

Lesson Three: Mississippian Daily Life

Objective: Students will examine and investigate the daily life of Native Americans at Winterville Mounds and compare and contrast their lifestyle and culture to that of other Native American groups of the time period. They will then conduct a science experiment inspired by the crops grown by the Mississippians, construct a Mississippian home, and play the role of an archaeologist as they piece together pottery from the past.

Materials: *Winterville Mounds Native American Mississippi World*; Internet access and/or books about Native Americans; *Building Your Terrarium*; *Scientific Vocabulary*; *Scientific Log*; *Wattle and Daub House Directions*; *Puzzle Pieces* and *Puzzle Worksheets (A, B, C, and D, for each)*; scissors; glue; construction paper; *Follow the Sherds*.

Activity One: Researching the Past

1. Distribute *Winterville Mounds Native American Mississippian World*.
2. Divide students into groups and assign an aspect of Native American life for students to research. Examples include food, clothing, home construction, jobs, games, religion, special events, etc.
3. Using their textbooks, library books, the Internet or any other resource approved by the teacher, have students research their specific topic and then compare and contrast it to our modern day equivalent.
4. Have students present their findings to the class.
5. If time allows, or if the Mississippian culture has been studied as a class, divide students into groups and have them research similar topics about another Native American cultural group. This could include the Plains Indians, Iroquois, Anasazi, Inuit, Blackfeet, or Seminole. Have students share their findings with the class or write compare and contrast papers comparing their studied group with the Mississippians.

Activity Two: Plant Some Seeds and Watch Them Grow

1. Distribute *Winterville Mounds Native American Mississippian World*.
2. Prepare students to plant their own crops with the *Building Your Terrarium* worksheet. If needed, distribute the *Scientific Vocabulary* worksheet to help students become familiar with science terms. Discuss the procedure for building a terrarium. Have students determine what seeds they will plant.
3. Distribute the *Scientific Log*. Have students decide on the title, purpose, and hypothesis of their experiment. If they are designing their own experiment (see *Building Your Terrarium*), have students fill in the details of their design in the procedures section.

Activity Three: Home Sweet Home

1. Use the *Wattle and Daub House Directions* and its material list to build Mississippian homes in groups or as individuals.
2. Allow students the opportunity to display their houses.

Activity Four: Pieces from the Past

1. Distribute corresponding *Puzzle Pieces* and *Puzzle Worksheets* to students along with scissors, glue, and construction paper.
2. Instruct students to cut out their pieces and assemble them before gluing them on to a piece of construction paper.
3. After piecing together their archaeological finds, students should answer the questions on the worksheet.

4. Give students time to share their answers with the class and discuss with them the challenges and importance of archeology.
5. If time allows, use *Follow the Sherds* to trace the journey of an artifact from site to museum. Discuss with students which jobs they would like to perform while working with artifacts.

Extension Activities:

Buffet Delight: It has been estimated that two-thirds of what the world eats today has its origins in the New World and Native Americans foods. For example, Hungarian goulash would not be possible without paprika which is made from peppers that were discovered in the New World. Many foods that we consider Mexican today, such as tamales, originated with the Native Americans. Southern staples such as cornbread and barbeque also have Native American ties. Bring snacks into the classroom of foods from the New World such as sunflower seeds, jerky, popcorn, and chocolate.

Culture on Film: View *The Native Americans: The Tribes of the Southeast*, where members of the five ethnic groups of the Southeast – Cherokee, Chickasaw, Choctaw, Muskogee Creek, and Seminole – are brought together to discuss their history from the Mississippian mound builders through the Oklahoma Land Grab of 1889. The panelists describe their efforts to maintain their culture in modern times through traditional songs, dances, farming techniques, artistic craftsmanship, and the game of stick ball. Archival photographs, paintings, and film footage illustrate the histories of these Native American ethnic groups. Produced by TBS Productions, Inc. for Turner Home Entertainment, 1994. 48 minutes, color. Ninth to twelfth grade.

This film can be borrowed free of charge from the Mississippi History on Loan Collection. Go to <http://mdah.state.ms.us/new/learn/classroom-materials/mississippi-history-on-loan-film-collection/> or contact the Outreach Programs Coordinator at 601-576-6997.

Building Your Terrarium

Materials: One 2-liter plastic bottle per student; scissors; rocks, pebbles, or activated charcoal; potting soil; seeds of your choice (see notes below); marker; ruler; popsicle sticks; tape; *Scientific Log*.

Use the following directions to build your terrarium:

1. Cut the 2-liter bottle into two parts, about 5 inches above the bottom of the bottle.
2. Place several rocks, pebbles, or pieces of activated charcoal in the base of the bottle to allow water drainage.
3. Fill the base of the bottle with potting soil.
4. Plant seeds. Remember that too many seeds placed too closely together will compete with each other for resources and not grow properly. Six seeds or less are enough for this size terrarium.
5. Use a ruler and a permanent marker to mark measurements on a popsicle stick. One inch above its base draw a line and label it “zero.” Make additional lines and labels at the 1, 2, 3, etc. centimeter marks.
6. Place popsicle stick in bottle with its “zero” label at the soil level.
7. Add water.
8. Slide the top of the bottle back onto the base. Tape the two pieces together. Ensure that the bottlecap is secure. If the cap is missing, tightly seal the opening with tape.
9. Place in desired location to await germination. Follow directions on back of seed packet to place in correct lighting.
10. Use the *Scientific Log* to take regular measurements and make observations about the plants as they grow.

Design your own experiment! What’s better for plants: water or kool-aid? Twelve hours of sunlight or 24-hours of darkness? Living inside or living outside? Being in the ground or being in a pot? Have students determine what they want to know about plant growth, write a hypothesis, design an experiment, and find out the answer. Designate a control plant (Plant A) that is grown according to seed packet instructions to compare with the student-designed experiment plant (Plant B).

Notes for the Teacher:

Choice of seeds: The MDAH Education Staff tested a variety of vegetable seeds for this unit. The quickest to germinate were radishes, which sprouted within 24-hours. Students could observe these on a daily basis and see noticeable change. Others that provided quick results were beans, basil, lettuce, and pumpkins which would offer excellent every-other-day observations. Tomatoes, peas, peppers, and chives took longer to sprout and would be best observed on a weekly basis. Within several weeks of germinating, the plants will need to be transplanted. At this point, they can be sent home with students or added to a school or local community garden.

Harvesting your produce: The MDAH Education Staff was most successful with its basil, radishes, lettuce, tomatoes and especially its beans and peppers. Be prepared to wait a longer period of time from planting to harvest than is notated on the back of seed packets.

NAME: _____ DATE: _____

Scientific Log

Title of Experiment: _____

Name of Lead Scientist: _____

Experiment Start Date: _____

Purpose of Experiment: _____

Hypothesis: I think that _____

because _____

Procedures Followed:

1. Terrarium Constructed.
2. Type and number of seeds planted: _____
3. Amount of water provided: _____
4. Location of terrarium: _____
5. Special Instructions (includes frequency of watering, changes in light or temperature conditions, or any additional variables):

Data Interpretation:

Interpret your data using one of the following methods:

Graphing: Using a sheet of graph paper, make a line graph showing the daily/weekly growth of your plant. If testing two variables (such as one plant with water and one without), create a bar graph showing the daily/weekly growth of the plants.

Ratios: Determine how many seeds germinated compared to those that did not germinate. Find the ratio of your terrarium and then the median ratio of those in the whole class.

Conclusion:

Write a conclusion summarizing what you have learned from your experiment. It should include the following:

- A restatement of your purpose and hypothesis.
- An explanation of how you conducted your experiment and any problems you encountered.
- A summary of your results and any surprises they may have offered.
- A decision on whether your hypothesis was correct or incorrect and why or why not.
- What your next steps or future experiment would seek to clarify.
- Changes you would make to the experiment in the future.

NAME: _____ DATE: _____

Scientific Vocabulary

Use the list below to familiarize yourself with some new words that you will encounter while building your terrarium.

conclusion: to sum-up the outcome of an event or idea.

control: a standard of comparison for checking or verifying the results of an experiment.

data: facts or items of information.

experiment: a test or trial to discover something unknown.

germinate: to begin to grow or develop.

hypothesis/theory: a guess of what will occur.

independent variable: one aspect of an experiment that is manipulated in order to observe its relationship to the control.

observation: to attentively watch.

procedure: a specific course of action or steps.

purpose: the reason to do something.

terrarium: an enclosed container for growing plants under scientific observation.

variable: factor or condition subject to change.

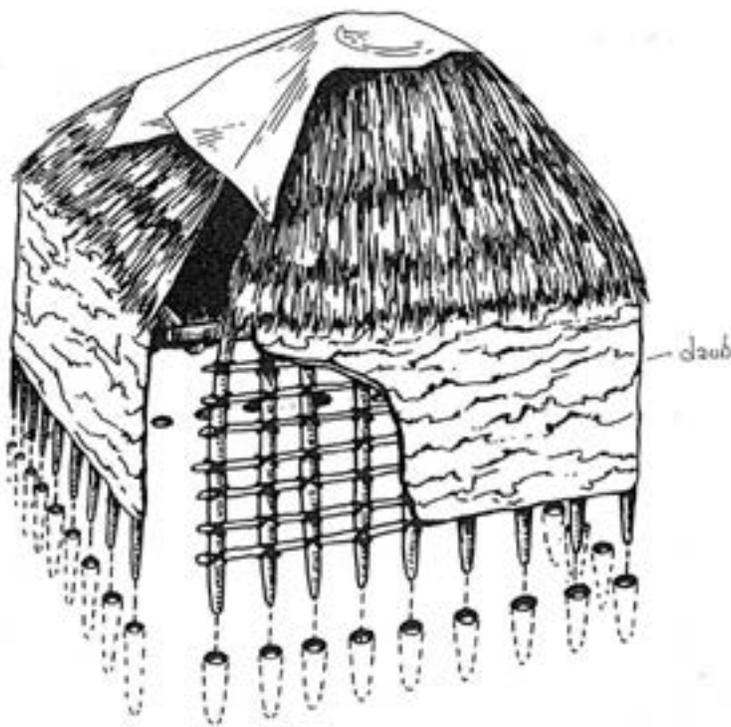
water cycle: the circle of the earth's water, where water evaporates from the oceans into the air, then returns to earth as rain or snow, and then returns to oceans by the rivers.

Wattle and Daub House Directions

Materials: Cardboard base; tree branches; clay; flexible twigs or vines; dirt and water, mixed; straw or dried grass

Directions:

1. Have students collect tree branches, twigs, vines, straw and grass to use in the construction of their wattle and daub houses, much like the Native Americans would have used the natural resources around them.
2. Use four heavy-duty tree branches to form the four corner posts of the house. Secure each to cardboard base with clay or, if building outside, push 2-3 inches into the ground. If creating a larger house, add an additional stick or branch mid-wall for added strength. **Note:** Houses with walls less than ten inches in length tend to be easier and quicker to build, as well as more stable.
3. Using flexible sticks, twigs, or vines, weave them back and forth between the posts, from the ground to the top of the posts. Leave one area near a corner open as a doorway.
4. Using your hands, reinforce the walls and fill in their cracks with mud.
5. Lay some tree branches flat across the house to act as a roof and secure with mud.
6. Lay straw or dried grass on rooftop.
7. Allow to dry.



Cross-section of a wattle and daub house. Yesterday's River, The Archeology of 10,000 Years along the Tennessee-Tombigbee Waterway by David S. Brose, U.S. Army Corps of Engineers, 1991 (left). A reconstructed wattle and daub house. MDAH, Grand Village of the Natchez Indians (right).



Puzzle A Pieces



NAME: _____ DATE: _____

Puzzle A Worksheet Answer Key

This long-necked ceramic bottle and simple pot were found at an excavation site at Winterville Mounds along with two bone implements and a stone palette and grinder. The bottle is a type of pottery called Mississippi Plain, *var. Yazoo*. More pottery of this type was found at Winterville than any other. The bottle is in the shape of a squash. Along with corn and beans, it was one of the most important agricultural crops grown by the Mississippians.

After piecing together your archaeological finds, examine them to answer the following questions.

1. Both of these vessels were found broken and incomplete by archaeologists. How does this make studying the vessels and understanding the people who owned them difficult?

It can be difficult to have a full understanding of an object that is incomplete because you never know what could have been on the missing piece. Was it an important symbol or design? A handle that could have given a clue to the object's use? An artist's signature? These missing pieces make it important to compare incomplete objects to other similar objects (complete or incomplete) and to different objects found around it that could give clues to what it was and how it was used.

2. The bottle is in the shape of a squash. What does this tell you about the value Mississippians placed on agriculture?

If Mississippians took the time to design and make bottles in the shape of a squash it probably meant that squash was an important part of their lives. This theory is strengthened by archaeological evidence that shows that the Native Americans were farmers whose main crops were corn, beans, and squash.

3. These vessels were found with two bone implements and a stone palette and grinder. Does this provide you with any clues about what these objects were used for? Explain your reasoning.

One theory is that these were all cooking instruments. The bottle and pot could have been used for cooking or storing food; the bone implements could have been used for mixing or serving food; and the palette and grinder could have been used to grind food such as corn.

Puzzle B Pieces



NAME: _____ DATE: _____

Puzzle B Worksheet Answer Key

The long-handled ceramic cup was made of clay mixed with twigs, leaves, and ground bone. The ceramic jar was made of clay and crushed mussel shells. The thickness of each vessel also varies. The walls of the cup measure between four and ten millimeters, while the walls of the jar only measure between one and four millimeters. Its thin walls indicate that rather than being a vessel for daily use it was considered a superior object for special use. Both were found at an excavation site at Winterville Mounds.

After piecing together your archaeological finds, examine them to answer the following questions.

1. Both of these vessels have very different shapes. Their walls are different thicknesses, and they show varying amounts of wearing and breakage. How do you think these facts have impacted the longevity of the vessels? Explain your reasoning.

A short, squat vessel with thick walls would most likely have withstood daily use better than a vessel with a thin neck or handle and thin walls which would have been more likely to break. Likewise, a vessel that was more sturdily made would be more likely to survive intact (or at least in a better, more complete condition) over hundreds of years.

2. The jar is made of mussel shells and baked clay and is unique to Mississippian culture. Where do you think the shells came from? Why were they used in pottery? Explain your reasoning.

Shells are very common in the Mississippi River and the streams and rivers that run throughout the Delta region. Native Americans were very careful to use their natural resources to their fullest potential. An example of this is in hunting when the meat from the animal is eaten but the hide is used to make clothes and the bones to make tools and weapons. The amount of shells available in the region would have allowed Native Americans to use them for decorative purposes (such as jewelry) as well as for practical purposes (such as pottery). When mixed with clay and baked, shells can create a stronger material to make everyday objects out of, such as pottery that was used for cooking, eating, and storage.

3. The fragility of the ceramic jar indicate that it was reserved for special use. What sort of occasion do you think it would have been used for and why?

Native Americans celebrated special occasions as people do today. A special object such as this could have been used in religious ceremonies, holidays, weddings or other significant community events.

Puzzle C Pieces



NAME: _____ DATE: _____

Puzzle C Worksheet Answer Key

This is a high-quality vessel and a type of pottery known as Leland Incised, *var. Bethlehem*. It features whorl, meander, and running scroll design motifs that create an “eye” or “ogee.” This is a common symbol found in Mississippian designs.

After piecing together your archaeological find, examine them to answer the following questions.

1. This vessel is highly decorated. Who do you think would have owned it and why?

A highly decorated object could indicate that it was owned by a very wealthy or very important person. If archaeologists found it nearby other similar objects that were also decorated or highly valuable, it would support this theory.

2. The “ogee” motif can symbolize entry to the underworld, a cave, or a human eye. Can you tell which the ogee symbolizes in this vessel? Why or why not?

Unfortunately, not much information is known about this vessel to know for sure what the ogee symbolizes. The difficulty is enhanced by the fact that part of the side wall is missing. Many theories could be suggested about what the ogee symbolizes. For example, some Native American origin stories state that their people sprung from a mound or cave. But to understand the meaning of the ogee in this particular vessel it may be important to learn where it was found.

3. This vessel was found broken and incomplete by archaeologists. How does this make studying the vessel and understanding the people who owned it difficult?

It can be difficult to have a full understanding of an object that is incomplete because you never know what could have been on the missing piece. Was it an important symbol or design? A handle that could have given a clue to the object’s use? An artist’s signature? These missing pieces make it important to compare incomplete objects to other similar objects (complete or incomplete) and to different objects found around it that could give clues to what it was and how it was used.

Puzzle D Pieces



NAME: _____ DATE: _____

Puzzle D Worksheet Answer Key

This bowl was found by an amateur archaeologist near Mound B at Winterville. It looks similar to bowls found at the Cahokia Mounds in Illinois. It is a type of Barton Incised pottery which often has incised lines, cross-hatching, or triangles decorating the vessel below the rim.

After piecing together your archaeological find, examine them to answer the following questions.

1. Why is it important for amateur archaeologists to turn their finds over to museums instead of keeping them for themselves?

It is important for amateur archaeologists to give their finds to museums for many reasons. First, if they find one object or piece of an object more may be in the same area. Second, the sharing of knowledge in archeology is important. The more pieces of a puzzle that are known the better and more complete picture of the puzzle can be understood. Third, objects that are hundreds or thousands of years old need special care to protect them for future generations. Sometimes the exposure to air for even a few minutes can cause irreversible damage to very old objects that have remained underground or underwater for centuries. Archaeologists know how to care for these delicate objects. There are also many laws in place that protect Native American objects and remains. In 1990, the Native American Graves Protection and Repatriation Act (NAGPRA) was enacted to ensure the protection and respect of Native American archaeological evidence. Finally, before beginning an amateur archaeological excavation, one must receive permission from the landowner and determine who will take possession of any findings (the amateur archaeologist, the landowner, or a museum).

2. This bowl was found in the vicinity of a mound believed to be used by priests. Do you think it could have been used in religious ceremonies? Why or why not?

3. This bowl is similar in design to those found at Cahokia Mounds in Illinois, 300 miles north of Mississippi. Do you think the Winterville Mississippians had contact with Cahokia Mississippians or did they each come up with the design on their own? Explain your reasoning.

It is most likely that the Cahokia Mississippians had contact with the Winterville Mississippians, as there is much evidence of trade up and down the river stretching well into the past. They would have brought with them tangible objects such as pottery and clothing as well a different methods of farming and construction that they would have utilized in their new home.

Follow the Sherds: The Journey of an Artifact from Site to Museum

What happens to an **artifact** after it is removed from the ground? Below is the multi-step process that begins once an artifact is discovered.

1. Excavating
2. Washing
3. Sorting
4. Analyzing
5. Labeling
6. Photographing
7. Reconstructing
8. Bagging
9. Displaying

Where do the sherds come from?

Imagine this hypothetical situation from over 1,000 years ago. An Indian woman is carrying a jug of water. She stumbles on a rock, falls down, and the jug hits the ground. Because the jug is made of pottery it breaks into over 100 pieces. She gets up, straightens out her clothing, and walks back to her home to get another jug. But what happened to the jug that was dropped? The pieces remain where they lay, scattered across the surface of the ground. As the years go by, the broken pieces are eventually buried under sticks, leaves, and other debris and forgotten.



Potsherds recovered from Winterville Excavation. Left: Photo courtesy of the Anthropology and Sociology Department and Dr. H. Edwin Jackson, University of Southern Mississippi. Right: Photo courtesy of Mark Dingeldein.

Excavating

One thousand years later, a group of archaeologists are investigating the site of a former Indian village. After excavating several **sterile levels** of a **test unit**, one of the workers locates several **potsherds** from the Indian woman's broken jug.



Archaeologists excavating a test unit at Winterville Mounds. Photo courtesy of the Anthropology and Sociology Department and Dr. H. Edwin Jackson, University of Southern Mississippi.

The pieces of pottery are inscribed with a pattern, but there is so much debris stuck in the grooves of the pattern that it's hard to tell exactly what they signify. The archaeologists place the potsherds into an artifact bag and write a **catalog number** and the **provenience** on the outside of the bag. There is also a brief description of the contents written on the bag. A sample bag identification layout is below:

22WS500-2012 (site number and year of project information)
Catalog # 453 (provenience location information)
Test Unit 5, Level 5 50-60 cmbs (excavation location information)
17 July 2012, MD, KF (3 sherds) (date, excavator's initials, artifact number, and type)

At the end of the day all the artifacts collected will go into a box that is sent to the laboratory for further processing.

Washing

At the laboratory, each provenience bag is emptied onto its own individual washing tray. Great care is taken to insure that no artifacts are separated from their specific provenience tray. Each tray of artifacts is washed separately, and sometimes an old toothbrush is used to remove stubborn debris from the grooves. Once cleaned they are placed on a drying rack to air dry. When dry, the artifacts are moved to the next phase of processing.



Pottery sherds in a washing tray. Photo courtesy of Mark Dingeldein.

Sorting

The next step involves sorting the artifacts. This is where they are grouped into specific categories, such as potsherds, bones, points, stone flakes, and other categories. During this phase the individual groups of artifacts are also counted, and bone will be weighed (due to its tendency to crumble and break).



Pottery sorted by type. Photo courtesy of Mark Dingeldein.

Analyzing



Left: Pottery identification in USM laboratory. Photo courtesy of the Anthropology and Sociology Department and Dr. H. Edwin Jackson, University of Southern Mississippi. Right: Examination of design pattern. Photo courtesy of Mark Dingeldein.

During analysis, the pottery sherds are carefully examined under a magnifying glass so that cultural identification can be determined. The archaeologist will look closely to determine what type of clay and **tempering agents** were used to make the pot. He or she will also determine the style of decorations that are on the exterior of the pot as well as the shape of the vessel's rim. The archaeologist can then compare this information with previously published guidebooks for identification of pottery recovered from the area of the excavation to determine the exact type and **cultural affiliation** of the pottery in question.

Labeling

Frequently artifacts are removed from their provenience bags for extended periods of time; in order to guarantee that they are returned to the proper bag, they have their catalog number and location information written on them. In the case of pottery, this information is usually placed on the inside or backside of the vessel. For **projectile points** and other artifacts the number is written in an unobtrusive location. A clear coating of **B-72** is painted in a small area of the artifact, and then the catalog number is written over this coating, after which another layer of clear coat is applied over the number. This will seal in and protect the catalog number to allow for further handling. The coating may be removed by professionals as needed. A sample artifact bag is at right:

2012—453 22WS500 TU 5, LVL 5 Sherds (3)

Photographing

Sometimes an artifact is removed from its provenience bag to be photographed. This usually occurs when the artifact is to be displayed in the final report. Other times an entire group of artifacts are photographed together to see if they will match up, similar to how pieces of a jigsaw puzzle fit together. It is much easier to compare artifacts by using photos than by using the artifacts themselves.



Homemade light box. Photo courtesy of Mark Dingeldein.

Ideally, taking a picture of an artifact requires the use of a light box. This allows the photographer to control the amount and angle of light in a laboratory setting to achieve a better quality picture. This process also requires use of a camera stand for camera stability.

Reconstructing

Once potsherds have been matched up by use of photographs and other methods, they will be removed from their respective provenience bags for the long and time-consuming process of reconstruction. Each individual sherd is carefully matched to a companion piece, and a glue called B-72 is used as a bonding agent to attach the pieces to one another. Pieces are subsequently added until the object will begin to assume its original shape. Usually not all of the missing pieces are recovered during an excavation, and so the reassembled object (such as the pot below) will often have visible gaps.



Reconstructed pot at Winterville Museum. Photo courtesy of Mark Dingeldein.

Bagging

After an examination of the artifacts has been completed, they are then prepared for their next destination at a **curation facility**. They are first placed into small plastic bags with the provenience information written on the outside of the bag using a permanent-ink marker pen. Inside the bag is a tag with identical information printed on acid-free paper. All of the bags are then placed into acid-free storage boxes with inventory sheets listing the contents of the boxes included. Once the boxing process is complete the collection will be transferred to the curation facility.

Displaying

Certain artifacts may be separated from the main collection in order for them to be placed on display within a museum. These may include reconstructed pots, individual pot sherds with unique decorative patterns, or other artifacts determined worthy of display, such as **lithic tools**. These artifacts will be delivered to the museum and their presence logged into the museum's artifact inventory database. Some items may not be displayed in museums, specifically those protected by NAGPRA, the Native American Graves Protection and Repatriation Act. NAGPRA laws ensure that human remains, funeral objects, sacred objects, and certain other cultural objects are treated with respect and are returned to the appropriate Native American ethnic groups (or their descendants) for proper care. Learn more at <http://www.nps.gov/nagpra/FAQ/INDEX.HTM>

Conclusion

As can be seen above, there is a well-defined road a potsherd follows as it makes its way from an excavation site to an archaeology laboratory, and then to storage in a curation facility or display in a museum.

Archaeologist Terms

artifact: a material object created by humans—must be at least 50 years old.

B-72: an acrylic thermoplastic resin that is used for the labeling and reassembly of artifacts.

catalog number: an identification number assigned to a specific provenience.

cmbs: centimeters below surface.

cultural affiliation: the specific ethnic group or societal group that an artifact is associated with.

curation facility: a secure place where artifacts may be stored in a controlled environment.

level: a measure of depth during an archaeology excavation, usually measured in units of ten centimeters.

lithic tools: tools that are made from shaped and fractured stone.

potsherds: broken pieces of pottery.

projectile points: commonly referred to as arrowheads, a flaked and sharpened stone tool.

provenience: the unique location within a site where artifacts are recovered.

sterile: an excavation level where no artifacts are recovered.

tempering agent: material added to clay to make pottery stronger, usually shell, plant fibers, sand or grog (broken pottery).

test unit: a measure of area to be excavated, usually measured in one meter by one meter squares.