Lesson 1.8

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, sequence.
Duration: 60 to 90 minutes.
Class Size: any; groups of 3 to 4.

Broken spear point from Stanly County, North Carolina, ca. 8000 BC.

Objectives

In studying archaeological concepts, students will analyze garbage from different places to:

- demonstrate competence in applying the concepts of culture, context, classification, observation and inference, chronology and scientific inquiry;
- 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; disposable gloves; plastic tarps are useful when spreading out the garbage. (Undesirable and unsanitary items, such as used tissues or rotting food remains, should not be included in the trash to be analyzed.) "It's in the Garbage" activity sheet for each group; "Garbage Chart" activity sheet for each group (optional).

Vocabulary

Artifact: any object made, modified, or used by humans; usually this term refers to a portable item.
Chronology: an arrangement of events or periods in the order in which they occurred.
Classification: a systematic arrangement in groups or categories according to established criteria.
Context: the relationship artifacts have to one another and the situation in which they are found.
Culture: the set of learned beliefs, values, styles, and behaviors generally shared by members of a society or group.
Data: information, especially information organized for analysis.
Evidence: data that are used to support a conclusion.
Hypothesis: a proposed explanation or interpretation that can be tested by further investigation.
Inference: a conclusion derived from observations.
Midden: an area used for trash disposal; a deposit of refuse.
Observation: the act of recognizing or noting a fact or occurrence; or the record obtained by such an act.

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. Archaeologist Bill Rathje 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. Rathje has found that people will often tell an interviewer what they believe is appropriate behavior, but their garbage tells another story. For instance, people frequently say they eat lots of fruits 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 in any old place, neither did prehistoric people. Archaeologists call their garbage heaps *middens*, and middens are a rich source of archaeological information about ancient people's lifeways. Layers of trash also tell a story over time. Archaeologists excavate middens slowly and carefully, recording the location of *artifacts* and samples they recover. They analyze the tiny fragments of prehistoric meals (bone slivers, seed hulls, plant parts) and charcoal from cooking fires. The animals and plants from which the bits of evidence came 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, chronology and context are lost; it then 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 and by refusing to buy artifacts from people who do.

Setting the Stage

The 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 Part 1: *culture*, *context*, *observation*, *inference*, *classification*, *chronology*, and *scientific inquiry*. Students will be applying these concepts to their study of garbage.

2. Explain to 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:

- 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?
- What can you *infer* about the people who threw these things away 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?
- 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.
- Sort the trash into piles based upon some type of similarity. This is a *classification*,

perhaps including categories like paper, food containers, and other office supplies.
- 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. However, 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.
- 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 (and disposable gloves). The group analyzes its 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 its findings.

Closure

Lead a discussion using the "Garbage Concepts" questions.

Evaluation

Collect the students' activity sheets and reports.

Links

Lesson 2.2: "Stratigraphy and Cross-Dating."
Lesson 2.3: "Artifact Classification."

Sources

Rathje, William L. 1984. "The Garbage Decade." *American Behavioral Scientist* 28(1), pp. 9–39.

Rathje, William L. 1991. "Once and Future Landfills." *National Geographic* 179(5), pp. 116–134.

Rathje, William L., and Cullen Murphy 1992. *Rubbish: The Archaeology of Garbage*. New York: Harper Collins.

Smith, Shelley J., Jeanne M. Moe, Kelly A. Letts, and Danielle M. Paterson. 1993. *Intrigue of the Past: A Teacher's Activity Guide for Fourth through Seventh Grades*. Washington, D.C.: Bureau of Land Management, U.S. Department of the Interior. [This lesson is adapted from "It's in the Garbage" on pp. 34–38, courtesy of the Bureau of Land Management.]

Ward, H. Trawick, and R. P. Stephen Davis, Jr. 1999. *Time Before History: The Archaeology of North Carolina*. Chapel Hill: University of North Carolina Press. [The image in this lesson's main heading is taken from Figure 2.4.]

It's in the Garbage

Name:

Directions: Use this activity sheet to take notes during your excavation. When you have completed your excavation, use the information in your notes to write a report about your findings that addresses the questions below. You must give reasons for your answers based on the evidence, that is, based on the artifacts that 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?

Garbage Chart

Name:

Sketch of item	Description of item (Observation)	Guess as to use or purpose (Inference)

Garbage Concepts

Question:	Concept:
When students propose an inference about the people who generated the garbage, ask them: What would the activity you are proposing (hypothesis) look like archaeologically? What artifacts would you expect to find if your hypothesis is correct?	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 disapprove their hypothesis based upon the animal bones present.
Does your study of your garbage tell you everything about American society? Why or why not?	One sample is only a glimpse into a complex society. Just as you only see a small piece of our culture from one sample, archaeologists see only a sliver of the past from one site.
Do the contents in 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?	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 people engaged in.
How would the results of your study be different if we had mixed your individual garbage bags all together into one heap?	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 mistakenly say the artifacts are preserved and no information has been lost.