IT'S IN THE GARBAGE

SUBJECTS: Science, social studies, language arts
SKILLS: Application, analysis, synthesis, evaluation
STRATEGIES: Scientific inquiry, problem solving, discussion, forecasting, research skills, writing, classification
DURATION: 60 to 90 minutes
CLASS SIZE: Any; groups of 3 to 4

Objectives:
In their study of archaeological concepts, students will analyze garbage from different places to:
1. Demonstrate competence in applying the concepts of culture, context, classification, observation and inference, chronology and scientific inquiry; and
2. Explain how their study of garbage relates to the methods of archaeology.

Materials:
Filled wastebaskets or small garbage bags from several places in the school, home, or elsewhere, selected to represent rooms of different function; plastic tarps are useful when spreading the garbage out. Undesirable and unsanitary items, such as used tissues or rotting food remains, should not be included. “It’s in the Garbage” activity sheet for each group; “Garbage Chart” activity sheet for each group (optional).

Vocabulary:
artifact: any object made or used by humans.
classification: systematic arrangement in groups or categories according to established criteria.
chronology: an arrangement of events in the order in which they occurred.
context: the relationship artifacts have to each other and the situation in which they are found.
culture: the set of learned beliefs, values and behaviors generally shared by members of a society. “The way the members of a group of people think and believe and live, the tools they make, and the way they do things” (Braidwood, 1967, p. 30).
evidence: data which are used to prove a point, or which clearly indicate a situation.
hypothesis: a proposed explanation accounting for a set of facts that can be tested by further investigation.
inference: a conclusion derived from observations.
midden: an area used for trash disposal.
observation: recognizing or noting a fact or occurrence.

Background:
The unusable or unwanted remnants of everyday life end up in the garbage. By studying what people have thrown away, archaeologists can learn a great deal about a culture. This is true not only of prehistoric peoples who left no written record about their lives, but also of people today. Bill Rathje, an archaeologist, studies the garbage of Americans. He has learned many things about the relationships of human behavior and trash disposal, information useful in studying people of the past and the present. He has found that people will often tell an interviewer what they believe is appropriate behavior, but their garbage tells another story. People frequently say they eat lots of fruit and vegetables, yet their garbage shows they do not. Another example is that people say they recycle more than they actually do (Rathje, 1984, p. 27).

Just as we do not throw our trash any old place, neither did prehistoric people. Their garbage heaps are called middens, and are a rich source of archaeological information about their lifeways. Layers of trash also tell a story over time. Archaeologists
excavate middens slowly and carefully, recording the location of artifacts and samples recovered from the midden. They analyze the tiny fragments of prehistoric meals (bone slivers, seed hulls, plant parts) and charcoal from cooking fires. The animals and plants these remains came from can be identified and archaeologists can learn very precise information about the economy of past people.

If a midden is disturbed and the layers mixed, it becomes impossible to interpret the lifeways of past people. Vandals looking for artifacts dig in middens and they destroy irreplaceable information about the past. They tear pages from the history book of time. Everyone can help by not digging archaeological sites or collecting artifacts, by refusing to buy artifacts from people who do, and by always reporting anyone seen digging at sites or collecting artifacts to law enforcement authorities.

Setting the Stage:

A famous anthropologist, Franz Boas, reportedly said “. . . man never lies to his garbage heap.” What do you think your family’s garbage could tell about you? (Examples: family size, income, preferred foods and activities).

Procedure:

1. Review the concepts learned in Section One: culture, context, observation-inference, classification, chronology, and scientific inquiry. Students will be applying these concepts to their study of garbage.

2. Explain to the students that they are going to be archaeologists, analyzing garbage (middens) to learn about the people who threw it away. Demonstrate some of the information that can be learned from garbage by examining a small amount of trash from your classroom trash can:
   a. What culture is this garbage from? Could the garbage be mistaken for that of another culture? Is the garbage in your classroom trash the same or different from classroom garbage in China? Portugal? Your town 100 years ago? Are basic human needs represented in the trash?
   b. What can you infer about the behavior of the thrower-awayers and the origin of the garbage based on your observations? Is cafeteria trash the same as that from the wood shop? the library? How is a single person’s garbage different from that of a family with many children? Is a vegetarian’s trash different from a meat-eater’s?
   c. Arrange the trash in chronological order. On the bottom is the oldest trash, on the top is the most recent garbage. If you find dated items through the trash, such as newspapers or postmarked envelopes or product dates, you can establish a precise date for the trash.
   d. Sort the trash into piles based upon some type of similarity. This is a classification, perhaps including categories like paper, food containers, other office supplies.
   e. The trash is obviously from a classroom because you have preserved its context, the relationship artifacts have to each other and the situation in which they occur. If you went to your town’s landfill, you might find some of the artifacts from your classroom trash but you could not interpret it as coming from your classroom because it has been all mixed up with trash from many other places. Its context has been lost.
   f. Construct a scientific inquiry. An example is: “Was the trash made by very young children?” The hypothesis could be: “If there are few papers with cursive writing in the trash, then the trash came from young children.” Classify the trash into two categories: papers with and papers without cursive writing. Accept or reject your hypothesis.

3. Divide the class into groups of 4 to 6 students and give each group a bag of trash. The group analyzes their trash using the activity sheet “It’s in the Garbage” (and optionally the “Garbage Chart”).

4. Students visit each other’s “middens,” and a spokesperson from each group presents a summary of their findings.

Closure:

Lead a discussion using the “Garbage Concepts” questions.

Evaluation:

Collect the students’ activity sheets and reports.

Links:

Section Two, Lesson 10: “Stratigraphy and Cross-dating”

Section Two, Lesson 11: “Artifact Classification”

References:


GARBAGE CONCEPTS

Question:
[When students propose an inference about the people who generated the garbage] What would the activity you are proposing (hypothesis) look like archaeologically? What artifacts would you expect to find if your hypothesis is correct?

Does your study of your garbage tell you everything about American society? Why or why not?

Do the contents of your garbage can change throughout the year? . . . as a result of special occasions like birthdays or company for dinner? What mistakes might an archaeologist make about your family if he/she studied only the garbage from those special events?

How would the results of your study be different if we had mixed your individual garbage bags all together into one heap?

Concept:
When archaeologists suspect a certain behavior was occurring, they make an hypothesis about what the archaeological evidence would look like. For example, archaeologists could hypothesize that people butchered large game where it was killed and only took the most desirable parts back to their village. In excavating the village, archaeologists would prove or disprove their hypothesis based upon the animal bones present.

One sample is only a glimpse into a complex society. Just as you only see a small piece of our culture from one sample, so too archaeologists see only a sliver of the past from one site.

Just as someone who wants to completely understand your family would study your garbage over a long period of time, an archaeologist studies many sites because one site cannot reflect the range of activities of a prehistoric society.

Context would have been lost, and only very general statements about the culture that generated the garbage could then be made. This is what happens when vandals dig up sites and say the artifacts are preserved, therefore, no information has been lost.
It's in the Garbage

Directions: Use this activity sheet to take notes during your “excavation.” When you have completed your excavation, use the information to write a report about the garbage that addresses the items below. You must give reasons for your answers based on the “evidence”—the artifacts which support your answer.

1. Could you tell when your garbage was thrown away? If yes, how? If no, why not?

2. List two or more inferences you can make about the person(s) who threw the trash away.

3. From where did your garbage come?

4. Which basic human needs does your garbage show are being met?

5. Name two or more of the categories into which you classified your trash.

6. How do you know this garbage is from your own culture?
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