

# Pottery Reconstruction

**Our Question:** How can pottery help an archaeologist identify a culture or time period?

## Goal:

At the end of the activity, we will:

- Understand that archaeologists might not find artifacts intact
- Learn that designs and textures can be used to identify pottery
- Identify the culture and time period of a piece of a pottery vessel based on the textures, style or markings

## Materials Needed:

- Ceramic pot images (3)
- *Pottery ID guide*
- *Pottery Reconstruction answer key*
- *Pottery Reconstruction datasheet (2 pages)*

## Helpful Words:

**Archaeology:** the study of past human activity through excavation and analysis of material culture

**Artifact:** anything made or modified by humans

**Burnished:** ceramic surface texture applied to some coil pottery after the vessel has dried; imperfections are erased by rubbing the vessel with a stone or by hand before firing

**Ceramic reconstruction:** the process of repairing archaeological ceramic vessels for further study or display

**Cord-marked:** ceramic surface texture created by the use of a cord-wrapped paddle on wet clay

**Fabric-marked:** ceramic surface texture made by smoothing dried clay with a wooden paddle wrapped in fabric

**Incised:** ceramic surface texture created by drawing designs into the clay surface of a pot

**Pottery sherd:** prehistoric or historic fragment of pottery

**Punctate:** imprints on a vessel made by the edges of sticks or shells

**Vessel:** a utensil made from clay, glass, metal or other material used as a container; especially for liquids or food

## Introduction (Read this first!):

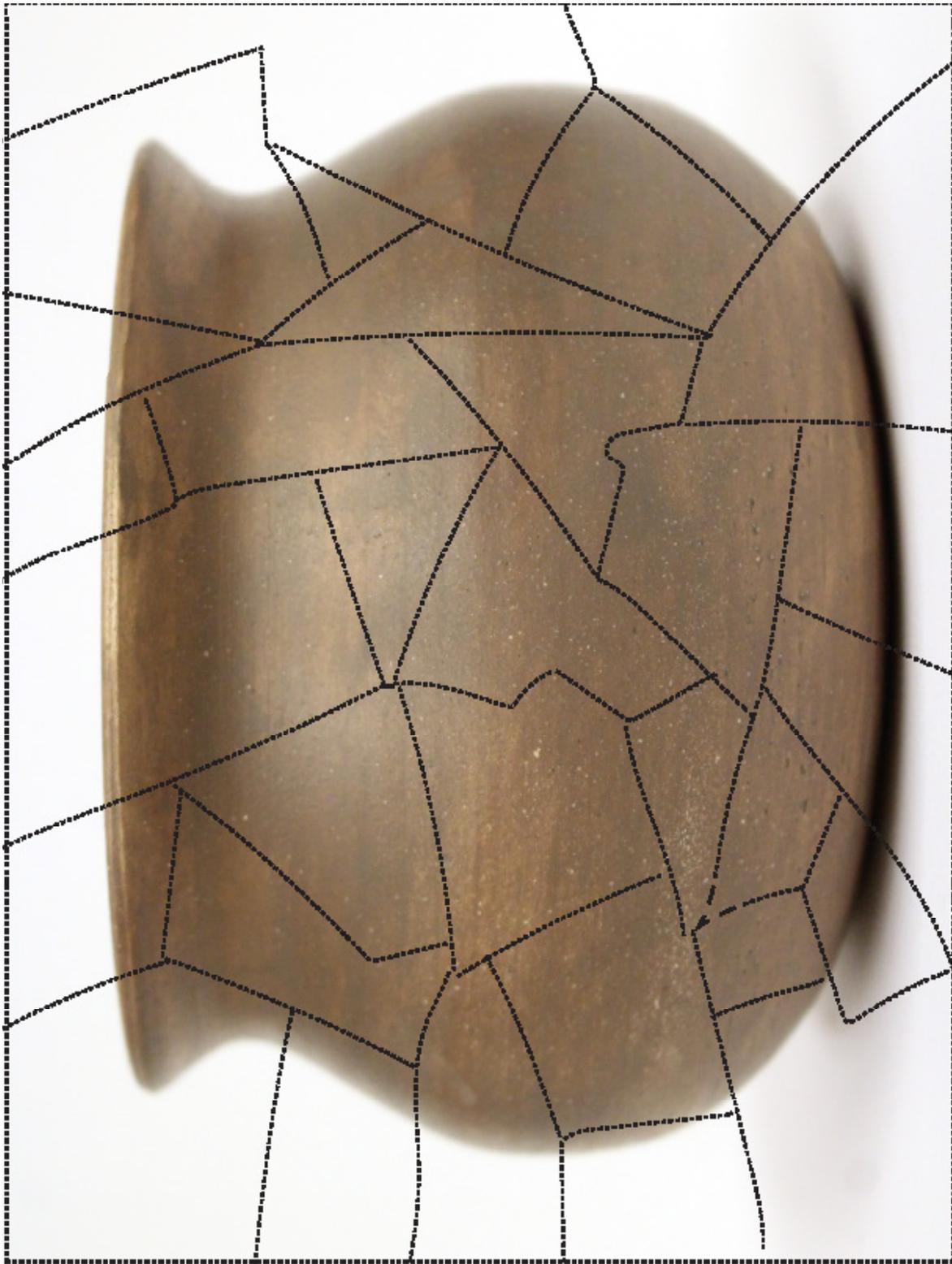
Archaeology is the study of past human activity through material culture, or the physical things people left behind – no dinosaurs here! Archaeologists learn about past cultures by recovering and studying artifacts. An artifact is something that has been made or changed by humans – an arrowhead, a pot or even the tools used to make them are all examples of artifacts! Archaeologists excavate (uncover) and analyze artifacts in order to find out more about the cultures that made and used them. Some archaeologists might also experiment with recreating and using artifacts to learn about cultures.

But finding an artifact isn't where archaeology ends! After archaeologists have discovered, documented and dated an artifact, they must study it to learn why it is important and what it might tell them about the culture that made it.

Do you think you can use pottery to help identify a culture or time period?

## Directions:

1. Print out **ceramic pot images 1, 2 and 3**.
2. Cut out pot “pieces” along the dotted lines, keeping each pot in a separate pile or mixing them all together for more difficulty. (Have an adult or someone else cut out the pieces for you to assemble for an added challenge!)
3. Print out the **Pottery ID guide** and staple the pages together. Set aside.
4. Print out the **Pottery Reconstruction datasheet**.
5. On a table or other flat surface, reconstruct the pots by putting the pieces of each pot image back together.
6. After the pots have been reassembled, complete **Step 1: Observe!** and **Step 2: Think!** on the datasheet.
7. Using the **Pottery ID guide**, observe the designs or texture on your pots and compare them to the descriptions and images.
8. Complete **Step 3: Compare!** on the datasheet.
9. Check your answers with the **Pottery Reconstruction answer key** (located after the Background Information section.)
10. Interested in learning more? Check out the **Background Information** section at the end!



**Ceramic Pot I** "Pottery Reconstruction"

Image courtesy of the Sam Noble Museum





**Ceramic Pot 2** "Pottery Reconstruction"

Image courtesy of the Sam Noble Museum





**Ceramic Pot 3** "Pottery Reconstruction"

Image courtesy of the Sam Noble Museum





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# Pottery Identification Guide



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[www.SamNobleMuseum.ou.edu](http://www.SamNobleMuseum.ou.edu)

Pottery ID guide "Pottery Reconstruction"

This field notebook belongs to:

**Dr. Daniel C. Swan**

Curator,  
Ethnology

Sam Noble Museum  
University of Oklahoma



"I'm an anthropologist and I'm interested in studying the things that people make and use. At the museum, we have an amazing collection of objects made by people from cultures around the world. This includes baskets, ceramics, jewelry, works in fabrics, pieces of clothing, ceremonial objects and many other wondrous creations.

"I'm very interested in the art and objects that people create and also their motivations for creating those objects. I'm totally amazed by the levels of creativity that people around the world have expressed both past and present. I think that this is one of the great things that we share as human beings."

### Did you know?

The ethnology collection has over 10,600 objects representing different cultures across the world! Their current research focuses on working with Native American communities across the United States to document music, folklore, traditional arts and more.



Image courtesy of the Sam Noble Museum



## Burnished Pottery



### Did you know?

Burnished pottery is made using the coil method, where long pieces of clay are coiled and then smoothed together to form the basic shape of the pot. The surface texture is created after the pot has dried. Imperfections are erased by rubbing the pot with a stone or by hand before firing.

Scale: 1 square =

## Incised Pottery



### Did you know?

The surface texture of incised pottery is created by drawing designs into the clay surface of a pot. Implements such as sticks or bone fragments were dragged through wet clay to incise it.

Scale: 1 square =



## Punctate Pottery



### Did you know?

The surface texture of punctate pottery is created by using the edges of sticks or shells to imprint designs on smooth, wet pottery before firing.

Scale: 1 square =

## Fabric-Marked Pottery



### Did you know?

Fabric-marked pottery has a surface texture that resembles the texture of fabric. Before firing, wet clay is smoothed with a wooden paddle wrapped in fabric. The paddle is pressed against the pot to provide texture.

Scale: 1 square =



## Cord-marked Pottery



### Did you know?

The surface texture of a cord-marked pot has parallel impressions left by the use of a cord-wrapped paddle applied to wet clay. This type of pottery is strong and provides a good grip for what otherwise might be a slippery pot.

Scale: 1 square =

## Which group of people made your pottery type?

**Woodland Culture (5,000 B.P. to 1,000 B.P.):** The Woodland Culture is characterized by early farming practices, early use of ceramics and the beginnings of permanent housing. Throughout the Woodland Period, pottery technology improved allowing containers to be made in a variety of shapes and sizes for cooking, storing and serving food.

Pottery types from this period include cord-marked, fabric-marked and other types of stamped pottery.

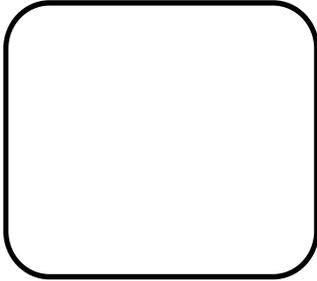
**Mississippian Culture (1,000 B.P. to 450 B.P.):** The Mississippian Culture is characterized by an increase in maize (corn) farming, elaborate burial mounds, such as the Spiro Mounds in eastern Oklahoma, and the growth of farming villages throughout the plains and eastern woodland regions. Pottery types from this period include stamped, incised, punctate and burnished pottery.

Scale: 1 square =

# Pottery Reconstruction

## Step 1: Observe!

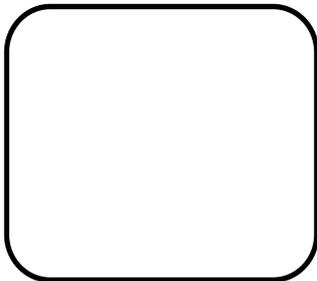
Put the pottery sherds back together. Draw the shape and texture of each pot below:



### Ceramic Pot 1

Describe the appearance: \_\_\_\_\_

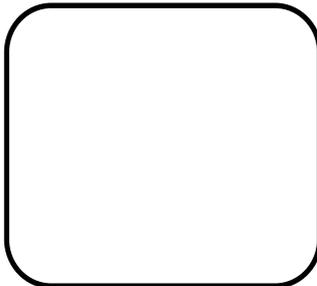
\_\_\_\_\_  
\_\_\_\_\_



### Ceramic Pot 2

Describe the appearance: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_



### Ceramic Pot 3

Describe the appearance: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

## Step 2: Think!

How do you think the texture of the pot was made and/or what tools were used to make the design?

**Ceramic Pot 1:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**Ceramic Pot 2:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**Ceramic Pot 3:** \_\_\_\_\_



### Step 3: Compare!

Use the Pottery ID guide to identify what type of pot you observed.

#### **Ceramic Pot 1**

Pottery Type: \_\_\_\_\_

Cultural Period: \_\_\_\_\_ Date Range: \_\_\_\_\_

How was the texture of the pot made and what tools were used to make the design? \_\_\_\_\_

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#### **Ceramic Pot 2**

Pottery Type: \_\_\_\_\_

Cultural Period: \_\_\_\_\_ Date Range: \_\_\_\_\_

How was the texture of the pot made and what tools were used to make the design? \_\_\_\_\_

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#### **Ceramic Pot 3**

Pottery Type: \_\_\_\_\_

Cultural Period: \_\_\_\_\_ Date Range: \_\_\_\_\_

How was the texture of the pot made and what tools were used to make the design? \_\_\_\_\_

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**What can the texture of a pottery sherd tell us about the culture that made it?** \_\_\_\_\_

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## Background Information:

### What is archaeology?

Archeology is the study of past human activity through excavation and analysis of material culture. Archaeology is a subfield of anthropology; the study of humans, their origin, development and societies. Archaeology is especially useful in learning about prehistoric cultures for whom there may not be written records. Archaeology involves surveying, which means learning about the land a particular site may be on; excavation, which means digging up the objects and remains of past cultures; and analysis, which means discovering what we can learn from past cultures by the objects we find.

### What is an archaeologist?

An archaeologist is a scientist who studies past cultures by recovering and analyzing artifacts. Archaeologists survey archaeological sites, excavate and analyze artifacts in order to find out more about the cultures that made and used them. Archaeologists might also experiment with recreating and using artifacts to learn about cultures.

### What is material culture?

Material culture is the material, which means physical evidence, that can be attributed to a culture. Material culture gives archaeologists the evidence to determine how a particular group of people lived their daily lives. In archaeology, individual items of material culture are known as artifacts.

### What is an artifact?

An artifact is anything made or modified by humans. Artifacts can tell archaeologists a lot about a culture including what they did in their daily lives, where they lived and what natural resources they used. Artifacts can even tell archaeologists about the interactions between cultures. For example, if they find ocean shells in an area with no oceans, archaeologists can predict that two cultures may have been trading items.

### How do archaeologists find artifacts?

Archaeologists excavate artifacts, from locations where there is evidence of past cultural activity. They begin by surveying an area for evidence of activity. This can be done by people, or by using technology such as satellite imagery and drones. Archaeologists look for features that point to past activity such as the remains of walls, the outlines of structures like buildings or large mounds that could be burial areas. Once evidence of past activity has been found, archaeologists will begin excavating.



## How do archaeologists excavate a site?

The work of professional archaeologists is always done with great care and respect for the people of the past. First, an archaeologist creates a grid on the ground from wooden or metal stakes and string. This helps the archaeologist make sense of the site's context, or where artifacts are found in relationship to each other. Then the archaeologist will carefully uncover one layer of earth at a time, making sure to stay within one square of the grid. Once an archaeologist has found an artifact, he or she will document it and its location by making notes and sketches in a field journal. This will provide them with more information about the site than the objects alone can provide, such as where objects were found in relationship to each other.

## What kinds of tools do archaeologists use?

Archaeologists use many different tools. They may use computers and satellites to survey a site before excavating. This involves taking aerial images of the features and size of a site so they can plan where they will dig. During the excavation itself, shovels are used for digging while soft brushes, trowels, dental picks and scalpels are used to clear away dirt in smaller spaces. Archaeologists may put the dirt they dig up through a screen or sifter before discarding it to be sure that even the smallest items, such as a bit of broken pottery or a charred seed, are recovered. One of the most important tools an archaeologist uses is a field journal. Field journals help archaeologists keep track of artifacts they find and information about them such as where they were found, when they were found, measurements, sketches and photographs of the artifacts and the process they used to excavate.

## What kinds of artifacts do archaeologists find?

Archaeologists can find many different artifacts depending on what kind of site they are excavating. Typical sites include hunting sites, campsites and village sites. Archaeologists may find artifacts such as spear points, stone cores or flakes of rock at a hunting site as well as the remains of animals such as bones, teeth and horns. Many of these animal remains have markings on them made by stone tools such as knives and scrapers, which informs archaeologists that these animals did not just die on their own.

Campsites are places where people lived temporarily. Activities at campsites might include processing animals like deer and bison for food and clothing, cooking and tool making. Archaeologists often find objects like stone scrapers, stone knives and flakes from sharpening tools at campsites. They may also find charred bones or other evidence of food preparation.

Village sites produce a range of artifacts including pottery, charred corncobs and farming tools like shell hoes and tibia digging tips. These artifacts indicate that activities such as farming and cooking were going on in villages as well as making ceramic vessels to store food and water. Structural artifacts including post holes and daub from houses can also be found at village sites.



## **What does an archaeologist do with an artifact once it is uncovered?**

Even though it is exciting to discover an artifact, archaeologists do not remove an artifact from where it is found until they can document it. Photographs, sketches and diagrams are made and measurements are taken to show exactly how each object is found in relationship to the others and to the site as a whole. After this, archaeologists will carefully remove and label the artifact for further study and analysis. Sometimes, the artifact is displayed in a museum for the public to learn more about it.

## **How do archaeologists know how old objects found at a site are?**

Archaeologists use different methods for finding out how old objects are including “absolute dating” and “relative dating” techniques. Absolute dating is used when archaeologists would like to know specifically how old an object is in terms of years. Radiocarbon dating, thermoluminescence and dendrochronology are examples of absolute dating techniques. Relative dating is used to tell if an object is older, younger or the same age as another object. Stratigraphy is one method of relative dating.

## **Why are ceramics (pottery) important to archaeology?**

Pottery is one of the most important artifacts to an archaeologist. It does not decompose as easily as food, plants and other organic remains, so it is often one of the most abundant artifacts found at a site. The method and style in which people made their pottery changes over time and across geographic areas, so pottery can often be used to determine the age of a site and its relationship with other cultures.

Attributes of pottery such as shape, size, decoration and clay type (called “paste”) are studied in order to divide pottery into different groups for study. The size and shape of a pottery vessel can provide clues as to how it was used and the daily tasks of the culture it came from. Decoration, or lack thereof, can be an indicator of economic status, or time period and geographical area and clay type can tell about the possible geographic area in which a vessel was made. This can lead to information about trade between people or the natural resources of a given area.

# Pottery Reconstruction Answer Key

## Ceramic Pot 1

Pottery Type: Burnished

Cultural Period: Mississippian Date Range: 1,000 B.P. to 450 B.P.

How was the texture of the pot made and what tools were used to make the design? Burnished pottery is made by coiling, then smoothing long pieces of clay to form the basic pot shape. The texture is created after the pot has dried by smoothing imperfections away with a stone or by hand.

## Ceramic Pot 2

Pottery Type: Cord-marked

Cultural Period: Woodland Date Range: 5,000 B.P. to 1,000 B.P.

How was the texture of the pot made and what tools were used to make the design? The surface texture of a cord-marked pot has parallel impressions left by the use of a cord-wrapped paddle applied to wet clay.

## Ceramic Pot 3

Pottery Type: Punctate

Cultural Period: Mississippian Date Range: 1,000 B.P. to 450 B.P.

How was the texture of the pot made and what tools were used to make the design? The surface texture of punctate pottery is created by using the edges of sticks or shells to imprint designs on smooth, wet pottery before firing.

What can the texture of a pottery sherd tell us about the culture that made it? Broken pottery can survive for thousands of years if it is buried. Additionally, pottery has changed in style often through time (the shape of the vessels and their decoration, etc.) so pottery can provide a valuable way of figuring out which time period it belongs to. Pottery styles were also a means of cultural expression, so they often allow archaeologists to distinguish among different cultures in the past.



# Helpful Resources

## Websites

- Oklahoma Archaeological Survey  
<http://www.ou.edu/cas/archsur/>
- The Archaeological Society of Oklahoma  
<http://www.csasok.org/>
- The Archaeology Collection at the Sam Noble Museum  
<http://samnoblemuseum.ou.edu/collections-and-research/archaeology/>
- Archaeology and the Oklahoma Historical Society  
<http://www.okhistory.org/kids/arexhibit.php#menu>
- Archaeologists in Oklahoma  
<http://www.ou.edu/cas/archsur/pdffiles/ARCHAEOLOGISTS%20IN%20OKLAHOMA.pdf>
- National Geographic Archaeology  
<http://science.nationalgeographic.com/science/archaeology/>
- Smithsonian Department of Anthropology  
<http://anthropology.si.edu/>
- The Archaeological Institute of America  
<http://www.archaeological.org/>
- Middens Article  
<http://sciencelearn.org.nz/Science-Stories/Resource-Management/Middens>

## Books

- "A Practical Handbook of Archaeology: A Beginner's Guide to Unearthing the Past" by Christopher Catling
- "The Archaeology of the Caddo" by Timothy K. Perttula, ed.
- "From Mounds to Mammoths: A Field Guide to Oklahoma Prehistory" by Claudette Marie Gilbert

# Academic Standards

## Oklahoma Academic Standards (OAS) - Science and Social Studies

### Grade 6 – 8

#### Science & Engineering Practices

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

## Next Generation Science Standards

### Grade 6 – 8

#### Science & Engineering Practices

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information