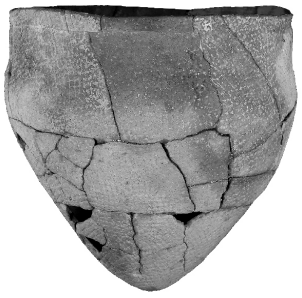
Lesson 2.8

MENDING POTTERY



Mended pot from Orange County, North Carolina, ca. AD 1000–1200.

Subjects: science, social studies, visual arts.
Skills: analysis, evaluation.
Strategies: observation, visualization, compare and contrast.
Duration: 45 to 60 minutes.
Class Size: any.

Objectives

In this exercise, students will mend broken pottery to learn what archaeologists learn by mending pottery.

Materials

For the teacher, a transparency of "Pottery Mending Tips." For each student, a pottery vessel which has been broken. For each table, rolls of masking tape, tubes of household cement such as Duco, shallow boxes or shoe boxes of sand, or cat litter, bottles of fingernail polish remover, cotton swabs or tissues.

Vocabulary

Crossmend: to fit together fragments of a single artifact that have been found in different soil layers or features; crossmending provides clues that allow one to infer relationships among various parts of a site.

Feature: a human-made disturbance in the ground, such as a pit or basin; it is often marked by a distinctive stain in the soil.

Mend: to fit together broken fragments of an artifact, such as a pottery vessel.

Sherd: a broken piece of pottery; a shard.

Surface treatment: the way the outside surface of a pottery vessel has been finished by the potter. On ancient Native American pottery from North Carolina, surface treatments typically consisted of stamped or impressed designs made by cordage, nets, fabric, or carved wooden paddles pressed into a vessel's surface while the clay was still wet.

Temper: material, such as sand or crushed shell, mixed with clay to make pottery stronger and to reduce the risk of it breaking.

Vessel: a hollow or concave utensil for holding something.

Background

Pottery began to appear commonly in North Carolina around 1000 BC. Native Americans used pottery for storing and serving food and liquids, for cooking, and, in some instances, as burial urns. Archaeologists have learned a great deal about the life of North Carolina's early peoples by studying the pottery they left behind.

Pottery objects are often found broken into many pieces which archaeologists call *sherds*.

While the fired clay from which pottery is made is very durable and survives many years buried in the ground, complete pottery vessels, such as pots or bowls, are not usually found by archaeologists. There are probably a number of reasons why a *vessel* was broken in ancient times. A person may have dropped it, or it may have broken during its original firing. Perhaps it broke after being put on a cooking fire. It may have broken during cold weather, when liquids held in the pot expanded when frozen. It may have been forgotten when people moved away and later cracked and broke.

Whatever caused the pottery to break, archaeologists can discover a lot of information by gluing or *mending* the broken pieces back together. By gluing small fragments into complete or partially complete pots, archaeologists determine the size and shape of pottery vessels. These features are important clues in determining the function of the vessel—whether it was used for cooking, storage, or eating.

Crossmending means that archaeologists try to mend pottery fragments found in different soil layers and *features*. If an archaeologist finds a crossmend between a cooking hearth and a trash pit, it suggests that these two features were being used at roughly the same time. The process of crossmending pottery is very important for establishing relationships between various parts of the site.

Mending pottery is a lot like putting together a jigsaw puzzle. First, archaeologists sort the pottery from a soil layer or a *feature*. They group the pottery based on *surface treatment*, decoration, vessel size and shape, rim diameter, and what type of *temper* has been added to the clay. By sorting the pottery fragments this way, archaeologists increase their chances of quickly finding pieces that mend. For example, if an archaeologist has two sherds whose surfaces had been cord marked, he might try to fit the broken edges together. But, if one of the cord marked sherds was tempered with fired clay, and the other with coarse sand, the archaeologist would know the two sherds could not be from the same vessel.

After sorting the pottery into piles of sherds that might be from the same vessel, archaeologists try to find pieces that glue back together. Before beginning to glue the pottery, they try to find as many mends as possible and use masking tape to hold the fragments together until they can be glued. In this way, they avoid having to take the mended pottery apart if they later find a piece they had missed. Sometimes it is difficult to make sure you have all the mends before you start gluing, so archaeologists use a special glue that can be dissolved if any mistakes are made.

Archaeologists do not always find all of the pieces of each pottery vessel. For example, if someone dropped a pot, pieces from it may have scattered across the ground. When cleaning up the broken pieces, some of the fragments may have been missed and not discarded with the rest of the broken pot. People may have also recycled some of the fragments of pottery for other purposes. For example, some Native North Carolinians ground broken pottery fragments into very small pieces to mix with clay for making new pottery. Archaeologists know from studying modern pottery-making cultures that people use broken pottery in a number of different ways: as scoops or ladles, as tools in manufacturing pottery, as animal feeders, and as children's toys, among other things. These pieces would be discarded at a later date and probably in a different place than the originally broken pot and, thus, may not be found by archaeologists. While archaeologists like finding all the pieces of a broken pot, it is not usually necessary to find every fragment in order to learn a pot's age, its use, and something about the people who made it.

Setting the Stage

Go over the background information with students. Spread the pottery sherds on a table. Have

students imagine that the sherds were found at an archaeological site. What might archaeologists learn about past cultures by studying pottery? What are some questions that archaeologists might ask about the sherds?

Procedure

1. Several days prior to the classroom exercise, purchase one piece of pottery for each student at a thrift store or yard sale, or have each student bring a piece that can be broken from home. Break each vessel (large pieces are probably best for exercise time considerations) and set aside one fragment. Mix remaining fragments.

2. On the day of the exercise, place the mixed fragments on a table. Give each student one of the set-aside sherds and tell them that this sherd is from the vessel they will be mending. (It may be easier to separate students into groups of eight or ten and use separate tables for each group, so there will be less of a scramble at the table for sherds.)

3. Project the transparency "Pottery Mending Tips" and go over strategies for effective mending with students. Caution students that some of the broken sherds may be sharp and to use care when handling them.

4. Have the students sort through sherds on the table based on color, thickness, vessel shape, decoration, etc. and collect the sherds they feel are from their vessel. Use glue or masking tape to mend the sherds. Masking tape can be used to hold sherds together until the glue dries, or while students fit sherds together.

5. Allow students time to mend their vessels. If there is not enough time to finish the mending process, allow the students to take the pottery home to finish mending it there, if they wish.

6. Students may clean the household cement from their fingers and hands using a small amount of fingernail polish remover on a cotton swab or tissue.

Note: Both household cement and fingernail-polish remover are hazardous substances. The students must be informed of the cautions concerning their use and should be instructed to use them sparingly.

Closure

Summarize the reasons why archaeologists mend and crossmend ancient pottery vessels.

Evaluation

Have students turn in their mended vessel for evaluation.

Extensions

1. In order to have this exercise also demonstrate the importance of crossmending, set part of the sherds from each broken vessel on two or three different tables. Divide the students so that equal numbers of students are assigned to each table. Tell them that each table represents a different archaeological feature (for example, one table could represent the sherds from a hearth, another table from a trash pit, and a third from the living surface inside a house). Students sort and tape together sherds from only one table first. What can they tell about their vessel after fitting together the sherds from only one table. Can they tell what their vessel was used for? Next, have them move onto the second and then the third table, sorting, taping, and finally gluing their vessels. Ask the students what types of information they determined about their pottery and the relationship of the various features through crossmending.

2. Before the mending process begins, set aside one or two additional sherds from each vessel

to illustrate that archaeologists rarely find all fragments of a vessel.

3. After the students have finished mending their vessels, have them sketch their pottery and describe it, based on vessel shape, size, decoration, etc. Ask how they think it was used. Ask them to try to suspend their knowledge of their own culture's pottery as much as possible and pretend that they are looking at the pottery shape for the first time. Have them look at the characteristics of the pottery: Is it thin or thick? Highly or minimally decorated? Glazed or unglazed? Shallow or deep? What can they tell about the object from looking at it?

Links

Lesson 1.3: "Observation and Inference."
Lesson 1.6: "Classification and Attributes."
Lesson 2.6: "Measuring Pots."

Sources

Joukowsky, Martha. 1980. *A Complete Manual of Field Archaeology: Tools and Techniques of Field Work for Archaeologists*. Englewood Cliffs, N.J.: Prentice Hall.

Rice, Prudence M. 1987. *Pottery Analysis: A Sourcebook*. Chicago: University of Chicago Press.

Ward, H. Trawick, and R. P. Stephen Davis, Jr. 1999. *Time Before History: The Archaeology of North Carolina*. Chapel Hill: University of North Carolina Press. [The image in this lesson's main heading is taken from Figure 4.11.]

Pottery Mending Tips

- Try to glue fragments from the base of the piece of pottery (the part that rests on the table surface when the vessel is complete) first. Finish by gluing fragments at the top or rim.

- When you have found a mend, spread glue in a thin coat along the broken edge of *one* fragment.

- Fit pieces together; wiggle slightly back and forth until they lock into place.

- Hold glued pieces together with masking tape and embed them upright in sand or cat litter with the two glued edges pressing against one another. Place the larger of the two sherds on the bottom. Let dry about ten minutes.

- In order to tell if you have made a good mend, you should be able to lightly draw a fingernail over the mend and not have it catch or snag. Another way to check is to hold the mended pottery up to the light. If no light shows through the mended crack, then you have made a good mend.