17.8 cm.

Double grooved axes are very rare with only two complete double grooved axes recorded from the State Museum collection. This specimen is pecked over its entire surface with polishing only found on the bit end. The reason for the double groove is unknown. Some have hypothesized that over time, the bit end wears down through damage and resharpening and the haft needs to be readjusted for the overall balance of the axe. However, this specimen is both relatively long and heavy for the full grooved category, suggesting it does not seem to have been significantly reduced in size and thus requiring a re-balancing.

7. 36Le180/1.35 full diabase 576.1 gr. 10.58 cm.

This is one of the smallest full grooved axes in the State Museum collection. It is also unique in that it is polished over its entire surface and undamaged. Perhaps it was fashioned for a small project, for a young person or it was resharpened frequently over a relatively long period of time resulting in this size.