**Cemetery as a Site for Multidisciplinary Teaching**

*PAESTA Conference session led by Theresa-Lewis King (AMY Northwest Middle School) and Eileen Fresta (Penn State Brandywine). Handout prepared by Laura Guertin (Penn State Brandywine) and adapted from the Smithsonian Institution’s Exploring Historic Cemeteries (http://anthropology.si.edu/outreach/Teaching\_Activities/pdf/ExploringHistoricCemeteries.98.pdf)*

Investigation of Tombstone Weathering Rates

EXPLORING HISTORIC CEMETERIES



This exercise focuses on historic cemeteries. Cemeteries provide historic archaeologists with an interesting opportunity to examine how artifacts (in this case tombstones) vary at different times and in different places. Such variations often reflect how a culture is changing, how cultures differ from one another, and how artifacts reflect these changes and differences. To understand differences in tombstones, archaeologists observe both the individual markers and the larger context or setting of these graves. In general, they ask about the importance of artifact patterns and the context of these patterns to archaeological interpretations.

In addition to the style of the tombstone marker, the type of material used for tombstones has varied over the years with availability, fashion of the times, and perhaps even commercial promotion. Earlier tombstones were obtained more locally than later ones because of cost of transportation. Since the stones were erected, they have been exposed to weathering by the atmosphere and rain. Presumably then, we should find that older tombstones are “more weathered” than ones set more recently. Geoarchaeologists are interested in trying to establish the relationship between the rock type, age of tombstones, and the amount of weathering that has occurred on them.

BACKGROUND ON THE MID-ATLANTIC REGION’S HISTORIC CEMETERIES (from the Smithsonian Institution)



In the Washington metropolitan area during the 16th, 17th, and early 18th centuries most “graveyards” were located in churchyards and usually near the center of town. However, overcrowding of graves and new sanitation laws mandated the closing of most of these early “graveyards” by the 1850s. The new cemeteries were located on the periphery of towns – distinct and separate from the focus of activity among the living. By the mid-19th century, a new genre of formal cemeteries was being established in America. (The Mount Auburn Cemetery in Cambridge, MA, is one of the earliest examples of these new burial places.) Most existing cemeteries in the Washington metropolitan area were created during this time and are generally referred to as “rural cemeteries.” What was this new genre?

The newly established 19th century “cemeteries” (replacing earlier terms such as “graveyards”) were not simply a place to inter the dead but represented a new type of cultural institution. Cemeteries were now formally designed to resemble gardens. The dead were not simply interred but memorialized. New rules defined such things as the proper care of the grounds and the appropriate attire and demeanor while visiting the cemetery.

The boundaries of most 19th century rural cemeteries are marked, for instance, by fences or shrubbery. Often a centrally located entrance leads to symmetrical paths or roadways that divide the cemetery into sections. These sections may be further divided into family plots or other areas (e.g. military graves). Planting may mark sections, plots or individual graves. Such features set off the individual graves as well as the entire cemetery, both physically and visually, from the surrounding area.

Nineteenth century cemeteries distinctly differ from earlier American graveyards. The differences are not limited to changes in gravestone styles, epitaphs, and symbols. Earlier graveyards express mortuary ideology and attitudes of death through individual graves. Nineteenth century institutionalization of rural cemeteries suggests that variation in individual graves is subsumed under the proscribed or implied elements of the institution. Rural cemeteries cannot simply be analyzed or understood as clusters of graves. Individual graves are an integral part of the overall cemetery “design.” Interpretation of these 19th century cemeteries must, therefore, not only account for the variety among individual graves but also for the overriding common elements expressed in all such cemeteries.

In metropolitan Washington, the most common gravestone styles are tablets, obelisks, blocks, and slabs. Occurring in the late 18th century to the mid-19th century, tablets are single vertical stones that average two to four inches in thickness and are made of limestone, marble, or sandstone. These stones, often with a sculpted top, are placed directly in the ground with no bases used. All the surfaces of these stones have been cut (or finished) but not polished.

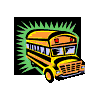
* ***Obelisks***: Shaped like the Washington Monument, obelisks, usually made of marble, are tall and square in cross-section and dominate gravestones in the late 19th to early 20th century. The obelisk may be topped with an urn, ball (known as an orb), or other figure and may have one or several bases of varying sizes. While most gravestones are lettered only on the front, obelisks may show lettering on all sides.
* ***Blocks***: Blocks, which are square gravestones, vary in size, may or may not have bases, and generally show cut but not polished surfaces. Made of a variety of different stones, these markers are characteristic of the 20th century. A variation of a block stone, the pulpit style marker has a slanted face on which is carved the individual’s name, other information, and decoration. Made of marble or granite, pulpit stones rest on bases. This pulpit marker is nicknamed the “cash register” style for this project.
* ***Slabs***: Slabs typify the 20th century and are still the most common gravestone used today. Slabs, often composed of granite, are usually placed vertically on a base and vary in thickness from six to eight inches. While the front of a slab is polished, the sides and sometimes the back are roughhewn.
* ***Other***: Other gravestone styles may be noted as well – elaborate figurative sculptures, crude stones, or simple wooden crosses. Often greater numbers of unusual gravestones are found during transition periods from one general style (e.g., tablets) to another style (e.g., obelisks).

OUR MISSION



We will design questions that will help us take a close look at the cemetery and to notice the importance of elements other than just the gravestones themselves. Some questions will treat each gravestone as an artifact and focus on the same kind of details an archaeologist would find useful in understanding how artifacts reflect change over time. Other questions will focus on particular aspects of the cemetery.

TO THE CEMETERY WE GO!!!



The Cumberland Cemetery in Lima, PA, is the site of our investigation. Cumberland Cemetery has people of local historical significance buried in this location.

GENERAL LAYOUT OF CEMETERY



What is the name of this cemetery? Pay particular attention to fences, paths, paved drives, chapels and other buildings, plantings, and other features of the landscape. Identify the boundaries of the cemetery. Is it marked by a fence, sidewalk, shrubs, or in some other way?

Make a rough sketch map showing the location of the fences, paths, and other features you have identified. Note the earliest and most recent gravestones and sketch in their locations. Does the cemetery seem planned or are the graves located haphazardly? Identify on your map where you collected your data. [*NOTE: this next part I assign to students:* You will redraw this map on the computer (suggested application = Paint) and copy/paste your artwork in your final report. Save your drawing as a JPEG in Paint. When you are working in MS Word, click on “Insert,” “Picture,” and “From File.”]

WEATHERING OF TOMBSTONES



The decay of tombstones can give a rough measure of the rates of weathering of rock. It can be reasonably assumed that when tombstones were set up the rock was fresh from sawing and carving. In most cases it can also be assumed that the date of death of the person marked on the tombstone is the approximate date that the stone was set up in its fresh condition. Since the stones were erected, they have been exposed to weathering by the atmosphere and rain.



There are four common rock types utilized as tombstones. They are easy to identify. The rock types and their characteristics are:

* ***Marble*** – white to light gray, smooth when fresh, but “sugary” texture when weathered
* ***Granite*** – black to medium gray or pink, specked or “salt and pepper-like.” Black or reddish-pink when polished.
* ***Sandstone*** – sandy in texture, white or cream or brick-red in color.
* ***Slate*** – dark gray, very smooth and fine-grained.

Until a few decades ago, marble was the preferred and most commonly used stone. Marble is still preferred and used by some people. In recent decades, the Rock of Ages Corporation in Barre, Vermont, has promoted granite for tombstones, and many of the more recent ones are made of granite.

For a comparison to be made from tombstone to tombstone, classes of weathering categories will be used. The following numbers will define how we classify the amount of weathering a tombstone has undergone.

* **Class 1** – unweathered, fresh
* **Class 2** – slightly weathered, faint rounding of corners of letters (feel the edges of the letters with your fingers)
* **Class 3** – moderately weathered, rough surface (except slate); letters legible
* **Class 4** – badly weathered, letters difficult to read
* **Class 5** – very badly weathered, letters almost indistinguishable; may show evidence of scaling (flakes broken off)

The Categories and Questions that we can use to guide us through our Cemetery Exploration

ROCK TYPE of tombstones through time

What type of rock was used for the oldest tombstones found in the cemetery? What type of rock has been used for the most recent? Is there a progression of changing rock types for tombstones through time?

ROCK TYPE AND RATE OF WEATHERING of tombstones through time

How have different rock types used for tombstones weathered through time? Does one rock type weather faster than another? Does the rate of tombstone weathering appear more rapid in one area of the cemetery than another?

STYLES of tombstones through time

Do you find certain gravestone styles in only some areas of the cemetery and not others? Are these styles associated with only certain time periods? What does this tell you about the size of the cemetery at different times and how tombstone styles changed over time?

MEN AND WOMEN tombstones through time

Examine tombstones with men’s names and women’s names from different time periods. How are men’s and women’s gravestones similar? How are they different? What might this tell you about the changing roles and statuses of men and women over time?

Additional topics and questions:

What are the pieces of data that can be collected in a cemetery?

Let’s make a list!

What are some hypotheses that can be developed and tested, and what would be the justification?