

## Overview of Archaeological Methods

### A. What is archaeology?

Often defined as the study of the human past through its material remains. To study the past, archaeologists have developed a series of methods by which they discover, recover, preserve, describe, and analyze the remains of the past – the archaeological record.

### B. Archaeology has four principal goals:

1. to reveal the form of the past: what, when, where.
2. to discover function: what was the purpose of an artifact, feature, etc.? How was it used?
3. to understand cultural processes: why, how cultures changed.
4. to understand the meaning of culture for people in the past: discover the significance of symbols, architectural designs, etc. to the people who used them.

### C. Archaeology makes use of the scientific method.

Testing of hypotheses by means of **test implications** (what should be true and observable if the hypothesis is valid). Hypotheses tested through careful collection of data and interpretation.

### D. Synchronic and diachronic perspective

Archaeology provides anthropology's time depth: horizon (**synchronic** – a “snapshot” in time) and tradition (**diachronic** – a reconstruction of an area's culture through time).

### E. Archaeological data

1. **Artifacts**: portable, humanly made or modified object.
2. **Features**: non-portable, humanly made structures such as firepits and houses.
3. **Ecofacts**: natural materials found in a site that haven't been made or deliberately modified by humans: animal bones, pollen, etc.
4. **Sites**: classification by location (e.g., cave site, coastal site), function (habitation site, kill site, etc. ), age (Paleolithic, Neolithic, Bronze Age, etc.), cultural affiliation (e.g., Aztec, Maya), single occupation and multiple occupation.
5. **Regions**: need to situate site in region (may be as large as “Northeast,” “Southwest,” etc.).

### F. Deposition and Transformation – How is the archaeological record formed?

**Behavioral formation processes**: acquisition, manufacture, use, and discard. Factors such as re-use and recycling all affect the formation of the archaeological record. An item in use is said to be in systemic context, while an item that has been discarded or abandoned is said to be in archaeological context.

Transformational processes: natural and cultural. A **natural transformational process** would be something like erosion – the archaeological record is modified (transformed) by the erosion of soil.

A **cultural transformation process** would be something such as people scavenging an abandoned building for usable materials or disturbing a site by digging an irrigation canal.

G. Reconnaissance (finding sites)

Ground, aerial, subsurface. Surveys are systematic and sampling methods are frequently used. All sites recorded, described and mapped.

H. Basic site concepts

**Matrix** (the soil that surrounds the artifacts, features, etc.); **provenience** (the exact location of the find in space recorded as x, y, and z coordinates); **association** (finds found together, that is “associated” with each other such as an arrowhead embedded in the rib of an animal), **context** (**primary**: found where it was left by the people who used it, such as a grinding stone on the floor of a room or **secondary**: moved from where it was originally used or discarded, such as stone tools that have washed out of a site because the matrix has been eroded by water runoff). Provenience and association are critical to interpretation! Must be recorded before any object removed from site.

Proper excavation requires that attention be paid to **stratification**, which is the natural layering that often occurs in sites; it is much like the layers of stone often seen in gorges except that the layers are of soil and the result of human activity. **Law of superposition**: unless disturbed, the top layer is youngest, the bottom layer is oldest; the layers form a chronological sequence. Rule of excavation: keep together all items that come from a given layer.

**Sampling**: as in other fields, statistical sampling is essential. A reliable sample of the whole is obtained to provide the basis for generalizations. This is like taking a poll – it isn’t necessary (or even possible in many cases) to ask everyone’s opinion to find out how a population feels about a given issue, but without a statistically valid sample, conclusions will be unreliable. This approach saves time and money and also preserves part of a site for future archaeologists who may have more advanced methods and different questions to answer about the past.

I. Classification. We classify according to three primary attributes:

1. **Stylistic**. Example from class: the color or design on a beverage container.
2. **Form** (shape). Example from class: cylinder shape of can, cylinder tapering to a neck on a bottle.
3. **Technological**. Example from class: aluminum, glass and plastic containers.  
Technological attributes are those that relate to manufacture – they can be materials or manufacturing processes (e.g., blown glass, wheel-thrown pottery)

J. Dating the past

1. **Relative** and **absolute** (absolute also known as **chronometric**). Relative is “older than,” “younger than.” In other words, comparison is relative to something else. No actual dates are involved. Example: relative dating of strata in a site, with bottom layer being older than the one above it, and so on. Absolute/chronometric: an actual date in years ago, A.D., B.C. etc. Obviously, absolute dates are more useful than relative dates when they can be obtained.
2. Examples of absolute dating methods: **dendrochronology** (tree-ring dating) and **radiometric** (**carbon-14**, **potassium-argon**). Sometimes we can decipher a prehistoric culture’s writing and if they had a calendar, we can read the dates they

recorded. We can do this for the Maya, who put dates on their monuments that can be correlated with our calendar.

#### K. Reconstructing the past

Archaeology has proved the multilinear model of human cultural evolution – cultures develop along many lines, each according to its environment and other locally unique factors. Study of adaptation to an environment – social, physical and biological – is called cultural ecology.

Interpretive tools:

1. **Analogy.** Analogy provides an important source of hypotheses to be tested. These may come from historical documents – accounts of travelers, missionaries, etc. Ethnographic accounts provided by anthropologists are especially useful. Sometimes archaeologists do their own ethnography (ethnoarchaeology). For example, an archaeologists interested in understanding prehistoric stone tool manufacture and use might study a living group that still makes and uses stone tools.
2. **Experimental archaeology.** Another source of analogies comes from archaeological experiments in which archaeologists attempt to replicate something from the past to see how it was done. For example: an experiment is performed to determine how a tool might have been made and or used.
3. Remember that analogies and knowledge obtained from experiments must always be tested against the actual evidence from the archaeological record.