2011 ARCHAEOLOGICAL INVESTIGATIONS AT HISTORIC YATES MILL COUNTY PARK, WAKE COUNTY, NORTH CAROLINA

by

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ABSTRACT

Archaeological investigations were undertaken at Historic Yates Mill County Park (31WA1035) as part of a series of workshops designed to teach basic archaeological concepts to North Carolina teachers. The primary objectives of this project were to: (1) promote archaeology and heritage education; (2) improve the visibility and accessibility of preservation efforts at the park; and (3) investigate the remains of a miller's residence associated with Yates Mill. Eleven teachers were involved in the fieldwork, and more than 100 visitors were able to observe the excavations during a public open house held the Saturday after the workshops. The excavations consisted of four 1×1-m excavation units established across an area thought to be the site of an old miller's residence and the subsequent location of a 1960s-era classroom. Investigations revealed that the entire area had been mechanically disturbed down to bedrock during demolition of the classroom. No intact deposits associated with the miller's house were identified.

ACKNOWLEDGMENTS

Many individuals and institutions contributed to the success of the workshops and excavations at Historic Yates Mill County Park. The project was funded by the North Carolina State Historic Preservation Office through a 2011 Historic Preservation Fund Pass Through Grant. Dolores Hall initiated the project by bringing the grant program to our attention and provided valuable assistance and encouragement throughout the planning and implementation phases. Allison Ribaudo and Rebeccah Cope wrote the grant proposal submitted by Wake County. Michele Patterson McCabe assisted with the coordination and administration of the grant. The Yates Mill park staff provided a classroom, field supplies, and administrative support. The Research Laboratories of Archaeology at the University of North Carolina at Chapel Hill loaned field equipment and vehicles. Finally, the following 11 workshop participants helped with the excavations and shared ideas for bringing archaeology into the K–12 classroom: Barbara Buescher, Susan Donn, Jenni Heartway, George Haislip, Lisa Hribar, Patty Korman, Victoria Rans, Christopher Touch, Julie Telenko, Claudia Toussaint, and Emily Trudeau.

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INTRODUCTION

During the week of July 11–16, 2011, archaeological fieldwork was conducted at Historic Yates Mill County Park (HYM) in Wake County, North Carolina, under ARPA permit #103. This work was funded by a North Carolina Historic Preservation Fund Pass Through Grant with additional support provided by HYM and the Research Laboratories of Archaeology at the University of North Carolina at Chapel Hill. The fieldwork was part of a series of workshops designed to help K–12 teachers learn to effectively teach archaeological concepts in the classroom. The primary objectives of the project were to: (1) promote archaeological and heritage education; (2) improve the visibility and accessibility of preservation efforts at HYM; and (3) conduct archaeological research. On all points, this project can be considered a success. Eleven teachers participated in three workshops that combined classroom activities with hands-on instruction of archaeological principles and techniques. A public open house hosted by HYM on Saturday, July 16, was attended by more than 100 people who observed the recovered artifacts (Appendix A) and open excavations. Finally, all workshop participants received customized teaching kits with lesson plans, activity materials, books, and videos appropriate to their particular grade levels and subjects (Appendix B).

The research component of this project focused on investigating the suspected location of a miller's residence that had been occupied near the end of the mill's use. An elevated clearing located just south of the dam had been interpreted by park staff as the approximate location of an old miller's residence and the site of a subsequent 1960s-era classroom associated with North Carolina State University (NCSU; Figure 1). A black and white photograph taken from near the dam looking south across the pond shows a

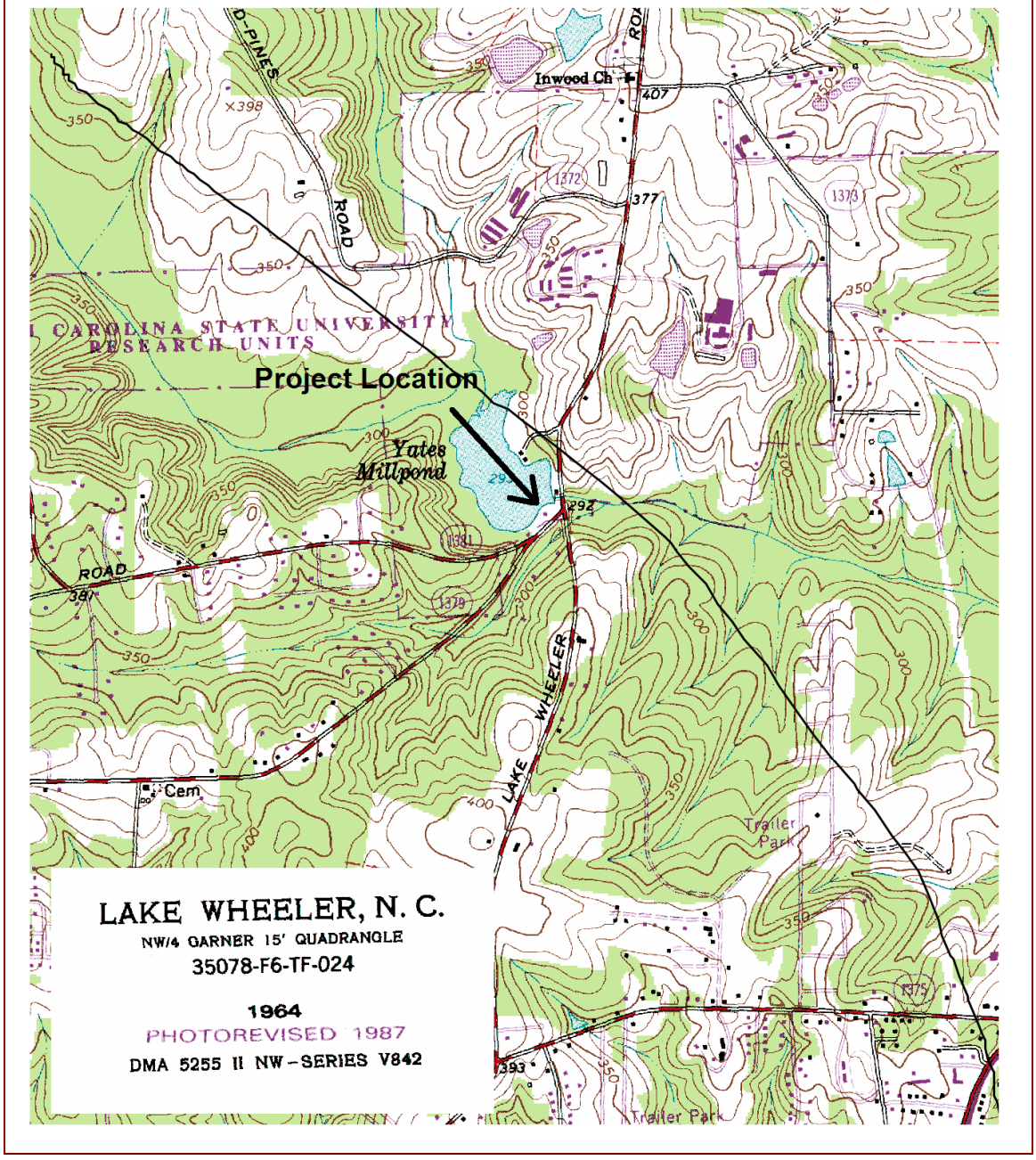

Figure 1. Location of Historic Yates Mill County Park (HYM) and project location.

Figure 2. Photograph of miller's residence (facing south?).

small white structure standing in this approximate location (Figure 2). While the date of the photograph is unknown, it is believed to depict the miller's residence in question.

Four 1×1-m excavation units were dug as part of these workshops. While no intact archaeological deposits were discovered associated with a miller's residence, several artifacts recovered during the investigations might be attributed to this occupation. The vast majority of the material encountered during excavation, however, was associated with the later classroom facility and had been thoroughly disturbed during its demolition.

BACKGROUND

The following history of Yates Mill was abstracted from the Yates Mill Historic Structure Report (Smith and Bryant 1991; excerpted from Lautzenheizer 1992:7–8):

Available records indicate that the first mill on the site was constructed by Samuel Pearson between 1746 and 1778. Pearson may have moved to the area as early as 1748 from New Bern. The area was part of Johnston County at that time, as Wake County was not established until 1770.

Pearson may have acquired land in Johnston County from John Monk around 1750. The first documented transaction, however, is for a Granville Grant which was surveyed for Samuel Pearson in 1756. A title entered in Wake County indicates that Samuel Pearson's land contained "640 acres...on the North side of Swift Creek and on both sides of the waters of Steep Hill Creek joining his own land on the South and West sides, encluding his mill of running up 2nd? creek for Complyment [sic]."

At Pearson's death in 1802, his will divided the 1,490-acre estate among his four sons. His wife received a life estate in the "plantation" house. His son Simon received 340 acres including the old mill.

Simon apparently purchased his brothers' shares as well as additional property. He was forced to sell the mill and his acreage in 1819 at a sheriff's sale. The property was sold to William Boylan.

References to Boylan's Mill in 1849 indicate that the mill had recently been repaired and a sawmill, flour mill, and gristmill were operating. Steep Hill Creek was said to provide a less constant source of water during times of drought than the larger Crabtree and Walnut creeks.

Boylan sold the mill in 1853 to John Primrose, Thomas Briggs, and James Penny. In 1858 the mill was apparently owned by Penny, Briggs, and Company, and in 1859 James Dodd bought John Primrose's share of the mill.

The 1860 Manufacturing Census lists the mill of James Penny and Company as a wheat, corn, and saw mill. In 1863, Penny, Briggs, and Dodd conveyed the mill to Phares Yates, James Penny's son-in-1aw. The 1870 census lists the mill, still known as Penny's Mill, as having two wheels. …

In his will, dated 1902, Phares Yates left his estate, including the mill, to his wife, Roxanna Penny Yates, and their son, Robert E. Lee Yates. When Robert died in 1937, he left the mill to Minnie John Yates. Minnie Yates sold the mill to Trojan Sales Company in 1947. Later that year the mill was conveyed to N.C. Equipment Company. The mill was closed in 1953.

In 1963 North Carolina State University purchased the 1,000-acre tract, which included Yates Mill and pond for use as a research facility. The mill possibly operated once more around that time when the former miller, John Lea, ground a bushel of corn for photographers.

Previous Archaeological Investigations

In 1992, prior to the restoration of Yates Mill, limited archaeological investigations were conducted by Coastal Carolina Research, Inc. in order to determine the presence of intact deposits under and adjacent to the standing mill structure (Lautzenheizer 1992). Three test units were opened beneath the mill to identify structural remains as well as any evidence of additional water wheels. While these units exposed numerous artifacts that dated mostly from the late nineteenth and early twentieth centuries, the absence of eighteenth- and early nineteenth-century material was attributed to extensive erosion in the area around the mill. Another goal of this work was to locate likely areas for support structures associated with the mill, specifically a miller's house. A series of 19 shovel tests were excavated in an area on the east side of Lake Wheeler Road where bricks and other debris had been observed, but no evidence for such a structure was identified during the 1992 survey. No archaeological work was conducted in the vicinity of the 2011 investigations.

2011 INVESTIGATIONS

The research objective of this project was to investigate an area thought to be the site of an old miller's residence that was used prior to the mill's closure in 1953. The park staff had identified a relatively level clearing on the opposite side of the dam from the mill as the approximate location of the structure that appears in an early photograph (Figure 2). An interpretive park sign that now marks this area also references the "white, one-story house" that once stood there (Figure 3). Other than its general location, not much else was known about the residence, including when it was constructed or

Figure 3. An interpretive signboard at the site referencing the miller's house (looking west).

demolished. By opening a series of 1×1-m test units across the presumed center of the site, our goals were to recover temporally diagnostic artifacts associated with the miller's residence and determine whether intact architectural elements were present.

Establishing the Grid

Despite the previous archaeological work at HYM, no permanent datum had been established near the proposed excavation area. A 3/4×18-inch metal stake was used to demarcate an arbitrary site datum at 100R100 with an elevation of 100 m. The stake was driven into the ground near a wooden fence at the southern edge of the grassy clearing that had been identified by park staff as the probable location of the miller's residence. This grid point was approximately 2.68 m west-southwest (248º) off magnetic north from

the western edge of a circular concrete septic cover. From this point, a surveyor's transit was used to sight in the R100 line along magnetic north, and grid points were set in every 5 m across the central portion of the excavation area. Four excavation units were defined along this line (105R100, 110R100, 115R100, and 120R100).

Unit Excavations

Each excavation unit was defined by its southeast corner and marked by four corner nails set out with reference to the R100 line. The units were then hand excavated according to natural levels using shovels, picks, and trowels, with each unit excavated down to either undisturbed subsoil or bedrock (Figures 4–9). All sediment was collected and screened through 1/4-inch mesh to recover cultural material. Objects identified as modern building debris (e.g., cinderblock, brick, lumber, foam insulation, etc.) were noted on the field forms and discarded. After excavations were completed in each square, the unit walls and floor were troweled to produce a clean surface and then photographed (Figures 10–11). Unit depths were recorded using the transit, and the north and east profiles of each unit were mapped (Figures 12–13). The recovered material was preliminarily washed in the field by workshop participants and displayed during the public open house (Figures 14–16).

Results

The 2011 excavations at HYM revealed that each of the four excavation units contained at least two distinct zones of fill. Zone 1 consisted of brown (7.5YR4/3) silty sand/loam mixed with various amounts of red clay and was found across all four units.

Figure 4. David Cranford teaching participants how to lay out excavation units.

Figure 5. Mary Beth Fitts removing the first layer of fill.

Figure 6. Workshop participants excavating with shovels and screening.

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Figure 7. Workshop participants using a mattock to excavate through compacted soil.

Figure 8. Archaeologists interacting with workshop participants.

Figure 9. Workshop participants excavating unit 120R100.

Figure 10. A workshop participant preparing the base of an excavation unit for photographs.

Figure 11. Mary Beth Fitts photographing completed excavations with HYM staff looking on.

Figure 12. Workshop participants recording soil color and other level characteristics.

Figure 13. Workshop participants sketching the base of a level.

Figure 14. Workshop participants washing excavated materials.

Figure 15. Megan Kassabaum washing artifacts with park visitors during Archaeology Day.

Figure 16. Theresa McReynolds Shebalin interacting with visitors during the open house.

Underlying this zone in some places was a sterile, coarse, dark yellowish brown (10YR4/6) sand that was designated Zone 1B and interpreted as an intentional fill brought to the site in order to level the area. This sand deposit was unevenly distributed across the site, being most prominent in 105R100 and completely absent in 120R100.

Zone 2 represents the primary stratigraphic unit at the site and consisted of red (2.5YR4/6) clay mixed with gravel, rocks, and other modern construction debris. The presence of modern construction debris at bedrock level and the discovery of backhoe bucket teeth marks at the bases of 105R100 and 120R100 indicate that the area was heavily disturbed during the demolition of the classroom building (Figures 17–20). As a result, intact archaeological deposits relating to the miller's residence no longer exist in this area.

Figure 17. Base of 105R100 with bucket scars created during the demolition of the NCSU classroom.

Figure 18. Photograph of 110R100 showing bedrock and building debris extending out of the walls.

Figure 19. Bottom of unit 115R100 with telephone wire and bedrock exposed.

Figure 20. Base of 120R100 with bucket scars created during the demolition of the NCSU classroom.

Nearly all of the recovered material from these excavations have been identified as modern architectural debris, including concrete, cinderblocks, foam insulation, lumber, glass, and nails. Several large fragments of a toilet were found in 110R100. A small cross pendant was found in 115R100, although it was discovered very near the surface and thus was likely lost by a recent park visitor and not associated with either the classroom or the miller's house. Three refitted fragments of a whiteware saucer or small plate with a molded rim were recovered from 120R100, and they represent one of the few artifacts probably associated with the miller's residence (Figure 21). Unfortunately, whitewares of this type have been manufactured continuously since 1820 and are not temporally diagnostic beyond the early nineteenth to twentieth centuries.

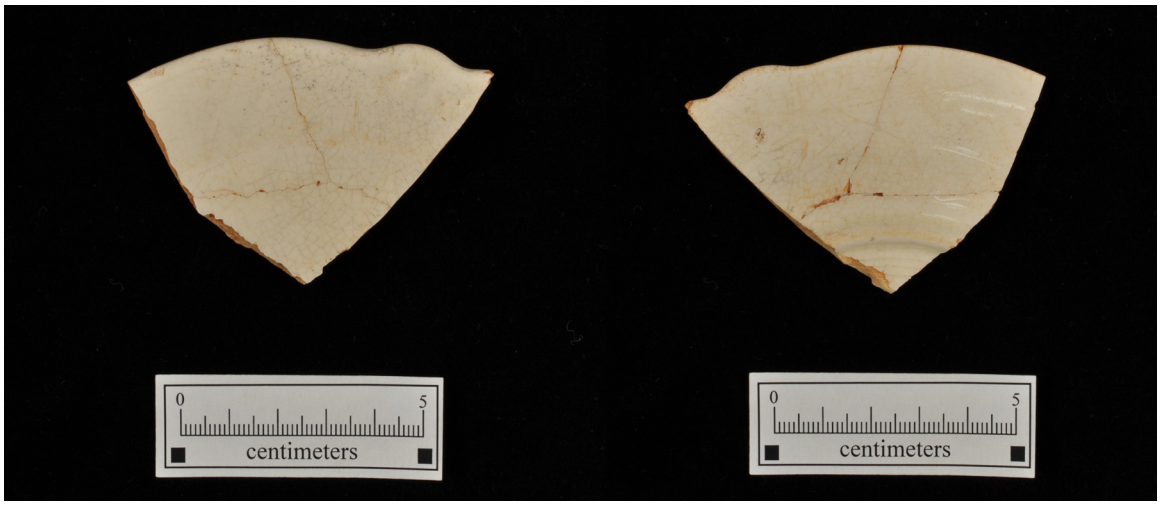

Figure 21. Front and back image of a molded whiteware saucer fragment probably associated with the miller's residence.

CONCLUSIONS

The investigations at HYM were successful in achieving the project's three objectives. Archaeology and heritage education were promoted by providing archaeological instruction and hands-on experience to 11 North Carolina teachers. The accessibility and visibility of preservation efforts at the park were improved through the open house held on July 16. Finally, the possible location of a miller's residence was investigated. While investigations did not reveal intact archaeological deposits associated with the miller's house, several of the recovered artifacts suggest that a nineteenth- or early twentieth-century residence was perhaps nearby. Unfortunately, the demolition of a later classroom facility at the site has completely disturbed the area. Future work may yet uncover additional evidence of the structure, but it will likely be located farther to the west where the effects of the classroom's removal are less significant.

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APPENDIX A.
Catalog of Artifacts Recovered During 2011 Investigations at Historic Yates Mill County Park.

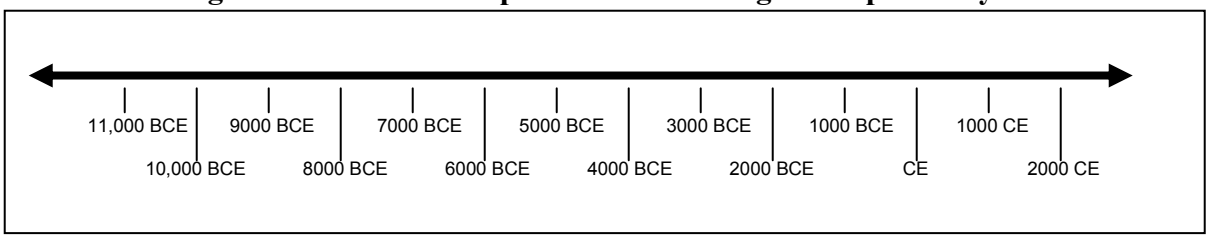
Context	Description	Count
105R100, Zone 1A		
	Glass Fragment	1
	Iron bolt	1
	Nail fragment	1
105R100, Zone 1B		
	Glass Fragment	7
	Miscellaneous Plastic	2
	Coal	1
	Concrete Fragment	1
105R100, Zone 2		
	Glass Fragment	40
	Record Fragment	8
	Miscellaneous Plastic	16
	Nail/wire Fragment	10
	Miscellaneous Metal	3
	Brick Fragment	1
	Toilet Fragment	2
	Historic Sherd	2
110R100, Zone 1		
	Glass Fragment	30
	Miscellaneous Plastic	3
	Miscellaneous Metal	2
	Nail/wire Fragment	15
	Toilet Fragment	3
	Brick Fragment	6
	Concrete Fragment	4
110R100, Zone 2		
	Glass Fragment	188
	Miscellaneous Plastic	20
	Nail/wire Fragment	11
	Miscellaneous Metal	7
	Mussel Shell	1
	Formica	5
	Door hinge	1
	Concrete Fragment	12
	Brick Fragment	4
	Toilet Seat Fragment	1
	Toilet Fragment	38

Context	Description	Count
115R100, Zone 1		
	Glass Fragment	3
	Formica	2
	Concrete Fragment	2
	Pendant (Cross)	1
115R100, Zone 2		
	Glass Fragment	13
	Cast Iron Pipe Fragment	4
	Nail fragment	6
	Miscellaneous Plastic	6
	Miscellaneous Metal	2
	Formica	2
	Concrete Fragment	4
	Brick Fragment	2
	Tile Fragment	10
120R100, Zone 1		
	Historic Sherd	3
	Glass Fragment	40
	Nail fragment	8
	Miscellaneous Metal	2
	Button	1
	Toilet Fragment	2
	Brick Fragment	5
	Quartz	1
120R100, Zone 2		
	Glass Fragment	7
	Nail fragment	3
	Cinderblock Fragment	2
Surface		
	Historic Sherd	2

APPENDIX B.
Selection of Lesson Plans Modeled During the Workshops and Included in the Teaching Kits.

NC PAST: History from Things
Research Laboratories of Archaeology, UNC
NC Mathematics and Science Education Network

Using Timelines to Develop an Understanding of Deep History



Timeline Showing Sustained Human Occupation in the Americas

Materials

- Timeline (included in kit)
- Small pieces of paper
- Scotch tape
- Event and Lifestyle cards (included in kit)

Essential Understandings

- Sustained human occupation in the Americas extends back at least 13,000 years.
- Archaeological research is essential to expanding our knowledge of the human past.
- American history, as it has been traditionally represented at the K-12 level, focuses almost exclusively on the written past and, more specifically, on the "time since Columbus."

Evidence of Understanding

- Comments and observations made during the classroom discussion.
- Activity may be used as a pre- and/or post-unit assessment.

Basic Activity to Build Understanding

1. Hang the timeline on the wall. Explain to students that each segment represents 1000 years of human occupation in the Americas. Point out that people may have arrived in the Americas earlier than 13,000 years ago, but the timeline reflects what has been the most widely accepted date among archaeologists for sustained occupation. Attach the Event card entitled "Earliest known sustained occupation of the Americas" near 11,000 BCE on the timeline.

2. Give the students three small pieces of paper and ask them to write down an event from American history on each piece (events should be something they can come up with off the top of their heads). Give them a few minutes to do this. (For large groups, pair students and ask them to come up with one or two events upon which they can both agree.)

3. When finished, ask individual students or pairs to share an event by reading it to the group. Then have them tape the piece of paper on the timeline to indicate the approximate date for the event. Allow all individuals or pairs to place at least one event on the timeline before moving to the next step.

4. Ask students to make observations about the placement of events on the timeline. They will comment on the fact that their events largely fall within the last 500 years. Have students generate explanations for this; encourage them to give multiple explanations.

5. Help students recognize that America has a rich human history that is not written but can be explored through archaeological research.

Alternative Activity to Build Understanding
(This activity helps students place events from North Carolina history within the context of world history. It may be used as a stand-alone alternative to the basic activity described above, but it is also effective when paired with the optional follow-up activity.)

1. Hang the timeline on the wall. Explain to students that each segment represents 1000 years of human occupation in the Americas.

2. Explain that many archaeologists believe the first people reached America by crossing the Bering Land Bridge. This area between northeast Asia and Alaska is now submerged beneath the Bering Strait, but it would have been exposed above sea level between 22,000 and 7,000 years ago when much of the world's water was frozen in glaciers. Sometime around 11,000 BCE, people may have walked across the Bering Land Bridge into North America. (People may have reached the Americas earlier, but 11,000 BCE is the most widely accepted date among archaeologists for sustained occupation.) Attach the Event card entitled "Earliest known sustained occupation of the Americas" near 11,000 BCE on the timeline.

3. Explain that the people who crossed the Bering Land Bridge slowly spread across North America and all the way to the southern tip of South America. Archaeologists think they arrived in the area now known as North Carolina sometime between 10,000 and 9000 BCE. Attach the Event card entitled "First people arrive in North Carolina" between 10,000 and 9000 BCE on the timeline.

4. Give the students two small pieces of paper. Ask them to write down an event from human history on one piece and an event from North Carolina history on the other (events should be something they can come up with off the top of their heads). Give them a few minutes to do this. (For large groups, pair students and ask them to come up with two events upon which they can both agree.)

5. When finished, ask individual students or pairs to share an event by reading it to the group. Then have them tape the piece of paper on the timeline to indicate the approximate date of the event. If the event occurred in North Carolina, have them tape the piece of paper directly on the timeline. If the event occurred elsewhere in the Americas, have them tape the piece of paper so that it hangs just above the timeline. If the event occurred outside of the Americas, have them tape the paper so that it hangs just below the timeline. Allow all individuals or pairs to place at least one event on the timeline before moving to the next step.

6. Ask students to make observations about the placement of events on the timeline. They will comment on the fact that their events largely fall within the last 500 years. If they have picked some older events (e.g., pyramids in Egypt, the first Olympics, etc.), they may also notice that even events that they think happened a very long time ago still fall much closer to the present than they do to the time when the earliest people reached North Carolina. Have students generate explanations for this; encourage them to give multiple explanations.

7. Help students recognize that North Carolina has a rich human history that is not written but can be explored through archaeological research.

Optional Follow-up Activity

1. Keep the timeline and its events prominently displayed. As you explore additional activities with students, ask them to add more events to the timeline. If appropriate, you may also want to encourage students to make cards for events they learn about in other subjects, such as science.

2. After the students have added a number of additional events, ask them to make observations about the timeline. They will likely comment on the fact that as they move forward in time, the items on the timeline tend to cluster closer together. They may also comment on differences in the nature of items on the timeline as they move forward through time. Ask students to draw upon their understanding of archaeological methods and evidence to generate explanations for their observations.

This lesson plan and the accompanying activity materials were developed by Elaine Franklin and Theresa McReynolds Shebalin.

Reconstructing the Past From Artifact Assemblages

Above image used with permission from the Illinois State Museum

Materials (available for loan from The Research Laboratories of Archaeology)

- Paleoindian artifact assemblage
- Archaic artifact assemblage
- Woodland artifact assemblage
- Mississippian artifact assemblage
- Historic artifact assemblage
- Timeline (optional)

Essential Understandings

- Archaeologists learn about daily life in the past by studying artifacts.
- Daily life in North Carolina changed significantly over time, yet some aspects remained similar for very long periods.

Evidence of Understanding

- Comments and observations made during the classroom discussion.
- Completed worksheets.
- Activity may be used as a pre- and/or post-unit assessment.

Activity to Build Understanding

1. Ask students what they know (or think they know) about daily life in the past and how they know it.

2. If necessary, introduce students to the concept of classification. (See Lesson 1.6: Classification and Attributes in *Intrigue of the Past: North Carolina's First Peoples*.)

3. If necessary, help students understand the difference between observations and inferences. (See Lesson 1.3: Observation and Inference in *Intrigue of the Past: North Carolina's First Peoples*.)

4. Have students practice the skills of classification, observation, and inference as they explore the five artifact assemblages representing different periods of North Carolina history. Ask students to complete the first worksheet as they examine each assemblage.

5. After all five assemblages have been explored, ask students to order the assemblages chronologically from oldest to most recent.

6. Discuss the students' findings as a group. Ask questions such as: Which assemblage do you think is the oldest, second oldest, etc.? What evidence supports your ideas? What aspects of culture appear to have changed over time? What aspects endured?

7. Once the students have established which time periods the various assemblages represent, ask them to identify the key characteristics of daily life during each period and record their answers on the second worksheet. If you are using a timeline, help students identify where each period falls on it.

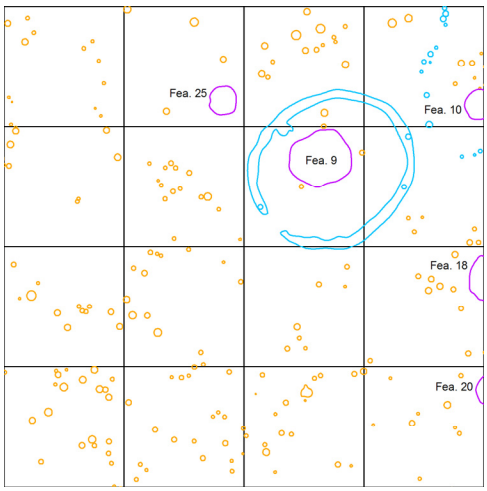
This lesson plan and the accompanying activity materials were developed by Theresa McReynolds Shebalin, Elaine Franklin, and Tricia Samford.

Name: _____

Artifact Kit	Food	Shelter	Tools	Personal	Other
A					
B					
C					
D					
E					

Period	Assemblage	Characteristics of Daily Life
Historic (After CE 1600)		
Mississippian/ Late Woodland (CE 1000-1600)		
Early and Middle Woodland (1000 BCE-CE 1000)		
Archaic (8000-1000 BCE)		
Paleoindian (Before 8000 BCE)		

The Archaeology of Occaneechi Town:
Reconstructing Life in an Early Eighteenth-Century Indian Village



Materials

- PowerPoint introduction
- Occaneechi Town teacher's notes
- Game pieces (random sampling cards, excavation units, artifact inventory cards, and feature cards)
- Background sources
- Field Journal and Research Report for each student

This lesson plan was designed as a two-week-long unit for a 5th-6th grade audience. It takes approximately 7.5 hours to complete. An alternative, shorter version is also available and may be more appropriate for older students.

I. The Archaeological Research Method (Slides 1-4)

Essential Understandings

- Archaeology is a science that uses a research method based on the scientific method.

Evidence of Understanding

- Comments and observations made during the classroom discussion.

Activity to Build Understanding

1. Ask students, "What is archaeology?" You may wish to use Slide 2 and the accompanying notes as an aid for discussion.

2. Discuss the steps of the Archaeological Research Method (Slide 3).

3. Explain that the students will carry out the steps of the Archaeological Research Method to learn about daily life in a late seventeenth-/early-eighteenth-century Indian village (Slide 4). Ask the students to turn to p. 2 in their field journals. Have them read the introduction or follow along as you read it aloud:

You are part of a team of archaeologists studying a site on the banks of the Eno River in Hillsborough, North Carolina. The site is situated near the ***Great Trading Path*** *that was used by Virginia traders during the seventeenth and eighteenth centuries.*

Preliminary tests suggest that the site represents the archaeological remains of an Historic-period Indian village known as ***Occaneechi Town****. Occaneechi Town was occupied from approximately 1680-1710 by people related to the modern* ***Occaneechi Band of the Saponi Nation****, one of North Carolina's state-recognized tribes.*

Archaeologists already know a little about the people who lived at Occaneechi Town because an Englishman named John Lawson visited the village in 1701 and wrote about it in his journal. Lawson's journal and another historic account by a German explorer named John Lederer suggest that the Occaneechi Indians lived in Virginia until about 1680, when they moved to present-day North Carolina and established Occaneechi Town. These accounts also imply that the people at Occaneechi Town traded deerskins and furs to Virginia traders in return for European-manufactured goods made from materials like metal and glass. Sometime after 1710, disease and warfare forced the Occaneechi people to abandon their village in North Carolina, and they moved to Virginia to join other Indian groups at Fort Christanna.

In cooperation with members of the Occaneechi Band of the Saponi Nation, your team has decided to excavate part of this archaeological site in order to learn more about the people who once lived there. Your first task is to develop and execute a research plan by following the steps of the ***archaeological research method****.*

II. Research Questions (Slides 5-19)

Essential Understandings

- The first step in the archaeological research method is to identify research questions.
- Some questions are more likely to be answered through archaeological excavation than others.

- Archaeology is a destructive process. For this reason, archaeologists only excavate a site if they have specific research questions that they think can be answered through excavation.

Evidence of Understanding

- Comments and observations made during the classroom discussion.
- Journal entries.

Activity to Build Understanding

1. Explain that before they will be allowed to excavate, the students must present their reasons for conducting research to the leaders of the local community. After all, archaeology is a destructive process and excavation should only be undertaken when it has the potential to answer research questions. Ask the students to think about what they want to know about the people who lived at Occaneechi Town (Slide 5). Ask them to list at least two questions on p. 2 of their journals.

2. After students have had time to come up with their questions, ask them to share their ideas. Record their questions on the board, chart paper, etc.

Depending on the group size, the sharing can be done in several phases. For small groups, direct reporting may work best, with each student sharing an idea. For larger groups, you may prefer to do a phased reporting in which students first report to a small group and then a group leader shares ideas with the entire class.

At this phase in a brainstorming session, quantity is more important than quality; the narrowing comes after everything is on the table. Be sure to include <u>all</u> suggestions, no matter how offbeat they may seem, in order to ensure that students are focusing on generating questions rather than on editing. If necessary, remind students that even questions that appear silly now may hold value later on.

3. Explain to the students that they may not be able to answer all of their questions through this particular excavation. To introduce the students to the types of evidence they are likely to find by excavating the Occaneechi Town site, share Slides 6–19. Ask students to take notes using the worksheet on p. 3 and 4 in their field journals.

4. Have students work in pairs or groups to focus their questions using the Question Grid on p. 5 of their journals. Remind them to consider the types of evidence that may be available to them as they organize the questions. This may mean moving away from a favorite question or towards a question that initially seemed less interesting to them.

5. Ask the groups to share the questions they listed in the "Very Likely" category. Record responses on the board, chart paper, etc. Each time a question is repeated, place a check beside it. The goal of this exercise is to narrow the list to 3–5 questions for the class to investigate. (If more than five questions are equally popular, ask students to repeat the Question Grid activity using only the questions from the new class list or

debate the merits of particular questions. If fewer than three questions emerge, ask for questions from the "Somewhat Likely" category.)

6. Ask students to record the 3–5 selected questions on p. 6 of their journals. (You might wish to allow them to pick a bonus "personal" question that they can record below the class questions. That gives then a chance to include a question that recently occurred to them or which did not get selected by the class but nevertheless appeals to them.) Ask students to write a reflection about the process of formulating research questions. You may wish to assign the reflection for homework.

III. Background Research (Slides 20-24)

Essential Understandings

- The second step in the archaeological research method is to conduct background research. Background research involves surveying, talking to people, studying historical records, and reviewing archaeological reports.

Evidence of Understanding

- Comments and observations made during the classroom discussion.
- Journal entries.

Activity to Build Understanding

1. Ask students what they do when they have a question and they want to find information to help them answer it. If you wish, list their responses on the board, chart paper, etc.

2. Explain that excavation is expensive and very hard work. Before archaeologists begin, they therefore need to learn as much as possible about the area, people, and period of time they are investigating so that they can better make sense of their findings. They conduct background research using some of the same sources the students use when they have questions (Slide 20).

3. Introduce the background sources available to archaeologists studying Occaneechi Town (Slides 21-24).

You may not wish to use all of the background sources with younger students. An alternative would be to use only the John White paintings and discuss them as a group. A PowerPoint file with the John White paintings is included in the kit to facilitate a group discussion.

4. Divide the students into groups. Assign one background source to each group and have the members work together to review it and record what they learn on the Background Research Worksheet on p. 7 in their journals.

5. To ensure that each student has access to the information in all four sources, you may either rotate the sources so that each group reveiws all four or you can move the students to new "sharing groups." If you choose the latter strategy, encourage students to act as "experts" in the new groups, sharing information about their sources and helping other members of the group complete the additional Background Research Worksheets (p. 8-10) in their journals.

IV. Hypothesis Development (Slide 25)

Essential Understandings

- The third step in the archaeological research method is to formulate hypotheses.
- Information gained through background research can inform hypotheses, but it does not eliminate the need for archaeological excavation to test those hypotheses.

Evidence of Understanding

- Comments and observations made during the classroom discussion.
- Journal entries.

Activity to Build Understanding

1. Explain that now that the students know a little more about the area, people, and period of time they are investigating, they will propose hypotheses for testing through excavation.

Students may think that some of their questions have already been answered through the background research. If so, remind them that most of the sources do not deal directly with the Occaneechi Town site or even the same period of time that the site was occupied.

Furthermore, the historic sources are likely biased, having been written or painted by Europeans who were unfamiliar with the people they saw and their ways of life. Consequently, the authors of the background sources may have misunderstood some things they saw, imposed their own European ideals, or otherwise distorted information. For example, John White was trying to make the Roanoke Colony look like an attractive place to live in order to attract investors; how might his desire to accomplish this goal have influenced his paintings?

Finally, the neat thing about archaeology is that it may teach us things that no one thought to record. Help students understand that the purposes of background research are to aid in hypothesis development and to help place information discovered during excavation into a contextual framework—background research does not eliminate the need for archaeological investigation!

2. Ask the students to formulate hypotheses for their research questions by completing the Hypothesis Construction Grid on p. 11 of their field journals. You may wish to assign this step for homework.

V. Introduction to Archaeological Excavation (Slides 26-34)

Essential Understandings

- Archaeologists test their hypotheses through excavation.
- Before they begin excavating, archaeologists establish a grid over the site to help them accurately describe any location according to a coordinate system.
- Because archaeology is a destructive process, archaeologists take detailed notes as they work.
- Archaeologists use a sampling strategy to help them decide where to excavate.

Evidence of Understanding

- Comments and observations made during the classroom discussion.
- Journal entries.

Activity to Build Understanding

1. Inform the students that they have been granted permission to excavate part of the Occaneechi Town site to test their hypotheses (Slide 26). Divide them into two teams. Each team will work with one set of 16 excavation units ("Occaneechi Town North" or "Occaneechi Town South").

Smaller groups may wish to use only one set of 16 units; if so, modify the lesson plan as necessary.

2. Describe the grid archaeologists use to keep track of locations within a site and the importance of taking careful notes. If desired, use Slides 27-29 and the accompanying notes as an aid.

3. Tell the students that they only have enough money to excavate half of the site (Slide 30). Ask them how they could decide which units to excavate. List their suggested strategies on the board, chart paper, etc.

4. Describe some of the strategies archaeologists use to decide which units to excavate. Explain that archaeologists can use each of these strategies alone or they can combine them (Slides 31-34).

5. Ask the teams to pick a strategy or combination of strategies for their excavation. For example, they may want to select the first four units based on simple random or stratified random sampling and then choose four more units through judgmental sampling after they have some knowledge about the site. Ask students to describe their sampling strategy on p. 12 of their journals.

Depending on class size, you may want to have small groups of 4–6 students present plans and then take a team vote. If the class decides to use random or stratified random sampling, the Random Sampling Cards may come in handy (note that they are color-coded to assist with stratified random sampling).

VI. Testing Hypotheses through Excavation (Slides 35-39)

Essential Understandings

- Information recovered through excavation may encourage archaeologists to revise their research questions.

Evidence of Understanding

- Journal and Research Report entries.

Activity to Build Understanding

1. Discuss the steps archaeologists follow when they excavate a site, using Slides 35–39 and accompanying notes as an aid.

2. Have students excavate their selected units by turning them over to reveal features, postholes, and/or structures. For each unit excavated, give students an artifact inventory card. If they uncover a labeled feature, give students the corresponding feature card.

Archaeologists never excavate a feature until they know its full extent. If students uncover only part of a feature, they must therefore wait until they have excavated the unit containing the rest of the feature before they receive the feature card. If the rest of the feature is not in their excavation area (i.e., Features 10, 18, and 20) or they uncover only part of a feature when they excavate their last unit, they do not get the feature card. Explain that if they are able to secure enough money to excavate again next year, they can uncover the rest of the feature and excavate it then.

3. As they excavate each unit or feature, ask students to carefully record the evidence they find in the worksheets on p. 13–14 in their journals.

If the teams have chosen judgmental sampling, you may wish to allow them to share their results with each other after excavating half of the units.

4. Ask students to complete p. 1 of their Research Reports by mapping the features, post holes, and structures they discovered.

VII. Analysis and Interpretation

Essential Understandings

- Archaeologists work in the laboratory to analyze and interpret the evidence they find through excavation.
- Archaeologists report their conclusions.

Evidence of Understanding

- Comments and observations made during the classroom discussion.
- Research Report entries.

Activity to Build Understanding

1. Explain that after the excavation is complete, archaeologists still need to analyze and interpret the evidence they recovered. In the laboratory, archaeologists try to understand what the evidence means and whether it supports or contradicts their hypotheses.

2. Ask students to complete the Lab Report on p. 2 of their Research Reports. Depending on group size and time constraints, this activity may be done individually, in pairs, in groups, in teams, or as homework.

3. Ask each team to share what it has learned about the people who lived at Occaneechi Town. Record students' conclusions on the board, chart paper, etc. If the two teams recovered different kinds of evidence, help the students synthesize the data to reach a fuller understanding of daily life at Occaneechi Town.

4. Ask the students to individually record their conclusions on p. 3 of their Research Reports. You may wish to make this a homework assignment.

VIII. Optional Follow-up Activities

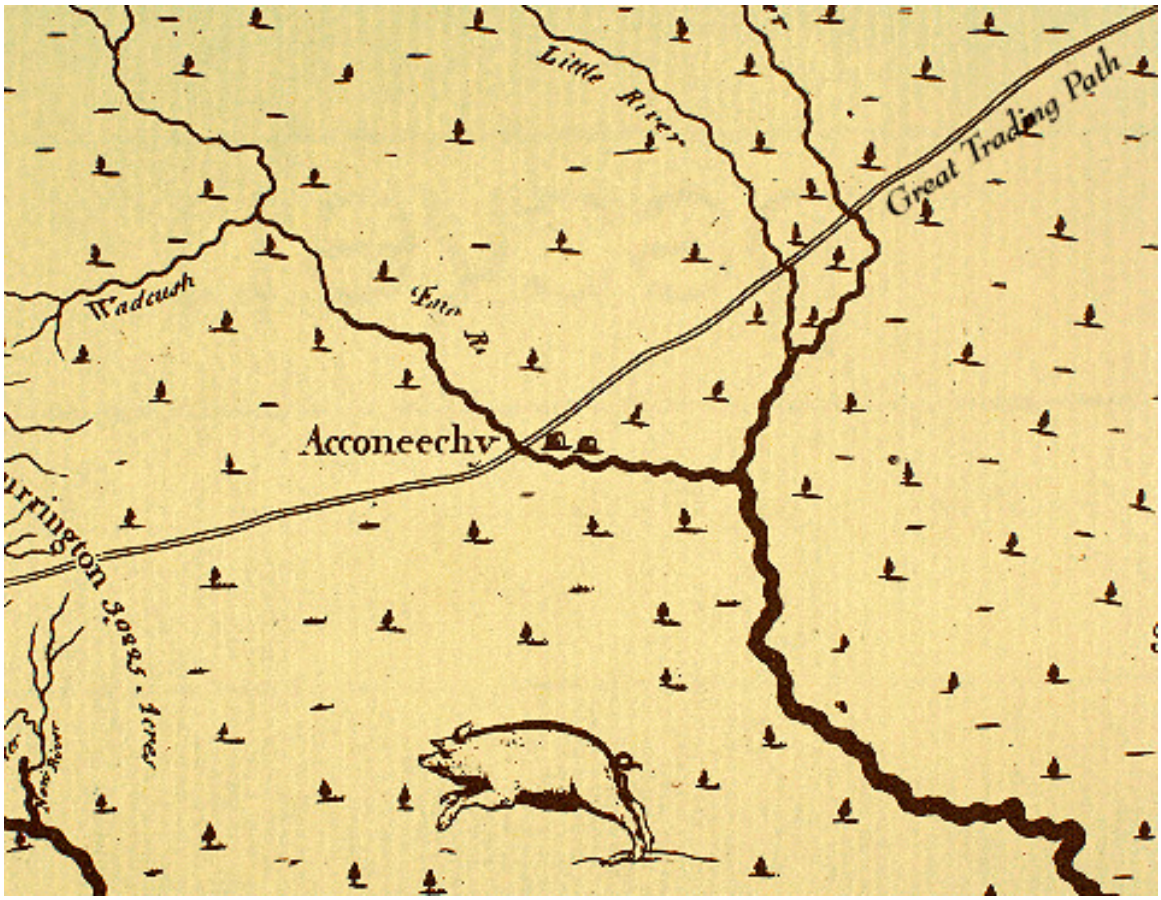
1. Allow students to turn over the rest of the excavation units. Ask them how their conclusions would change with this additional information. Help them understand that looting at archaeological sites destroys important information that might have helped archaeologists reach different or new conclusions.

2. Ask students to think about the kinds of questions that can be addressed through archaeology. What kinds of questions are archaeologists unlikely to be able to answer based solely on evidence from excavations?

This lesson plan was developed by Theresa McReynolds Shebalin and Kristin Bedell. Elaine Franklin, Tricia Samford, and Tricia Blakistone provided assistance and feedback. Activity materials were adapted from:

Excavating Occaneechi Town: Archaeology of an Eighteenth-Century Indian Village in North Carolina, edited by R. P. Stephen Davis, Jr., Patrick C. Livingood, H. Trawick Ward, and Vincas P. Steponaitis, 1998, CD-ROM. (Web edition available online at http://www.rla.unc.edu/dig/.)

Occaneechi Town Field Journal



This section of an early eighteenth-century map of North Carolina shows the location of Occaneechi Town (labeled "Acconeechy") on the Eno River near the Great Trading Path.

Name:

Date:

Class:

Introduction

You are part of a team of archaeologists studying a site on the banks of the Eno River in Hillsborough, North Carolina. The site is situated near the **Great Trading Path** that was used by Virginia traders during the seventeenth and eighteenth centuries.

Preliminary tests suggest that the site represents the archaeological remains of an Historic-period Indian village known as **Occaneechi Town**. Occaneechi Town was occupied from approximately 1680-1710 by people related to the modern **Occaneechi Band of the Saponi Nation**, one of North Carolina's state-recognized tribes.

Archaeologists already know a little about the people who lived at Occaneechi Town because an Englishman named John Lawson visited the v illage in 1701 and wrote about it in his journal. Lawson's journal and another historic account by a German explorer named John Lederer suggest that the Occaneechi Indians lived in Virginia until about 1680, when they moved to present-day North Carolina and established Occaneechi Town. These accounts also imply that the people at Occaneechi Town traded deerskins and furs to Virginia traders in return for European-manufactured goods made from materials like metal and glass. Sometime after 1710, disease and warfare forced the Occaneechi people to abandon their village in North Carolina, and they moved to Virginia to join other Indian groups at Fort Christanna.

In cooperation with members of the Occaneechi Band of the Saponi Nation, your team has decided to excavate part of this archaeological site in order to learn more about the people who once lived there. Your first task is to develop and execute a research plan by following the steps of the **archaeological research method**.

In the space below, list at least two research questions that you would like to address by excavating the Occaneechi Town site:

In the chart below and on the back, describe the types of archaeological evidence that you are likely to find at a Historic-period Indian village.

Native Artifacts	Notes
European Artifacts	**Notes**

Food Remains	Notes
Features	**Notes**

Question Grid

Think about the types of evidence that you listed on pages 3 and 4. Then sort your group's questions into categories based on the likelihood that we will find evidence to support an answer for that particular question. Record each question under the proper category in the grid below.

Very Likely to Find Evidence	Somewhat Likely to Find Evidence	Not Likely to Find Evidence

Research Questions

List the questions that we have decided to use as a starting point for t his investigation.

In the box below, write a reflection paragraph about our class questions. Do you agree with the choices we made as a team? Why or why not? Do you have any other thoughts, ideas, or concerns about the questions? If so, what are they? **(Your paragraph must include a topic sentence and at least three supporting sentences.)**

Background Research Worksheet 1

1. Title of Source:

2. Author:

3. Date of Source (if known):

4. This source mainly describes: _____everyday life _____a special event _____other (explain)

5. I think this because _____

_____.

6. As you review the source, record what you learn by entering it in the chart below under the most appropriate category:

Food	Shelter	Tools	Family/Community Life	Other

7. Write a short summary of the information you have gathered from this source. **Be sure to use complete sentences!**

Background Research Worksheet 2

1. Title of Source:

2. Author:

3. Date of Source (if known):

4. This source mainly describes: _____everyday life _____a special event _____other (explain)

5. I think this because _____

_____.

6. As you review the source, record what you learn by entering it in the chart below under the most appropriate category:

Food	Shelter	Tools	Family/Community Life	Other

7. Write a short summary of the information you have gathered from this source. **Be sure to use complete sentences!**

Background Research Worksheet 3

1. Title of Source:

2. Author:

3. Date of Source (if known):

4. This source mainly describes: _____everyday life _____a special event _____other (explain)

5. I think this because _____

_____.

6. As you review the source, record what you learn by entering it in the chart below under the most appropriate category:

Food	Shelter	Tools	Family/Community Life	Other

7. Write a short summary of the information you have gathered from this source. **Be sure to use complete sentences!**

Background Research Worksheet 4

1. Title of Source:

2. Author:

3. Date of Source (if known):

4. This source mainly describes: _____everyday life _____a special event _____other (explain)

5. I think this because _____

_____.

6. As you review the source, record what you learn by entering it in the chart below under the most appropriate category:

Food	Shelter	Tools	Family/Community Life	Other

7. Write a short summary of the information you have gathered from this source. **Be sure to use complete sentences!**

Hypothesis Construction Grid

Question	Evidence from background research	Hypothesis **(Be sure to state your hypothesis using a complete sentence!)**	Archaeological evidence that would **support** your hypothesis

Sampling Strategy

Using a **complete sentence**, describe the sampling strategy that your team has chosen:

Label each square that you will excavate on the appropriate diagram below. Mark the first square with a "1", the second with a "2", and so on.

Occaneechi Town North:

250R40	250R50	250R60	250R70
240R40	240R50	240R60	240R70
230R40	230R50	230R60	230R70
220R40	220R50	220R60	220R70

Occaneechi Town South:

210R40	210R50	210R60	210R70
200R40	200R50	200R60	200R70
190R40	190R50	190R60	190R70
180R40	180R50	180R60	180R70

Excavation Results Worksheet 1

Excavation Unit	Observations (description of important archaeological evidence)	Inference(s) (I think this means…)

Excavation Results Worksheet 2

Feature	Observations (description of important archaeological evidence)	Inference(s) (I think this means…)

Archaeologist's Initials:

Occaneechi Town Research Report

1. Crew Members (list your name first):

2. Excavation Location (circle one): Occaneechi Town North or Occaneechi Town South

3. On the grid below, map the features you discovered through excavation. Label the units you did not excavate with their grid coordinates.

Archaeologist's Initials:

Lab Report

Research Question	Hypothesis	Relevant Evidence	Conclusion

Archaeologist's Initials:

Final Results

1. What conclusions can you draw about the inhabitants of Occaneechi Town? Be sure to cite the evidence that supports your ideas and use **complete sentences**.

2. After analyzing your data, what new questions do you have? Please list **at least two** new questions.

3. On the back of this sheet, write three good paragraphs reflecting on our investigation of Occaneechi Town. **Each paragraph should include a topic sentence and at least three supporting sentences.** Some ideas to consider include:

- What did you like about this investigation?
- What was challenging about this investigation?
- What would you do differently the next time?
- What do you wish you had known before starting this project?
- What did you learn that you didn't know before?
- What questions do you still have, either about archaeology or the people who lived at Occaneechi Town?