

MINI LESSON: Trash Talks

Interpreting Discarded Remains

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Students become archaeologists as they study materials left behind by modern humans. By sorting through and categorizing trash, students learn that archaeology is the study of ancient people through an examination of used and discarded objects, and that scholars must work together to understand the evidence they uncover.

Grade Levels

Upper elementary ages through high school. This exercise can be easily modified to be successfully carried out with all ages. Everyone loves a puzzle!

Goals

Students interpret modern trash to learn about people today in the same way archaeologists use ancient trash and material culture as evidence for people's lives in the past. **Material culture** refers to physical things that can reveal **culture** (behavior and beliefs). For younger students the selection of trash can be kept simple; for older students it can be more complex, selected from multiple rooms and more people, and it can leave more questions unanswered. This is an exercise in critical thinking, observation and inference, and confronting unrecognized bias.

Students will learn that:

- archaeologists answer questions about a culture by studying the things people used and discarded (material culture, things)
- categorizing helps historians and archaeologists interpret evidence
- **observations** (what we can see) are different from **inferences** (our conclusions/stories we tell)
- **hypotheses** (educated guesses) change as more information is gathered
- scholars build upon initial facts and solve problems working together
- objects or their attributes (such as color) may mean different things to different people and within different cultures
- some questions will be unanswerable by the current evidence

Ideally, students will conclude by summarizing questions still unanswered by their data—questions that will require further research or excavation.

Cultural/Historical Context

Archaeology includes the study of trash and changes to material culture depending upon time period, culture, and context. Excavators often recover sherds (broken pottery fragments), pits, seeds, and bones left from meals, old tools, coins, and lost or discarded objects of all kinds. Sometimes these were intentionally thrown out and are found in trash pits, old wells, and dumps. At other times, objects were lost or discarded wherever the ancient owner happened to be.

Some waste items will not be part of this study, since collecting it can be unsanitary, but archaeologists study food remains, residues in jars, and even the remains of ancient latrines and sewers to learn what people ate and drank.

Trash provides many useful clues that archaeologists can use to reconstruct the way people lived in the past. When considered together with associated things from the same time and place, trash can tell us about the number of people who lived at a site, their professions and interests, their diet, where they traveled or traded, the environment, and much more.

Time Needed

The time spent collecting trash or gathering materials to use as trash will vary. Once students begin to analyze the collected trash, listing and categorizing it and discussing conclusions should take approximately 1½ to 2 hours, depending on the size of the class, ages of the students, and complexity of the “finds.”

Required Materials, Tools, and Preparation

Teachers can carefully collect safe trash or manufacture it to suit a story they have in mind, compiling enough trash for all the groups of students to analyze. They can also ask some students to collect trash (with parent or teacher help) at home or school and to bring it to class for analysis. The collection needs to be very carefully monitored to avoid saving items that are wet, unsafe, or unsanitary as well as anything private, that includes names, or that can easily be associated with specific people.

Whether brought from home or office or manufactured by the teacher, the trash will ideally be from several different rooms (kitchen, bedroom, photocopy room, reception area, office) and allow students to infer what kind of area it came from, how many people were living in the house or working in a space when the trash was collected, what their possible ages and roles were, and what they were doing.

If the trash is from school, it should come from several different classrooms, permitting conclusions to be drawn about subjects and/or ages taught and whether both adults and children produced the trash. Trash from different rooms should initially be kept separate and not mixed. The teacher may also design a scenario, such as a birthday party for two different children, to encourage conversation about cultural assumptions. For example, students might discuss gendered behavior and when/whether we can safely infer gender from material culture.

The Classroom Process

The trash from different rooms may be kept separate for easier analysis, with the goal being for students to identify the function of a room as well as analyze what can be inferred about its users. The organized trash mirrors the artifacts an archaeologist might find while carefully excavating the different rooms of a house. For a more challenging project, combine all the trash from different rooms and then divide it into several bags. This trash might mirror the discarded finds all mixed together in an ancient pit or dump. A teacher-designed scenario could be presented in either way (in separate containers of trash from different activity areas, or in containers of trash all mixed together from all areas).

Categorizing, Observation, and Inference

Since professional archaeology is a group activity, having students work in teams makes the analysis more realistic as well as more fun. Different student groups should be assigned the job of becoming experts in particular bags of trash. First, they should categorize the objects to start to

gain control over the mess. They may decide to reorganize as they proceed. They should then write down their organized observations and – separately – the inferences they draw from them. Separating observations from inferences can be difficult for students and adults alike, and should be a high priority. Depending on the nature of the trash collected (from a kitchen, for example), students might also consider what has been left out for reasons of sanitation, and guess what missing food or garbage might reveal about our culture or about a kitchen’s users.

Procedures

Divide the class into small groups of 4-6 students. Give a bag of trash to each group. You may give students rubber gloves if you wish. Each group of students should be instructed to sort the trash into categories, which may overlap. This might be a moment to point out that **inorganic** trash (stone, metal, clay, glass) mostly survives best, since **organic** materials (from plants and animals) decay. The trash chosen for this exercise is better preserved than that an archaeologists would find.

Many different categories are possible, for example:

- material: plastic, paper, metal
- color: red, white, multi-colored
- type: food items, tools, sports equipment
- theme: food-related items, tools
- combinations of the above: plastic tools, food containers

The point of categorizing is to make order out of a jumble of materials. Students may change their minds about their categories and, if so, should discuss why categorizing was difficult, why they changed their minds, and how the categories overlap.

The compiled data should be considered as the foundation from which students put together their observations and draw conclusions—make inferences—about the people who left the trash.

Teachers should first discuss the difference between **observations** and **inferences**.

Explain that students will put together their observations together with their knowledge of modern society to draw reasoned inferences and answer specific questions. The teacher should develop the questions in part based on the trash collected.

Questions can include:

- Who were the people who discarded the trash?
- How many people were there?
- What were they doing?
- What time of year was it?
- Are there clues about age? Is there evidence for gender? (Might inferences be based on incorrect cultural assumptions?)
- What might be missing from the trash, and why?

When the teacher is satisfied that each group has organized its finds, made reasonable observations, and come to some logical inferences, the groups should come together to present their findings.

Members of each group should:

- explain how categorizing helped them organize the collection of objects

- summarize their observations
- present their inferences
- note alternative explanations for some data

The end of an archaeological project requires that the investigators think again about what they have found and have NOT found. After the groups have presented their individual conclusions, ask the students to put all the clues from the entire assemblage together and try again to interpret the trash. Are there any additional material remains they would expect (or hope) to find if this were a real dig site and they continued excavating, or that other archaeologists might uncover at similar sites? Students should reach a clearer and fuller understanding of the people who left the trash when they consider all of it together rather than in isolation.

Final story: if the trash assemblage has been partially manufactured by the teacher with a story in mind, as a finale tell the students what the actual story is behind the trash they have been analyzing. On a real excavation, there would be no one to explain the site unless the archaeologist found an explanatory text buried with the trash (which does not happen)!

Assessment

Assessment should allow for mistakes. The highest credit should be given for careful observation and helpful teamwork. The ability to distinguish observations from inferences and the realization that there can be several explanations for some data are also worth rewarding!

Resources on Archaeology for the Teacher

Bahn, Paul. 2018 (2nd ed.). *Archaeology: A Very Short Introduction*. Oxford: Oxford University Press.

Muckle, Robert J., and Stacey L. Camp. 2021 (3rd ed.). *Introducing Archaeology*. Toronto: University of Toronto Press.

Rathje, William L. 1974. "The Garbage Project: A New Way of Looking at the Problems of Archaeology." *Archaeology*, vol. 27 (4): 236-241.

An early project that recognized the value of modern trash analysis in teaching about the past

Sutton, Mark. Q. 2018 (5th ed.). *Archaeology: The Science of the Human Past*. Abingdon: Routledge Press.

This book may be too expensive for those who just want a quick resource, but it will be useful for a deeper dive.

White, John R., and Mattie Oveross. 2019 (2nd ed.). *Hands-On Archaeology: Authentic Learning Experiences That Engage Students in STEM*. Waco Texas: Prufrock Press.

Brief Overviews of Archaeology

- Archaeological Institute of America (AIA)
<https://www.archaeological.org/wp-content/uploads/2019/08/Archaeology-101.pdf>
- Society for American Archaeology
<https://www.saa.org/about-archaeology/what-is-archaeology>
- National Geographic
<https://www.nationalgeographic.org/encyclopedia/archaeology/>
- Artifacts and Artifact Classification
<https://science.jrank.org/pages/530/Artifacts-Artifact-Classification.html>

Lessons and Projects from the Department of the Interior

- National Park Service: Archaeology Program Teacher Resources
<https://www.nps.gov/subjects/archeology/for-teachers.htm>
- National Park Service: Teaching with Museum Collections (American history)
<https://www.nps.gov/museum/tmc/docs/TMCtemplate.html>
- Bureau of Land Management (BLM) Project Archaeology
<https://www.blm.gov/learn/teachers/project-archaeology>
<https://projectarchaeology.org/about/>
- Archaeology-relevant state common core and science standards for grades 3-5
<https://projectarchaeology.org/services/teachers/common-core-state-standards/>