

LAB PROCEDURES GUIDE

Washing and Numbering

A - Washing: The artifacts come in from the field in brown paper bags. Each bag is marked with the pertinent provenience information for the assemblage within, and this information is repeated on the ER card found inside the bag. This card should remain with its assemblage until the cataloguing stage. *If the card is missing, rip off the section of the paper bag with the provenience information and keep that with the assemblage.* Most artifacts are washed by hand with the aid of a toothbrush and a Tupperware container full of water, although the main artifact bag may include smaller bags and film vials containing material that should not be washed. The lab supervisor or another staff member may also give you instructions not to wash a specific artifact or type of artifact. ***If in doubt, ask.*** Never work on more than one artifact assemblage at a time, and be sure to note in the appropriate log-in book that the assemblage has been washed, ***putting both your initials and the date the washing was completed.*** Be very careful and check the sink, Tupperware container, countertop, and drying rack for any stray artifacts left behind - artifacts without provenience are useless.

B - Drying: Once the washing is completed, the artifact assemblage is transferred to the drying area using trays (found under the sink counter). More than one assemblage may be placed in the drying area at one time, but under no circumstances should assemblages be mixed on a tray. The amount of time needed for a group of artifacts to dry varies according to the materials present, but it is usually safe to assume that the assemblage should be left overnight.

C - Numbering: Numbering is quite straightforward, but because of its importance, extra care should be taken to follow the correct procedure. Note: be very careful not to lose any artifacts when pulling trays from the drying area.

1 - How to number: After the artifacts have dried, they are removed from the drying area and numbered. Keep the ER tags with the trays. Once again, never mix groups of artifacts from different proveniences. To number, apply a thin coat of “hard as nails” brand nail polish to the artifact and wait until dry. Write the ER number using a small nib pen and India ink. After the ink has dried, apply an additional coat of “hard as nails” nail polish and wait until dry. Depending on the project, the number should be written as follows: “Unit”-“Level”. Examples: "125A ". With certain dark bodied artifacts it will be necessary to use white India ink instead of black. The question of where to number is matter of debate, but at Millersville University we currently number on the body of the artifact, not on a break. As a general rule, try to number on an area that would not show if the item were to be displayed, i.e. bases, interiors of hollow items, undersides of flat items. Glass bottles should be numbered on the exterior. If in doubt as to which side of the glass is the exterior, ***ask.*** Never number over a decorative feature except as a last resort - although it is still preferable to numbering on a break. And remember... the most important consideration is legibility; if anything goes wrong, remove the number with

acetone and start over! Once the artifacts have been numbered they are placed into plastic bags. Follow the procedure outlined in section Bagging and Storage.

2 - What to number: All ceramics, all glass (except window glass), and sturdy bone artifacts should be numbered. Stone objects should be numbered if cultural (mortar should not be considered stone for this purpose). Buttons and most other recognizable metal objects (excluding nails) are given tags with the ER number on them. Coins are the main exception; if they are pre-20th century, place them in a small plastic bag with the provenience information written on the exterior and place a tag with provenience information inside the bag. Nails, fragile bone, charcoal, metal chunks, iron slag, cullet, and window glass should be counted and placed in a plastic bag. This bag will be given **one** artifact number, although the quantity of the artifacts it contains will be noted in the Access database. Occasionally you will have an object that for some reason or another cannot be numbered (for example, if a ceramic sherd is too small to write legibly on). In this case, place that artifact in a small plastic bag and label the bag with the pertinent information.

Cataloguing

This year cataloguing will be done concurrently with artifact cleaning. Freshly cleaned and dried trays will be numbered and label as described above and the information about these artifacts catalogued for later data entry. The cataloguing of artifacts is not a particularly complicated procedure, although it does require a certain familiarity with the various materials found at Elizabeth Furnace. Previously, the laboratory supervisor and trained volunteers are the only ones to catalogue material. This year however, students will be asked to catalogue, as part of your field school training. The following are some general guidelines to help you. Firstly, familiarize yourself with the material culture present at Elizabeth Furnace. Past excavations have yielded an extensive comparative collection which is housed in the lab. We will provide you with an artifact field guide; this and other reference guides will be provided to you to help you identify artifacts. If you are unsure about what an artifact is, ask. It is better to ask and learn what something is, than to guess and be wrong. Guessing only serves to make you look foolish, skews the information in the database, forces the lab supervisor to double check your work, and thus incur his wrath.

Before cataloguing the various types of artifacts, you may find it helpful to divide the artifacts by material and then sort them into piles of identical or near identical patterns, designs, manufacture techniques, etc. For example, bone and metal buttons should not be grouped together, transfer printed plates should be divided by print if possible (not to mention by ware), and certainly should be divided by form. Artifacts will be numbered with a unique artifact number, and its pertinent identification information logged into the database log book. It is impossible to list every artifact eventuality you will encounter. However, identification guides and reference materials are in the lab to aid in the identification process. Examples can be found in the material already in the database, and if in doubt, ask.

Once sorted, artifacts are numbered with unique ID numbers. These numbers are found on inventory sheets in the lab. The identifying information is recorded on these charts with the context and level information. The corresponding ID number is then written on the artifact under the Unit and Level information. In this way each artifact is permanently marked with an ID

number and the information of that single artifact is preserved in a hard copy inventory, which can then be transferred into the Microsoft Access Database. For the purposes of compatibility the database and the inventory sheet have the same format.

ID	Site Name	Unit	Level	N	E	Material	Type	#	Form	Body Color	Glaze Color	Dates
10262	Elizabeth Furnace Plantation	109	D	220	200	Ceramic	Annular Pearlware	1	Undetermined	Buff	White	1790-1820
10353	Elizabeth Furnace Plantation	109	D	220	200	Ceramic	Annular Pearlware	1	Undetermined	Buff	White	1790-1820
10450	Elizabeth Furnace Plantation	109	A	220	200	Ceramic	Annular Pearlware	1	Holloware	Buff	White	1790-1820
11115	Elizabeth Furnace Plantation	132	C	200	250	Ceramic	Annular Pearlware	1	Holloware	Buff	White	1790-1820
11116	Elizabeth Furnace Plantation	132	C	200	250	Ceramic	Annular Pearlware	1	Holloware	Buff	White	1790-1820

The Database: The database contains a variety of features in addition to the basic catalogue. Each section of the database record will be listed separately. A list of appropriate terms can be found adjacent to the data entry terminal and can be found in the appendix of this manual as well.

Artifact ID #: The artifact ID # refers to the number assigned to one artifact or a group of artifacts during cataloguing. This number will be written directly on the artifact itself. This is done so that each artifact can be uniquely identified in a database query.

Site Name: Refers to the name or site number assign to the excavation. For current excavations, this will be *Elizabeth Plantation*.

ER unit: This refers to the number assigned to the unit from which the artifact was found.

Level: This refers to the stratigraphic level in which the artifact was found. This information is part of the artifacts provenience.

Feature: If this artifact came from a feature, check the box. This information can be found on the associated ER sheet and artifact catalogue.

Northing: Refers to the provenience of the unit from which the artifact was recovered. (Example: N200 E205). The northing and easting are a reference to the unit's location to the datum point designated for the site.

Easting: Refers to the provenience of the unit from which the artifact was recovered. (Example: N200 E205). The northing and easting are a reference to the unit's location to the datum point designated for the site.

Material: Enter the artifact material that applies to the object. This includes "bone", "ceramic", "glass", "metal", "organic", "stone", "plastic", etc.

Type: Enter the specific type, or in the case of ceramics, the ware type. Examples include "creamware", "bone", "iron", and "hand blown glass". For a complete list of examples, refer to the terminology log or use the form entry option in Access. In Access the material may be chosen directly from this list.

Quantity: Quantity refers to the number of artifacts to which one individual artifact identification number refers. For example, all the brick from one unit may be put in one bag and given the artifact ID number "01782." If that bag of brick contained 8 separate pieces of brick, you would put 8 for the quantity. Conversely, if you are entering a single piece of ceramic you would enter 1. In short, this field refers to the number of artifact assign to one artifact ID number in the database.

Form: Essentially self-explanatory. "Flatware", "holloware", "cup", "nail", and "bottle" are just a few examples. As with material, a complete list of the available categories may be obtained by checking the terms list or using the form entry feature in Access. Try and designate a form whenever possible; placing a question mark after your identification is an acceptable way of showing uncertainty. In cases where identification proves impossible, use the time-honored "flat" or "hollow". The slash marks the place where the fragment type which sets the vessel type is listed, and includes such types as base, rim, handle, spout, and lid. If you are not sure what to put, then leave this space blank.

Body Color: Refers to the color of the primary material of which the artifact is composed. For glass, this is the color of the glass itself. For materials like ceramic, body color refers to the color of the fired clay body. For ceramics, a list of body colors has been compiled and is available in the lab for use. Do not use this field for metal materials.

Glaze Color: This field refers to ceramic artifacts that have been glazed. This does not refer to the color of the transfer print or design, but rather to the base glaze applied to the ceramic. In the cases of pearlware, whiteware, ironstone etc. this will be a white glaze. Information about the specific colors of designs and prints on a ceramic should be entered in the "Notes" field.

Dates: This field allows you to enter the date range for all dateable artifacts as appropriate.

Notes: This section will only be used occasionally. Use it to enter detailed information on interesting artifacts. This is where you will specify any information about a Transfer print design, a shell edge design, annular design, etc. Always list any maker's marks found on ceramics or bibliographic references to that artifact. Notes about crossmending should also be detailed here.

Bagging and Storage

Once the artifacts have been numbered, they should be stored in plastic bags. Write the provenience on the bag using a black Sharpie marker. The full provenience (project name, site name, unit number, etc.), date, and excavator information need only be written on the context bag (see below). The full bagging procedure is as follows:

A - Ceramics: Each ceramic type - porcelain, whiteware, pearlware, creamware, redware, yellowware, delft/tin glaze, ironstone, etc. - should go in separate bags. 'Refined' stonewares (black basalt, red bodied, "pseudo-Jackfield" etc...) should also be bagged separately from 'coarse'

utilitarian stonewares. The individual bags are then placed in a larger ceramics bag. Flowerpots may be bagged with the domestic ceramics, but bag them separately from the redware when practical. *If unsure, ask the lab supervisor.*

B - Glass: Window glass is to be bagged separately from other glass artifacts, as is lamp glass, bottle glass, and mirror glass. If possible, bag the glass according to color and form. This may seem unnecessarily detailed but it will be beneficial during vessel reconstruction. Place the bags into a combined 'glass' bag.

C - Metals: Nails are to be bagged separately from other hardware and tools, which are then placed into a main "metals" bag.

D - Biological: Bone and shell are to be bagged separately and then placed in a combined biological bag.

E - Architectural: Bricks, mortar, cement, etc., may be safely placed in a common bag. Ceramic objects such as tiling, drainpipe, insulators, along with certain glass items such as insulators, should be placed together in a separate bag. A combined architectural bag should be prepared when necessary.

F - Small Objects: In many cases, you will have small objects - coins, buttons, cutlery, pins, etc. - that you may think deserve further study or might be damaged if placed in a larger bag. First of all, check the study collection guidelines to see if the artifact in question needs to be pulled. If not, it may be appropriate to place the artifact (or artifacts) into individual bags before placing them into their material bags. In certain rare cases, you may wish to consider placing the object in a film container, but this should only be done in exceptional circumstances.

G - Other: Under most circumstances, plastic and stone objects can go into their own respective bags. Certain very large and/or heavy objects should also be placed in separate bags in order to avoid damaging smaller, more fragile artifacts. Other situations will no doubt arise - clay pigeon fragments, for example, should be given their own bag. *As ever, if in doubt, ask.*

H - Final bagging and pre-cataloguing storage: Once the various bags have been prepared, please put all provenience information (ER number) in the upper right corner of the context bag, leaving enough space from the top that the information will not be rubbed off as the bags are opened and closed. *Be sure to place the heavier, bulkier artifacts in the bottom of the bag so the smaller artifacts do not get crushed.* In some cases, it will be necessary to remove the ceramics and perhaps the glass for crossmending.

Once the bagging is finished, the bags should be stored in boxes to await cataloguing. Bags are stored in boxes sequentially according to project and ER/SR number until the box is reasonably full. Be sure that a box label listing the relevant ER or SR numbers is affixed to the exterior of the box. All boxes of un-catalogued material are to be placed on the "To Be Catalogued" shelf in the storage room.

Minimum Vessel Count

This is quite possibly the most contentious lab issue. A variety of potential vessel count systems exist and many of them are not necessarily compatible. At Millersville University, we have so far used two different count systems as the circumstances demanded. In one instance, ceramics were separated by ware, decorative technique, and form. These sub-categories were then further divided by rim and base. Whichever of the latter two categories had the highest number of vessels became the minimum vessel count for that decoration and form. Unique body sherds with no rim or base were also included. For example, assume that a shell edge pearlware assemblage is being examined, and that said assemblage consists of 5 plate rims, 3 plate bases, 6 saucer rims, 10 saucer bases, and a single tureen lid sherd. The counts would be 5 plates, 10 saucers and a tureen, for a combined total of 16 shell edge pearlware vessels.

If ceramics are highly fragmented, the use of a somewhat different vessel count system is necessary. Vessels are still divided by decoration and form, but this time only rims and unique body sherds were used in the count. The latter system is currently held to be preferable, but consideration of the minimum vessel count problem is ongoing, and the position of the Millersville University lab on this issue will no doubt continue to evolve. This means that it is doubly important to ask a supervisor for advice on how to proceed if you are asked to help compile a minimum vessel count.

Flotation

Many soil samples are saved for flotation. Flotation allows us to extract small botanical and faunal fragments that might be missed through the normal screening process. Flotation also frequently allows us to find small artifacts such as beads, eggshells and pins that might fall through the 1/4" screening mesh used in the field. Because flotation and secondary processing use specialized techniques and equipment, the full procedure is not explained in this manual. In case of questions, ask a member of staff.

Final Storage

After the artifacts are catalogued, the bags should be stored in boxes. These bags should be stored sequentially according to ER/SR number until the box is reasonably full. These boxes are placed in the storage room in sequential order from the last set of ER/SR numbers catalogued. Be sure that a box label lists all of the relevant ER/SR numbers is affixed to the exterior of the box, printed database list will eventually be placed inside the box detailing the complete inventory of each bag. Be sure to leave some room for any artifacts pulled for analysis or conservation.

Lab Etiquette

Remember that you will be part of a large group of people working in the small archaeology lab. There are a few rules which we ask all staff, students and visitors-to ad-here to which will make it easier to keep the lab clean and organized.

1 - *The Lab Supervisor is NOT your mother!!* Always clean up after yourself. This includes washing your dirty dishes (especially coffee cups), picking up personal belongings, cleaning up work areas such as sinks, tables, labeling equipment, etc.

2 - ***Never leave any project half-finished*** unless your supervisor allows it and you leave clear instructions on your progress for the next person.

3 - ***Remember that the lab is a shared space for many people.*** Voices should be kept low and personal effects should be kept neatly together in the designated area.

4 - ***Be aware that you are part of the archaeology exhibit.*** The lab is open to the public. You never know when someone will be coming to see what you are doing, so act in a manner that reflects positively on Millersville University.

Artifact Identification and Terminus Post Quem Dating Lists

The following sections of this manual have been included to aid in the identification and dating of artifacts found at Elizabeth Furnace. These sections have been compiled from a variety of sources available to archaeologists, and are as comprehensive as possible. However, the lists are by no means complete. The types of reference materials needed for *detailed* analyses are not present in this guide, but many are available in the Archaeology Laboratory library.

The artifact section of this manual has been divided into five parts: Ceramics, Glass, Metal, Miscellaneous Historic and Faunal. Prehistoric artifacts have not been covered here due to the relatively small amount found at Elizabeth Furnace, as well as space constraints.

Terminus Post Quem (TPQ): the "date after which..."

One of the most important analytical tools used by archaeologists is the determination of the TPQ. The TPQ is a date established by identifying the artifact in each lot which is the newest or most recent artifact in terms of production. The TPQ can be a fairly reliable indicator of the earliest point in time in which an assemblage or soil layer could have been deposited.

For example, the dateable artifacts from one layer of soil at a Poplar Forest site have *beginning* manufacture dates of 1780 (pearlware), 1762 (creamware), 1805 (machine cut nail) and 1738 (Spanish coin). The TPQ for that layer would be 1805, because you know that those artifacts *could not have been deposited* before that particular type of nail found with the older artifacts had been invented. By assigning dates to each individual layer of soil at a site, archaeologists can then determine the date of a site as well as the sequence of deposition.

Note of caution: many of the dates listed in this manual are the best estimates available to researchers today. They are not meant to provide authoritative dates for an assemblage; only further, more detailed research will provide that depth of information necessary for proper site interpretation.

A BRIEF NOTE ON CERAMICS

Historical archaeologists have studied ceramics more than any other class of artifacts. Their value as research tools is based on several properties inherent in the ceramics-themselves. First, they are fragile. Their uses (cooking, dining, storing) make them vulnerable to breakage as they move from kitchen to dining room, and withstand the daily rigors of washing and stacking. They are also necessary goods. Although both wood and pewter were frequently used in food preparation and storage, by the 19th century, ceramics formed the bulk of table settings in America. Until about mid- nineteenth century, they also functioned as food storage containers. Even after glass bottles and mason jars replaced ceramic containers for preserves, stoneware remained popular in kitchens and dairies for storage.

Unlike metal, bone and even glass, vessels made of clay remain stable in the ground for thousands of years. Equally, ceramics are non-recyclable. Glass can be remelted, metal can be reformed, and bones reworked into buttons, handles and brushes. While decorative glazes may wear off after burial, the majority of a ceramic vessel's original information remains intact and available to researchers over time.

Ceramics are also important indicators of taste, economic status, and market availability. Advancing technology throughout the 17th, 18th and 19th centuries responded to changes in consumer taste. Potters were quick to reflect movements in popular style, making their wares a weather vane of current trends. These cultural values, embodied in vessels, sherds, detailed potters' account books, order books, merchants' records and shop and estate inventories allow historical archaeologists to use ceramics as interpretative tools for addressing broad questions of culture change and continuity.

A brief caveat: despite the undoubted importance of ceramics as an analytical tool in archaeology, they have only ever comprised a very small portion of consumer expenditure.

THE CERAMIC TRILOGY

Historical archaeologists divide ceramics into three main groups based on their overall physical attributes, especially paste and firing temperature.

I. EARTHENWARE

1. **Coarse Earthenware:** very low fired, opaque, porous ceramic often with large inclusions in the paste. Glazed (to retain liquids) or unglazed. Minimal decoration includes rouletting, slipping, and sgraffito. Used primarily for food/drink preparation and storage.

2. **Refined Earthenware:** low fired, opaque, porous ceramic. Most often glazed with a clear or slightly colored lead glaze. Refined earthenwares are usually decorated by painting, transfer printing over and under the glaze, molding, slipping, engine-turning. Used for table and teawares primarily, although toiletries also common. Examples include creamware, pearlware, whiteware, etc.

II. STONEWARE

High fired hard bodied ceramic. Some vitrification occurs due to firing temperature. Stonewares feature opaque, dense body impervious to liquids. Degrees of refinement vary from coarse storage jars to finely molded teawares produced in neoclassical design. Most commonly salt glazed, although refined stonewares may be lead glazed. Stonewares are usually decorated with painted, rouletted, molded, engine turned, incised designs. Examples include Westerwald, Nottingham, white salt-glazed stoneware, jasper ware, black basalt, rosso antico, etc.

III. PORCELAIN

Porcelain is a very high fired, vitrified ceramic. It is also translucent. The main ingredients creating its "finer" appearance are kaolin and petuntse. Oils from fern ash, lime and ground animal bone were sometimes used to increase whiteness of paste. Most commonly decorated with under and overglaze painting, although gilt and decal decorations also occur, especially on more recent examples. Also, some English porcelains were transfer printed. In China, when produced for export it was most often as table and teawares, although some utilitarian forms were also made, including toiletries.

FUNCTIONAL TYPOLOGY

Archaeologists also divide ceramics (and other artifacts) by their original uses and functions. To date, there is not much agreement as to how to categorize or even, what-to name individual vessels. Most archaeologists attempt to use terms which were in use by the manufacturers and the retail outfits selling the vessels. The lab supervisor is in the process of compiling a basic summary of ceramic vessel types, including size, shape and the former contents of the vessel. It is available for use in the lab. Some of the basic types are listed here.

UTILITARIAN:

Food preparation vessels: vessels used for preparing, mixing, and cooking food

- Dishes
- Nappies
- Milk pans
- Butter chums
- Pitchers

Food storage vessels: vessels used for storing foods (preserves, grains) and liquids

- Jars
- Jugs
- Crocks (wide-mouth jars)

SERVING:

Tablewares: vessels designed for use in food serving which typically include:

- Baskets
- Bowls
- Compotes
- Dishes (platters, soup dishes, gravy dishes)
- Jugs (pitchers)
- Mugs
- Plates (table plates, twiffiers, soup plates)
- Salts
- Strainers
- Tureens
- Sauce boats

Teawares: specialized vessels designed for use in tea preparation and serving which include:

- Creamers
- Saucers
- Sugar bowls
- Slop bowls
- Tea bowls
- Tea caddies
- Tea pots

(also coffee pots, chocolate pots, cups and saucers, and accompanying serving vessels)

TOELETRIES: vessels used for personal health and hygiene

Apothecary jars

Basins (plain basins, shaving basins)

Bidets

Bottles

Chamberpots

Ointment jars

Spittoons

CERAMICS DATELINE

1600-1800	Tin-glazed wares (delft, faience, majolica, etc.)
1630-1830	Utilitarian tin-glaze (ointment, and apothecary jars chamberpots etc.)
1670-1795	English yellow slipware with comb decoration
1700-1770	English yellow slipware "dot ware"
1700-1775	Westerwald with cobalt, often stamped and sprigged
1700-1800	Staffordshire Brown stoneware (English)
1700-1830	Black glazed redware
1720-1805	English white salt glazed stoneware
1740-1790	Jackfield
1744-1775	"Scratch blue" salt glazed stoneware
1750	English porcelain
1750-1810	Agateware
1762-1820	Creamware
1762-1780	Darker yellow creamware
1770-1820	Lighter yellow creamware
1762-1786	Refined red stoneware, engine, turned (also called "Rosso Antico")
1762-1815	Creamware, overglazed printing, painting
1763+	Engine-turned designs on pottery
1768-1820	Black Basalt by Wedgwood
1775-1890	Shell edged wares:
1775-1810	Rococo
1810-1835	Even scallop, with curved or straight lines and/or impressed bud
1820-1835	Embossed
1830-1860	Unscaloped, impressed rim
1860-1890	Unscaloped, unmolded, painted lines
1780-1820	Pearlware
1780-1815	Creamware, annular
1780-1820	Pearlware, transfer printed
1780-1815	Pearlware, blue hand painted
1790-1850	Luster ware (uncommon until c. 1800)
1790-1820	Pearlware: polychrome painted
1790	Pearlware, annular
1792	Chinese porcelain - Willow pattern
1795-1840	Dendritic Mocha
1800	Royal coat of arms as part of mark
1805	Early whiteware first developed
1805-1930	Albany slip glazed stoneware
1805	Stippling on transfer printed wares
1805	Stone China introduced
1810	Printed marks with pattern name
1810	Black and brown underglaze transfer prints introduced
1811-1830	Common cable (worming/finger trailed)

1813	"Mason's Patent Ironstone" developed
1820	Whiteware becomes common
1820	Whiteware, blue banded
1820	Embossed edge on refined earthenware
1825	Red, green, purple transfer prints introduced
1830-1940	Yellowware
1830+	Rockingham (Bennington) glaze
1830	Polychrome transfer-printed patterns
1835-1915	"Ginger beer" bottles (Bristol-glaze)
1840-1910	Flow-blue transfer printed patterns .
1840	ironstone or "white granite" (common after c.1855)
1845-1925	sponged/cut sponge stamping
c.1855-1890	Undecorated wares predominate
1850	"Royal" as part of mark
1850	Whiteware, chrome green or light blue transfer printed patterns
1860	Bristol glaze stoneware
1861	"Ltd." as part of mark
1862	"Trademark" as part of mark
1870	Japanese style patterns, transfer-printed
1880	"Decalcomania" - decal printed pattern
1880	Liquid gold gilding, "bright gold"
1884	"Rtd." as part of mark
1891	"Made in..." legally required as part of mark (McKinley Tariff)
1945-1952	"Made in Occupied Japan" legally required after World War II

Note: The above list gives only the *dates of manufacture* for ceramics. These manufacturing dates are required for determining *TPQ* dates - dates relating to stylistic or popular changes are not used. However, knowing when wares, or more commonly, certain decorative techniques were most popular can be very useful for artifact interpretation. An archaeologist may find it more useful to narrow large date range with popularity dates instead.

CREAMWARE

PASTE: Soft, cream colored, porous with no visible inclusions.

GLAZE: Clear lead glaze which spalls easily; where it pools around footings, handles etc. often the glaze is yellow or yellow green in color.

FORM: Table and Teawares, utilitarian wares.

DECORATION:

Feather edged/ shell edged

Hand painted under- and overglazed

Transfer printed over the glaze in red and black annular slipped

Engine turned molded

Undecorated

DATING GUIDE

1740-1762	"pre-creamware": Development of precursors to creamware
1740-1770	Clouded/tortoise shell
1750-1775	Whieldon wares
1750-1765	Littler's blue
1759	Green glazed (short-lived Wedgwood innovation)
1762	Josiah Wedgwood "perfects" creamware
1762-1780	Darker yellow
1770-1820	Lighter yellow
1762-1820	Rim designs
1762-1785	Queen's ware
1762-1800	Feather edged
1775-1820	Shell edged (see dateline for details on shell edge)
1780-1820	Plain rims
1770-1815	Transfer printed (mostly overglaze)
1780-1815	Annular (bands of color in black, green, brown, blue, etc.)
1795-1820	Mocha

Creamware



Production Dates		Classification	
Start: (TPQ)	1762	Ceramic Type:	Refined Earthenware
End:	1820	Glaze Type:	Lead with copper
Median:	1791	Place of Origin:	England

Characteristics:

- The profile of a creamware sherd will appear white to cream in color, will be hard and thin.
- The surface of the vessel will be creamy (yellowish) in color caused by the addition of copper to an otherwise transparent lead glaze.
- Where the glaze pools it will appear yellow/green to green because the copper additive builds up.

Common Vessel Forms:

BOWL, CUP, PITCHER, PLATE, PLATTER

PEARLWARE

PASTE: Soft, cream colored, porous with no visible inclusions (same as creamware).

GLAZE: Lead glaze with cobalt added for blue coloring, spalls easily, where it pools around, footings, handles etc. often the glaze is blue or grey-blue

FORM: Table and teawares, utilitarian

DECORATION:

shell edged

hand painted under and overglaze in blue and polychrome transfer printed

mocha

engine turned molded

undecorated (rare)

DATING GUIDE

- 1779 Pearlware "perfected" (Josiah Wedgwood); heavy production from 1780
- 1780-1820 Shell-edged
- 1775-1810 Rococo
- 1810-1835 Even scallop, with curved or straight lines and/or impressed bud
- 1780-1815 Blue painted
- 1780-1810 "Chinoiserie": Chinese style transfer prints and blue painted decorations 1780-1820 Undecorated
- 1780-1820 Transfer-printed: blue, then brown, black and red
- 1790-1820 Marbled/Finger painted: slips of different colors swirled together, usually green, and brown.
- 1790-1820 Luster-ware: Sold used in the glaze to create pink luster (after 1807) platinum used in the glaze to create silver luster (after 1805)
- 1790-1820 Polychrome Painted:
- 1790-1810 Early Palette: Darker colors and earth tones; mustard yellow, brown, yellow-green, and blue.
 - 1800-1820 Late Palette: Brighter colors; Yellows, Reds, Blues, Greens, Blacks (also called "bright palette")
- 1790-1820 Annular or Banded
- 1795-1820 Willow Pattern
- 1795-1890 Mocha
- 1800-1815 Transitional Transfer Print (Movement from Chinese to European Design)
- 1800-1820 Finger-painted annular: areas with marbled color on annular.

Plain and Hand-Painted Pearlware



Profile appears white to light cream color and is thin and hard.

Glaze is white with a tinge of blue due to addition of cobalt; this is most obvious where glaze pools around rim and base.

Designs are hand-painted, not as clearly defined, and symmetrical as later transfer-printed items. Designs are usually floral in nature.

Common Vessel Forms:

BOWL, CUP, SAUCER, TEA POT

Production Dates		Characteristics	
TPQ	1780	Ceramic Type:	Refined Earthenware
END	1840	Glaze Type:	Lead
MEDIAN	1815	Place of Origin:	England

Shell Edge Pearlware



Profile appears white to light cream color and is thin and hard.

Glaze is white with a tinge of blue due to addition of cobalt; this is most obvious where glaze pools around rim and base.

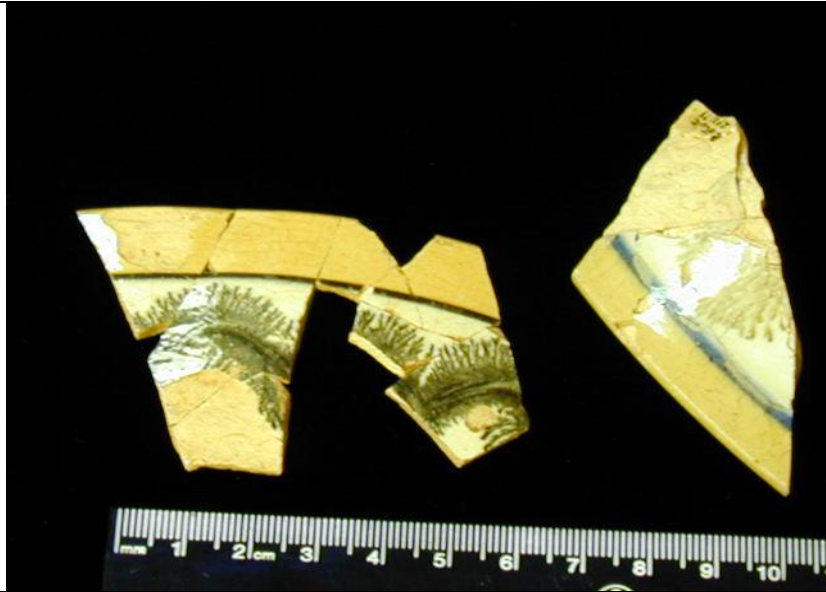
Edges are usually scalloped (see above) and some times etched. Edges are also usually colored either blue or green.

Common Vessel Forms:

BOWL
PLATE
PLATTER

Production Dates		Characteristics	
TPQ	1780	Ceramic Type:	Refined Earthenware
END	1840	Glaze Type:	Lead
MEDIAN	1805	Place of Origin:	England

Dendritic Mocha Wares



Mocha refers to the fern-like pattern as seen at left, which is created through a mixture of tobacco juice and urine.

Design is found on pearlware, creamware, and yellow ware. (Background glaze will be colored accordingly)

Pattern appears in green (above) and sometimes blue.

Common Vessel Forms:
BOWL
PLATE
PLATTER

Production Dates		Classification	
Start:	1795	Ceramic Type:	Refined Earthenware
End:	1840	Glaze Type:	Lead
Median:	1817.5	Place of Origin:	England, North America

Annular Wares

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Annular refers to a decorating technique in which slips of varying colors are applied to the ware, creating banded, rows of alternating colors.

Associated Decorative elements include cabled, dendritic mocha, and marbled.

Annular decoration is mostly found on pearlware, creamware, and whiteware.

Common Vessel Forms: BOWL, CHAMBER POT, MUG, TEA POT, PITCHER

Production Dates		Classification	
Start:	1790	Ceramic Type:	Refined Earthenware
End:	1820	Glaze Type:	Lead
Median:	1805	Place of Origin:	England

Transfer Print Pearlware



Glaze is white with a tinge of blue due to addition of cobalt; this is most obvious where glaze pools around rim and base.

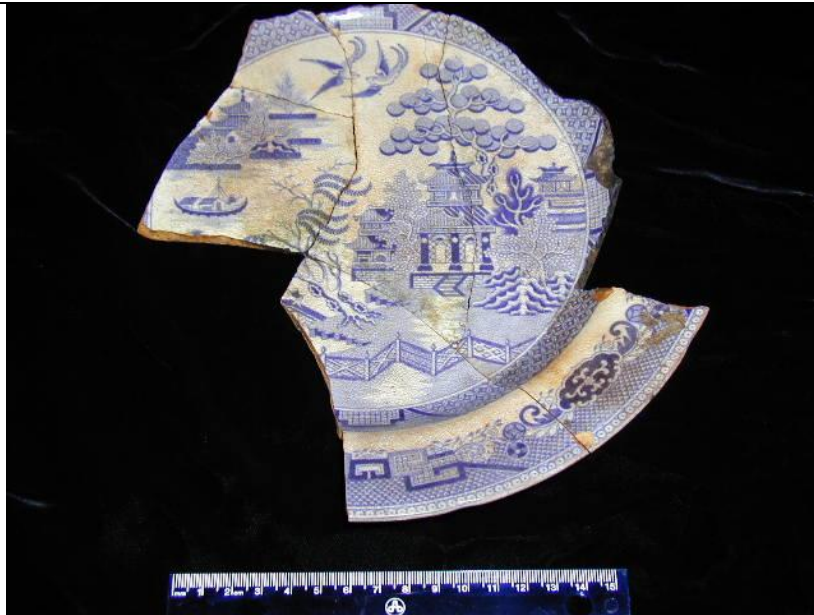
Designs are far more detailed than hand painted, cover more of the vessel's surface, appearing dotted.

Transfer printing on ceramics is fundamentally the same as using a T-Shirt iron on. The print is transferred from a paper to the vessel surface.

Production Dates		Classification	
Start:	1795	Ceramic Type:	Refined Earthenware
End:	1840	Glaze Type:	Lead
Median:	1817.5	Place of Origin:	England

Common Vessel Forms: BOWL, CUP, PLATE, JAR, PLATTER, SAUCER, TEA POT, TUREEN

Willow Pattern Pearlware



The pearlware glaze is white with a tinge of blue due to addition of cobalt; this is most obvious where glaze pools around rim and base.

The "willow" pattern was first developed by Thomas Minton in 1792. Many variations of willow pattern were produced. The standard willow pattern includes one bridge, a cottage or mini-pagoda, three figures, a boat and two birds. The combination of these elements tells a story. **A geometric border design is usually included with the willow pattern.**

Production Dates		Classification	
Start:	1792	Ceramic Type:	Refined Earthenware
End:	1840	Glaze Type:	Lead
Median:	1815	Place of Origin:	England

Common Vessel Forms: BOWL, CUP, PLATE, PLATTER, SAUCER, TEA POT

WHITEWARE

- PASTE:** Harder and denser than creamware or pearlware, off-white in color, porous with no visible inclusions.
- GLAZE:** Clear giving vessels their pure white color. Early whiteware sometimes tinted blue to resemble pearlware. Glaze is thick and tends to craze.
- FORM:** table and teawares, utilitarian wares (vessels tend to have thicker, heavier bodies than their counterparts in cream ware or pearlware).

DECORATION: extensive variation - most commonly:

- hand painted
- transfer printed underglaze in light and dark blue, red, green, purple, yellow, black, brown or
- polychrome
- flow blue and "flow mulberry"
- molded
- sponged ("spattered" and "cut sponge")
- annular
- mocha
- edged
- decal
- undecorated


DATING GUIDE

Note: some decorative techniques may have existed as early as 1805. For the purposes of this dating guide, however, they have been given a start date of 1820, the date from which whiteware became the dominant refined earthenware.

- 1805 Early Whiteware developed
- 1815-1835 "Vintage years" of transfer printing
- 1820 Whiteware becomes popular
- 1820-1830 Transition between creamware/pearlware and whiteware/
- 1820 Dipped: includes banded, annular and mocha; colors range from bright to primary to subdued earth tones.
- 1820-1890 Shell Edge
 - 1810-1835 even scallop, with curved or straight lines and/or impressed bud
 - 1820-1835 embossed
 - 1830-1860 unscalped, impressed rim
 - 1860-1890 unscalped, unmolded, painted lines
- 1820 Transfer Printed: blue initially, then brown, black, red, green, yellow, purple
- 1820 Sponge: decoration applied with a sponge resulting in a mottled, splotched

appearance

- 1820-1850 Lusterware
- 1820 Painted (usually floral):
 - 1820+ Blue Monochrome
 - 1820-1875 Polychrome
- 1835 Polychrome transfer print
- 1840-1910 Flow blue, “flow mulberry”: deliberate blurring of printed design
- 1830-1860 Romantic period of transfer print
- 1850-1870 Undecorated ware dominant
- 1897 Decals

Whiteware			
		<p>Clear lead glaze, background is pure, paper white</p> <p>White to off white colored, thin, hard, compact paste</p> <p>Glaze in clear to light grey where is pools, may also be slightly bluish</p> <p>Transfer printed designs made up of many tiny dots in red, pink, green, blue, brown and black</p> <p>Common Vessel Forms: BOWL, CUP, PLATE, PLATTER, SAUCER, TEA POT</p>	
Production Dates		Classification	
Start:	1820	Ceramic Type:	Refined Earthenware
End:	1900	Glaze Type:	Lead
Median:		Place of Origin:	England
<p>Note: A key way to tell whiteware from pearlware is the presence of crazing (crackling of the glaze) which is common in white wares. Also, if you stick your tongue to the ceramic body it will not stick unless it is transitional whiteware (1820-1850) which is more porous like pearlware, but does not have blue pooling.</p>			

IRONSTONE (STONE CHINA, WHITE GRANITE, ETC.)

PASTE: Harder than whiteware, little porosity, body white, sometimes blue or grey shades.

GLAZE: clear, deeper than whiteware, does not tend to spall

FORM: table, kitchen, tea wares, utilitarian, often "heavier" than whiteware forms


DECORATION: similar to whiteware, but more often left undecorated

DATING GUIDE

1813 First use of name: "Mason's Patent Ironstone"
 1845 Ironstone, or "white granite" date of introduction
 1855-1890 Ironstone popular

All decorative technique dates are essentially identical to those for whiteware. However, the majority of ironstone was left undecorated.

The precise definition of ironstone as a type of ware is currently the subject of much debate amongst archaeologists (especially amongst those interested in ceramics). You should be aware that some archaeologists treat ironstone as an entirely separate ware type, while others treat it as a sub-type of whiteware. There are a few methods which archaeologists may use to help distinguish ironstone from whiteware: one is a "lick test" - not the most hygienic method, but by sticking your tongue to a ceramic, you can tell whether it is porous or not: whiteware will stick, ironstone will not. Also, some archaeologists employ the "scratch test" - a metal probe is used to scratch the surface of the ceramic. Whiteware will scratch (it leaves a permanent scratch in the surface), ironstone will not scratch (there is no visible scratch, and the metal probe may leave a grayish line on the ceramic instead). At Millersville University, the staff make every effort to distinguish ironstone from whiteware because of its importance in mid-nineteenth century consumer choice.

“Ironstone”			
		<p>The profile of this ware is usually white, thick, and hard. This ware is almost double the thickness of pearlware.</p> <p>Usually plain white glaze which has a tendency to crackle. Even if cracked the surface remains smooth.</p> <p>Vessel forms are usually more utilitarian in function and thus undecorated.</p> <p>Common Vessel Forms: BASIN, BOWL, PLATE, PLATTER, TUREEN</p>	
Production Dates		Classification	
Start:	1820	Ceramic Type:	Refined Earthenware
End:	1900	Glaze Type:	Lead
Median:		Place of Origin:	England
<p>Note: A key way to tell whiteware from ironstone is to scratch the body with a metal object. The metal object will scratch the body of whiteware, whereas the metal will rub off on the body of the ceramic.</p>			

GLOSSARY

Annular: a term which includes a variety of decorative techniques such as banding, mocha designs, engine turning, and colored slips used on refined earthenwares in the late 18th and 19th centuries

Crazed; crazing: cracking of the glaze resulting from different rates of shrinkage between the clay body and the glaze

Enameled: overglaze (see below) painted decoration. Usually used to describe Chinese porcelain, but technically correct for all overglaze painting.

Engine turned: a type of decoration common on refined earthenwares in which vessels are placed on a lathe when leather hard, turned, and incised with lines/geometric motifs

Flatware: a category of tablewares including vessels which are commonly wider than they are tall; plates, dishes (platters), saucers

Flow blue: a form of mid 19th century decoration in which blue transfer-printed designs were made to run or "flow" during firing, resulting in a blurring and softening of the pattern

Glaze: a glassy coating applied-to ceramic vessels before firing which causes them to become impervious to liquids

Hollow: a category of table and tea wares including vessels which are commonly taller than they are wide; bowls, jars, jugs, tea bowls

Incised: decoration motifs cut into the leather hard bodies of vessels, often geometric or floral

Inclusion: rock fragments, minerals, organic matter or other particles mixed either naturally, or intentionally (see temper) to the clay body

Maker's mark: a symbol incised, impressed, painted or printed on to the body of a vessel which represents the manufacturer; often helpful in dating

Molding: a method of producing vessels in which clay is poured into a plaster mold and allowed to harden; individual decorations can also be independently formed in a mold and applied to a wheel thrown body

Overglaze decoration: decoration (painting, transfer printing) which is applied to a vessel's surface after that vessel has been glazed and fired; the vessel is often then refired at a lower temperature so that the decoration will adhere. Nevertheless, overglaze decoration is often much less durable than those applied under the glaze, and frequently are destroyed archaeologically.

Paste: the constituents of fired pottery, including clay matrix, inclusions and/or temper, excluding surface treatments

Petuntse: a naturally occurring feldspathic stone which was used in making both the paste and the glaze for Chinese porcelain

Salt glaze: a glazing technique most often used on stonewares in which salt is thrown into the kiln during firing. The sodium combines with silica and aluminum in the bodies of the vessels, resulting in a thin but durable surface glaze. Surfaces glazed in this manner are pitted, resembling an "orange peel".

Sip: A fluid suspension of clay in water, most often used as a surface coating on earthenwares. Colored slips are a common decorative treatment.

Spall: to break into smaller pieces; spalling often results from post-depositional freezing and thawing action in the ground, or from uneven firing in the kiln

Temper: additives (natural or manmade) intentionally combined by the potter to a clay body, thereby enhancing the clay's workability and firing qualities

Underglaze decoration: decoration (painting, transfer printing) applied to a vessel's surface before the glaze is added. The vessel can be fired at a fairly high temperature, and the decoration, protected by the glaze which seals it, is fairly durable and stable in the ground.

