

Archaeology in the Classroom: Using a Dig Box to Understand the Past

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Mock excavations, or “dig boxes,” offer students a hands-on opportunity to explore artifacts and their importance and to learn the principles of context and stratigraphic association.

The dig box can be central to discussing differences that existed between classes, races, ethnic groups, and the sexes at different times in history. By setting up each excavation to represent a site, the comparisons of status between peoples become evident. For example, one excavation site could represent a plantation house in the South, which would have considerably more wealth and more elaborate artifacts than another site created to represent the slave dwellings on the same estate. The flexibility of this approach allows teachers to create an activity that complements a specific lesson, regardless of the topic, by increasing student understanding of how various peoples lived during a particular period of history.

Each year in late April, the University of Maryland’s Anthropology Department organizes mock excavations that are open to the public on Maryland Day in College Park.¹ This day-long experience is presented by anthropology majors and arranges excavations for children, ages 6

to 12. Visiting children dig and find artifacts, discuss how our society uses these materials today, and then extrapolate on how the material, may have been used in the past (see Box on page 274).

In 2006, high school science teacher Brett Bentley instructed seven college undergraduates on how to teach children about archaeology, highlighting the concept of past cultures with a concrete set of objects that the children could relate to. The visiting children were actively engaged in discussing their ideas on the artifacts coming out of the layers of sand or soil. The undergraduates said they, too, found the experience enriching because, as they taught the material and presented it to a new audience, they were forced to reformulate and internalize their own understanding.

The Mock Excavation

The first principle teachers should emphasize prior to leading a mock excavation is that the artifacts that are recovered have little or no meaning without their soil context. Artifacts are items that have a meaning in the time and place in which they originate but have lost or have had that meaning altered as cultures have changed. These are the

concrete things that archaeologists dig up that are sometimes our only remnants of a bygone culture.

Our normal reaction to something that comes out of the ground is to name it based on what is familiar to us: “Oh yes, this is an arrow head,” or “This is a bottle.” But these instant identifications do not analyze the actual meaning of the artifact. When an artifact is a million years old, or 10,000 years old, or even 400 years old, we truly do not know what it is. It may resemble an artifact that we are familiar with, but our assumptions do not provide real or accurate information. Archaeology involves understanding the context in the soil and the ground in which the artifact is discovered, which, properly studied, helps us understand the artifact.

Layers in a dig box are created by using sand, mulch, peat moss, or kitty litter. The layers are visually distinct and have different textures. These differences mimic layers that are found in the ground when an archaeologist works. Because the ground is made up of soil, clay, rocks, and sand, students can move conceptually from artificial constructions differentiated by color, texture, and width, to an understanding of how



Elementary school students search for artifacts on Maryland Day in 2006, during a mock dig organized by the Department of Anthropology at the University of Maryland-College Park. Sponsors include the City of Annapolis, the Anthropology Student Association, and Archaeology in Annapolis.

(Courtesy of Archaeology in Annapolis)

the ground anywhere actually looks and must be approached.

Artifacts, and the context in which they are found, are one major source of our understanding of culture. By discussing both what artifacts were found and where within the soil they were located students gain an understanding of the materials a culture used at a particular time in history. This reveals much more about the past than what types of things people were using. For example, if a number of artifacts were found together, the combination of items may reveal important information about what activities people were engaging in. If these artifacts were found together in the remains of a building, or in a trash pit, an even broader understanding of the site and time period can be created.

During the Maryland Day excavation, students worked through three basic stations or physical locations. First, the students started at the dig box and excavated using a trowel or spoon to find large artifacts. They also saved any soil that they dug up in a bucket, in case they had overlooked artifacts while digging. They carried the collected soil to the second station, where the students sifted their dirt through wood-framed, wire-mesh

screens, set over a tarp or over an empty bin, in order to recover any remaining artifacts. Lastly, each child gathered up the artifacts and brought them to one of the college student volunteers, who then engaged the child with questions about the artifacts (e.g., where the items could have come from, and what they mean, especially when taken together, as a whole).

The purpose of this exercise is for the undergraduates to help the younger learners figure out on their own what they have discovered. A wide variety of comparisons can be made in which students relate the pieces of artifacts to things that they know (for example, the pieces of bricks looked a lot like the buildings around them; pieces of ceramic compared to their parents' dishes or knick-knacks).

After students dealt with each artifact separately, the artifacts could be grouped to make a statement about how people lived in the past. By creating a story about how one particular family lived in the past, the information was much more comprehensible and the children felt a greater connection to the activity.

Interpreting Common Artifacts

Many different levels of interpretation

exist for common artifacts. Following are some examples of how broken dishes or discarded animal bones can be interpreted. Broken dishes can include plates, serving dishes, and bowls. Modern dining habits involve place settings, dishes of uniform size, and dishes that match in terms of color and style. This is a way of eating that uses equipment which first came into use in the early eighteenth century in the American colonies. Modern table settings were first used in cities, and less in the countryside, but they do not reflect economic class because many dishes were inexpensive. They reflect the use of European manners, the use of courses to make up a meal, and the use of separately prepared foods that were served as portions. When we find a large number of bowls, along with large cooking kettles, it means that people preferred preparing stews as opposed to roasts, with vegetables prepared separately. Thus, different kinds of dishes reflect different eating habits and different ways of making up a meal. They do not necessarily reflect wealth, status, education, or ethnic groups.²

If a mock excavation uses animal bones as a discovery technique, students will learn how bones from cows are differ-

ent from bones from pigs; or how bones from pigs are different from sheep, or chicken. Such bones are always found in historic excavations, usually the discarded remains of meals. Because bones can easily be distinguished by species, and wild species from domestic species, students will note the proportion of beef, pork, lamb, and poultry eaten in the area of the excavation. These can also illustrate the amount of domestic versus wild food people had available. It is also possible to tell whether a cut of meat was prepared as a roast, or as chops (a much more modern way of preparing food).

Constructing an Archaeological Dig Box

Artifacts all tell stories. If a dig box contains fragments from many broken bowls

out of the same household, archaeologists can conclude that people ate stews, soups, or porridges. This is a characteristic of medieval cooking when a stew was made of many vegetables simmered together, sometimes with a whole joint of meat cooked slowly in the pot.

Matched plates of the same size and decoration are a mark of modern middle-class etiquette, or table manners that came into use around 1750 in the American colonies. Matched dishes mean individual place settings. They also reveal a meal with multiple courses.

A teacher can include broken slates in a dig box. These can be acquired from a roofing company. Slates are frequently found in nineteenth-century archaeological sites of former houses and represent children practicing penmanship and

numbers at home. Studies and homework were carried out on such slates.

Buttons are a modern form of fastening clothing and represented an improvement over pins. Buttons meant tighter fitting clothes. A dig with many buttons may be a sign that people at that location had been taking in laundry and washing clothes for their livelihood. Fancy buttons suggest a form of decoration. In an African American historical context, buttons and strait pins may represent special kinds of decoration and an invocation of family memories.

Whole glass bottles can show medicines, soft drinks, and liquor use. Because bottles can be recycled for canning and storage, they often have two or more uses. Just because a bottle has a label, does not mean that was its only use.

ARTIFACTS AND THEIR MEANING

Buttons. Use ten.

Interpretations:

- Used for fastening clothes for the last 10,000 years.
- When found with many common pins, an uncommon way of fastening clothes prior to 1700 (when common pins were more frequent).
- May indicate a hand laundry business done at home.
- The absence of zippers may indicate a date before 1950 (when zippers were introduced).
- In large numbers, may indicate decorative use or to ward off the evil eye in some cultures.

Plastic Pieces of dishes, bottles, or sheeting. Use two or three pieces, not complete vessels.

Interpretation:

- A date after World War II, clear evidence of twentieth-century life.

Bottles Use three or four.

Interpretations:

- If all are from the same date, they were used all at once. If they were used all at once and discarded simultaneously, this implies they were not reused for canning or storage.
- Many bottles come with brand names and contents molded into the glass. This will reveal date, patent, company name, and contents.

Tin Cans. Use three or four.

Interpretations:

- If the labels are kept on, they will reveal contents, manufacturer, date, quantity, and many other facts. If the

labels are off, much less information is available. Be sure to use some with and some without labels to show how information is lost.

- National brands guarantee quantity, quality, and price. Some people prefer national brands to local merchants' supplies where there can be shortchanging by the grocer. (A local grocer may overcharge, under weigh, or use inferior quality.)

Mirrors. Use one.

Interpretation:

- Cheap mirrors have only been available since the nineteenth century. At that point, those in poverty could use them whenever they wanted. Many African Americans used them on graves.

Oil Lamps. Use a base or a chimney.

Interpretation:

- These were far better than candles in terms of providing light at night. They represent easy reading at home. They also represent the ability to work for wages and piecework at home at night.

Matched Sets of Dishes. Use two or three plates, or pieces of the same pattern.

Interpretations:

- Styles of decoration always reveal a date.
- Dishes that match represent a set. Sets of the same size and decoration indicate modern table manners. Modern table manners denote eating in courses, sitting in chairs, eating together, and not using fingers to eat with.

Tin cans can be included in a dig box, including labels that don't peel off easily. Labels show national brands or local brands. National brands come with guaranteed contents, weights, and prices. Though national brands tend to be more expensive, poorer people often bought them to avoid being cheated at the local grocery store with poor quality goods for greater prices. National brands don't denote prestige; they can simply represent a guarantee of uniform quality.

Steps for Setting up a Dig

The following method for constructing archaeological dig boxes was adapted from the work of Maisha Washington, formerly a science coordinator at the Banneker-Douglass Museum, in Maryland's Center for African American



Courtesy of Archaeology in Annapolis

History and Culture in Annapolis.³

A dig box can be created in a plastic gardening trough (approximately 3 feet long, 2 feet wide and 8 inches high). Fill each box with three separate layers of soil to represent the natural stratigraphic layers of the earth. This requires 1 bag (2 cu. ft) of mulch, 1 bag (50 lbs) of sand, 1 bag (40 lbs) of topsoil. Bury a variety of artifacts within the soil such as ceramic dishes and figurines, seashells, wooden items, brick, toys, or animal bones. Items should be broken to simulate the condition of most actual archaeological finds. Insert broken items into each layer, after each bag of soil (sand or mulch) is put into the box. The artifacts should not be so tiny as to be too hard to find, and they can be buried in whatever manner is deemed appropriate.

Bowls. Use three or four cereal bowls, or soup bowls, of different patterns.

Interpretation:

- Bowls suggest stews in the seventeenth and eighteenth centuries in the American colonies, particularly if the patterns are not matched. Stews precede meals served in courses. They also precede cuts of meat served as chops or roasts. Stews imply a common meal with a joint of meat stewed with vegetables, and then ladled out into bowls and eaten with a spoon, or with fingers, with the remaining liquid drunk from the bowl.

Marbles. Use five or six commercially available marbles.

Interpretations:

- Marbles signify children playing a game as a group, sometimes only boys. In some settings they indicate black and white children playing together.
- Sometimes marbles can be used to establish chronology. Clay marbles come earlier than banded glass marbles, which come earlier than marbles with curved linear stripes.

Coins and Tokens. Use four or five U.S. pennies, nickels, bus or subway tokens, or even a stray coin from another country.

Interpretations:

- All coins are dated and therefore nothing in a stratum with a coin can be earlier than the date of the coin.
- Tokens represent modes of public transportation, substitutes for cash.
- Both men and women may have worn coins of no obvious value or with holes drilled in them as jewelry.
- Coins signify losses and are rarely deliberately deposited for safety.

Toys and Doll Parts. Three or four metal toys; pieces of dolls, some toys made of plastic.

Interpretations:

- Toys indicate children, families, and domestic life—as distinct from work or factory sites.
- Plastic toys all date from after 1950.
- Pieces of ceramic dolls, especially limbs and heads, are the most common relic of Victorian childhood.
- The majority of eighteenth-century toys were miniature versions of well-known objects and similar dates can be used for them, especially for items such as dollhouse furnishings and tea sets.
- Occasionally, doll pieces can connote magical practices.

All of these artifacts are easy to acquire, either through personal possession, or at a discount store. Since most artifacts found in the ground are broken pieces, and not whole, it is better to break the items, if possible beforehand, especially the ceramics. If teachers do not want to incorporate broken glass, small whole bottles may be added to the dig box.

A good source of information about historic artifacts is listed below:

Hume, Ivor Noel. *A Guide to Artifacts of Colonial America*. Philadelphia: University of Pennsylvania Press, 1969. 🌐

They can be spread somewhat evenly across the site, or placed in clusters to simulate features such as buildings or trash deposits. Each box should represent a different site that is significant to your studies, with the artifacts being site specific, if feasible.

Each group of students needs a tape measure, string, garden trowel, some type of screen or colander, notebooks, artifacts, Ziploc bags (for artifacts), Sharpie markers, and 8 dowel rods.

As the archeological dig begins, the student-archaeologists will need to break the dig box into sections (depending on the size of the boxes they are using—two, four or eight quadrants may be appropriate) so that they will be able to determine the location of artifacts found in the soil. A student will place one dowel rod firmly into each of the four corners of the dig box and connect each dowel rod to the adjoining dowel rods using string. The students should then use the tape measure to determine the center of each side of the unit. Place dowel rods at each of these midpoints to create two quadrants by tying string between these two. This process can be repeated to create four or eight quadrants as desired, by including dowel rods in the center of the box. This gives students a grid system to make measurements for determining the location of artifacts in the dig box.

After the grid is set up, students can begin to dig. It is often easiest to split students into teams and each team member will have a specific task. These tasks include the person digging in the box, the person mapping artifacts and bagging them, and the one who takes notes. Forms can be created to provide a uniform description, although information can simply be recorded in a notebook. The information should include soil color, the artifacts included in the level, and the depth at the beginning of the level and at the end. It can include any features discovered, like pits, fireplaces, or burials, if the teacher has the time or desire to add them to the box. These modular dig boxes are modifiable and can be as simple or complex

as the teacher chooses. They should be tailored to the age of the students working on the project and the information that is being covered in the unit. For some examples, please see the sources in the notes.⁴

Once the excavations are completed, the artifacts and data can be used for a variety of projects. The artifacts can be incorporated into history discussions, comparing the sites that the boxes were supposed to represent, discussing a regional history, or comparing the regional history discovered through the excavation to a national historical context. Other potential projects include creating a presentation or mock museum exhibit to showcase the artifacts and the connections between the history and the actual methods and products of archaeology.

Conclusion

The purpose of modular archaeology is to teach archaeological procedures that can be used to understand excavations around the world. We do not teach students the principles of excavation with the idea that they will go off and excavate anywhere. In most countries that would be illegal, and in the United States, spontaneous excavations are illegal on public lands. We teach students to excavate so that they can understand that artifacts bring no understanding with them when unaccompanied by other information, and have the most to contribute when excavated in context. Essentially, we use archaeology to recreate the social relations of past cultures. When we understand the materials used by past cultures, we can hypothesize how these groups related to one another, how individuals lived, and compare to our own culture and life. We also teach modular excavations so that students can understand that they, community members, and scientists, must bring questions to an excavation before it starts.

Beyond these archaeological and historical concerns, modular excavations and the use of archaeological data can bring a lot of depth to a lesson. It can help students create their own ques-

tions about the past. It can create an activity where students can teach each other, thereby internalizing more fully the information, and it can create connections between different classes in the high school or middle school curriculum, most especially physical sciences and social studies. Artifacts and the process of discovery can bring history into the lives of students, spur curiosity, and easily allow the students to slip into the role of personally exploring and explaining the past.⁵ Above all, archaeology, like primary source documents, can augment historical discussion.

Notes

1. Explore Our World: Maryland Day 2006, www.marylandday.umd.edu.
2. James Deetz, *In Small Things Forgotten: An Archaeology of Early American Life* (New York: Anchor Books/Doubleday, 1996).
3. Maisha Washington and Amelia Chisholm, *Banneker-Douglass Museum Summer Camp Archaeology Curriculum* (unpublished, n.d.); Washington taught an archaeological course to Annapolis youth, most of whom were in the Banneker-Douglass Museum Summer Camp Program, which aimed at teaching elements of African and African American culture, including history, food ways, and crafts. The children were mostly African American, aged 6-11. This course took place over six weeks, and therefore was able to go into much greater detail than the one-day project that we use for the Maryland Day event.
4. Archaeology and Public Education, Society for American Archaeology www.saa.org/pubEdu/A&PE/; Barbara J. Little, ed., *Public Benefits of Archaeology* (Gainesville, Fla.: University Press of Florida, 2002).
5. See *Social Education* 67, no. 7 (2003).

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