Lesson 3: Classification: How Archeologists Know What They Know

This lesson is divided into four sections: instructional goals, advance preparation, activity, and glossary.

Instructional Goals

Lesson Plan Overview
The student will learn that archeologists learn about past cultures by developing criteria and then classifying the materials they find according to these criteria. Students will explore this archeological method by developing criteria and classifying a group of pottery sherds.

Objectives
- The student will develop one criterion for dividing pottery sherds into three categories.
- The student will classify a group of pottery sherds based on the criteria he/she develops.

Skills Taught
Use of a graphic organizer, observation, comparison and contrast, analysis, decision making, organization.

Student Prior Knowledge
The student should have a basic understanding of classification. For example, the student should have the ability to identify characteristics of objects and then classify and arrange groups of objects by a variety of characteristics.

Advance Preparation

Prepare Yourself
- Pull items from the trunk that are needed (see “Use These Materials From This Trunk” below).
- Read “Background Information for Teacher” provided below.
- Make a photocopy for each student and yourself of Worksheet 6: Pottery Classification.
Use These Materials From This Trunk

Worksheet
   6: Pottery Classification

Graphic
   5: Pottery Sherd Analysis

Objects
   10 sets of pottery sherds (one set per group of students)
   Table service (fork, knife, and chopsticks)

NOTE: Numbers on sherds DO NOT correspond to any classification criteria; they are for inventory purposes only. Notify students of this.

Background Information for Teacher

What is classification? Human beings classify things all the time. They divide a group of objects into smaller groups by establishing criteria. For example, when cleaning out your garage, you might sort things according to whether you want to keep them, throw them away, or sell them in a rummage sale. Another set of criteria you might use to sort your garage “stuff” is if the objects are broken or not, if you have a use for them, or if you have room to store them.

How is classification useful to archeologists? Classification allows archeologists to look for patterns in artifact collections. These patterns are then used to sort the artifacts into categories. This method of analyzing artifacts helps archeologists associate artifacts with specific cultures. If criteria are too broad, or poorly defined, they may not be useful in classifying a group of artifacts and may not provide much information to the archeologist. For example, if a woven basket, a leather bag, a metal cooking pot, a china vase, a glass medicine bottle, and a plastic milk jug were grouped together in the category of “containers,” this would reveal little about the cultures that use them. Using different criteria, such as material or shape, when classifying or sorting the same pieces, might create groups that give the researcher clues to life ways of specific cultures.

Do all archeologists use the same criteria when classifying artifacts? No, all archeologists do not always use the same criteria. New ways of thinking and new understandings about a culture can be researched when different criteria are used for classifying artifacts. For example, if you were an archeologist given the task of sorting the collection of containers listed above, you might start by dividing them according to the complexity of technology that produced them — basket and leather in a primitive technology category and metal, china, and plastic in a complex technology category. Another archeologist looking at the collection might suggest that you further divide the categories by the condition of the artifacts. This approach would add information to the analysis about the durability of materials and nature of the environment in which the artifacts have been kept.
Opening Activity

1. Activate prior knowledge of students by having them identify similar characteristics and then classify a group of items using these characteristics.

Tell the students to pretend your classroom is being relocated and that they have volunteered to help you pack and move everything. You are grateful for their help and you only ask that they keep like things together. You don’t want the fish food packed in with holiday decorations or your fish will die before you find the food. What do they need to do to divide the contents of your room into smaller groups? The students should be able to identify characteristics (criteria) and then divide the items in the classroom (classify) using these characteristics. The exact criteria and classifications used will vary from class to class.

2. Explain that archeologists also look for patterns, develop criteria, and then classify artifacts using their criteria. Archeologists use classification to learn about the cultures that used the artifacts they are researching. Artifacts can be grouped in several different ways by using different criteria. Applying different criteria to the same group of artifacts provides the archeologist with more information than just one set of criteria might.

Show the class the fork, knife, and chopsticks. Ask the class what would happen if the criteria of eating utensil was used to classify these items. All three pieces would be in the same category. They are all eating utensils.

Assuming that these are the only eating utensils used by the two cultures they represent, and that the fork and knife are from the same culture, what can you determine about these two cultures? One answer might be that members of both cultures use utensils to eat with instead of using only their fingers.

Now, ask how these three could be broken into categories if the criterion used was whether the utensil was designed to cut. The knife would be in one category and the fork and chopsticks in another.

Again, assuming that these are the only eating utensils used by the two cultures they represent, and that the fork and knife are from the same culture, what can you determine about these two cultures? Have you learned anything else by using different criteria to classify them? Yes, the type of food served in one culture (knife and fork) requires that the diner have the ability to cut food portions at the time the food is eaten. The diner in the second culture (chopsticks) does not have this need, which might lead you to conclude that food is cut before being served to the diner.
Learning Activity
1. Explain that archeologists spend more of their time cleaning, labeling, sorting, and analyzing artifacts than they do excavating (digging) sites. Being able to see patterns, develop criteria, and classify objects is an important part of the research because these steps can lead to insights into the cultures being studied.

One type of artifact that is very useful when studying cultures is pottery. Most often pottery is found in pieces and not as whole pots. Fragments of pottery are called sherds.

Explain that the class will be examining and classifying sets of sherds.

2. Break students into groups of 2 or 3 (do not create more than 10 groups).
   Give each student a copy of Worksheet 6: Pottery Classification.

3. Give each group a set of sherds. Have the students take the sherds out of the container and examine them for a few minutes.
   (NOTE: The sherds all are numbered. These numbers have been placed on the sherds by the Kansas Historical Society staff for inventory purposes only. DO NOT use the numbers to classify the pieces.)

4. After examining the sherds, have each group develop a criterion that will allow it to separate the sherds into three groups. Instruct the students to write the criterion and sketch it on their worksheet.
   There is not just one correct answer for this. As long as the group can support its criterion choice by dividing the sherds according to the criterion chosen by the group, its answer is correct. Some criteria may be better, or more useful, than other criteria, but this does not make the less useful criteria wrong. If a group has difficulty, suggest that its members look for similarities such as surface decoration.

Closing Activity
(NOTE: All the sherd sets will be similar but not exactly the same. The sets are similar enough that comparing the criteria of one group with another is valid.)
1. Have each group share the criterion it used to classify the sherds and explain why it chose that criterion. List the criteria used on the board.

Did all the groups come up with the same criterion or were there many different criteria?

As long as each group can support its criterion choice by dividing the sherds according to the criterion chosen, its answer is correct.

Did using different criteria result in the same groupings of sherds?
2. Show the class Graphic 5: Pottery Sherds. This is a set of sherds that have been classified by archeologists. On the back of the photo is an explanation of the criteria used and what archeologists know about the cultures that created the pottery after classifying the sherds.

**Glossary for Lesson 4**

**Classification:** A process of dividing objects into categories.

**Criteria:** The characteristics used to define a group of objects.

**Sherd:** Fragment of a broken pottery vessel.

**Temper:** An agent added to clay to help the clay stay together in the forming and firing process. Sand, crushed shell, and crushed sherds are often used as temper.