

Anthropology 120

NM HED Area III: Laboratory Science Competencies

UNM Core Area 3: Physical and Natural Sciences

Student Learning Objectives for Anth 120:

In Anth 120, students will:

1. Understand the basics of the science of archaeology, including goals, methods, theory, terminology, and ethics. (Competency 1)
2. Identify and evaluate archaeological objects and data in order to understand the human past. (Competencies 2, 3 & 4)
3. Discuss impacts of archaeological research on the archaeological record and on contemporary people and cultures. (Competencies 3 & 5)
4. Understand current legal protections and restrictions involving archaeology. (competencies 3 & 5)

Assessment Questions:

Competency 1: Describe the process of scientific inquiry

1. The scientific method provides a powerful way to investigate the world around us because:
 - a. Unlike other more subjective methods, science can guarantee absolute truth.
 - b. Almost all researchers accept the infallibility of science, making research across different disciplines compatible.
 - c. Science is self-correcting; as more facts about the world become known, science is willing to reject flawed explanations in favor of better ones.**
 - d. Science is not self-correcting, thus it is able to prove a theory rather quickly.
 - e. Everyone has always believed in science.
2. Which of the following is **not** a step in the scientific method?
 - a. Define a relevant research problem.
 - b. Generate one or more hypotheses.
 - c. Test the hypothesis or hypotheses with relevant data
 - d. Prove the hypothesis or hypotheses true.**
 - e. Reject, revise, and/or retest the hypothesis or hypotheses as necessary

3. Science is the best way to examine the material world because it is always objective, and therefore cannot be influenced by the social or political climate of the times. **F**
4. Science is concerned with causes, seeking theories that not only predict what will happen under a specific set of conditions, but also explain why it will happen. **T**
5. A scientific theory would seek to explain why questions, for example “Why this red stain in the soil?” or “Why did humans switch from hunting and gathering to agriculture?” **T**

Competency 2: Solve problems scientifically

6. After excavation, recovered artifacts must be processed in the lab before advanced analyses take place. Such labwork may involve
 - a. Simple cleaning of the artifacts
 - b. Stabilization of artifacts to prevent decomposition
 - c. Refitting
 - d. **All of the above**

7. Written records document the historic past. So why do archaeologists do historical archaeology?
 - a. **Documentary sources can be selective and biased toward the interests of particular cultural, political, or ethnic groups.**
 - b. Documentary sources do not exist for most of the historic past.
 - c. Archaeological excavations can demonstrate that historical records are wrong, and thus useless for inferring anything about the past.
 - d. None of the above; if written records exist, archaeologists do not bother with historical archaeology.

8. The principle of superposition states that:
 - a. The uppermost sediments are the most important for archaeological analysis.
 - b. Sediments are deposited in continuous layers.
 - c. **In any undisturbed sequence of sedimentary deposits, the lower layers are older than the upper layers.**
 - d. Index fossils will be found above older fossils.
 - e. Sediments will be deposited in horizontal layers.

9. Microfauna (small animals) can be good indicators of climate and environmental change because
 - a. **they are sensitive to local changes in climate and environment**
 - b. they eat local pollen
 - c. they sometimes carry bubonic plague
 - d. a and b are correct
 - e. none of the above

10. Which of the following could be an archaeological indicator of ritual:
 - a. a focus of attention (such as on a specific building)
 - b. detection of a boundary zone between this world and the next
 - c. symbols that indicate the presence of a deity
 - d. presence of offerings
 - e. **all of the above**

11. Data are the objects discovered during archaeological excavations that serve as a basis for study and discussion. **F**
12. Postprocessual archaeology views culture from a systemic perspective, and emphasizes evolutionary generalizations rather than historical specifics. **F**
13. Processual archaeology attempts to remain ethically neutral and claims to be explicitly non-political. **T**

14. Why was it so difficult for Europeans during the early 19th century to accept the fact that Native Americans had built the mounds and earthworks in the Ohio and Mississippi River valleys?
 - a. **Believing that a superior race had built the mounds fit nicely into the social and political context of the times, helping to justify colonialism.**
 - b. Archaeological and historical evidence to suggest that Native Americans had built the mounds was completely lacking.
 - c. It was a conscious effort on the part of racist archaeologists to steal Native American land; everyone really knew that the Native Americans had built the mounds.
 - d. Westward expansion had not yet begun; European colonists were therefore unfamiliar with how similar the mounds really were to the mounds actively being constructed by living Native Americans.
 - e. No one really accepted the explanation, but it was part of the history books.
15. If, in your explanation for a cultural change (for example, the origin of the state), you stress the importance and interaction of several different factors operating at the same time, this would be considered a(n)
 - a. monocausal explanation
 - b. multiplier effect explanation
 - c. idealist explanation
 - d. **multicausal or multivariate explanation**
 - e. critical theory

Competency 3: Communicate scientific information

16. Archaeology can best be defined as:
- The study of humans in all times and places.
 - The study of the biological aspect of humans.
 - The study of the past through the systematic recovery and analysis of material remains.**
 - The study of past and present human cultures through written records and oral history
 - The study of ancient physical remains.
17. Which of the following is commonly used to reconstruct gender roles in prehistory?
- Ethnographic analogy
 - Bioarchaeology
 - Seriation
 - A and B**
 - A and C
18. Which of the following is *not* an example of experimental archaeology?
- Using British schoolboys to see if they could move stones similar to those used to build Stonehenge
 - Using a stone tool to scrape hide and then examining microwear present on the tool's edge to determine the type of wear caused by hide-scraping
 - Using seriation to construct a way to date archaeological sites based on painted pottery styles**
 - Throwing hafted spear points into elephant carcasses to determine their capacity for penetration
19. Studying how a large animal carcass decomposes on an African savannah to determine how long it takes the carcass to disarticulate in different seasons and which bones are carried away by carnivores is an example of
- Ethnoarchaeology
 - Taphonomy**
 - Lithic analysis
 - Geoarchaeology
20. Bioarchaeologists study
- faunal assemblages from archaeological sites in order to determine past interactions between human populations and animals
 - macrobotanical remains from archaeological sites in order to interpret past interactions between human populations and plants
 - the human biological component of the archaeological record**

- d. all of the above; bioarchaeologists study all aspects of ancient life (plant, animal, and human) in archaeological contexts
21. Any movable object that has been used, modified, or manufactured by humans is called
- a feature.
 - art.
 - an artifact.**
 - pottery.
 - a stratum.
22. An artifact's provenience is
- the geologic source of the raw material from which the artifact was manufactured.
 - the artifact's location relative to a system of spatial data collection.**
 - the facility where the artifact is currently stored.
 - how the artifact was used in the prehistoric past.
 - the written history of the artifact.
23. A relative dating method that orders artifacts based on the assumption that one cultural style slowly replaces an earlier style over time is
- dendrochronology.
 - the index fossil concept.
 - seriation.**
 - the principle of superposition.
 - stratigraphy.
24. Which of the following is true of indigenous archaeology?
- It is not very appealing to archaeologists interested in symbolic relationships.
 - It means that only indigenous people are allowed to research their own past.
 - It is based more in the processual than in the postprocessual paradigm.
 - It means indigenous groups have input into and some level of control over research on their ancestors.**
 - None of the above.
25. Anthropologists refer to the rules and structures that govern relations within a group of interacting people as
- residence patterns
 - social organization**
 - residence rules
 - kinship systems
 - political campaigning

Competency 4: Apply quantitative analysis to scientific problems

26. You are surveying in the Near East for archaeological sites, and come upon several artifacts on the ground surface. Historical documents suggest there was once a temple in this area, and you think you may have found this site. Because of the sacred nature of the site, you want to know where the temple lies before excavating. How might you **map the site** without excavating it?
- Talk to local people about the probable location of the site.
 - Use stratigraphy to decide what layer in which the temple would likely be found.
 - Use random sampling to excavate a series of test pits across the site.
 - Use remote sensing methods such as ground penetrating radar and/or aerial photography**
 - If the historical documents do not show a map of the site, then excavations are the only means to accomplish the goals.
27. The radiocarbon date 2850 +/- 40 BP suggests that there is a 66% chance that the true age
- lies between 2810 and 2890 BP.**
 - is 2830 BP.
 - lies between 2810 and 2850 BP.
 - lies between 2850 and 2890 BP.
 - is 2850 BP
28. After excavating a hearth feature, you submit organic material from the hearth for a conventional radiocarbon date. The result comes back as follows: Beta-33003, 3500 +/- 100 radiocarbon years BP. Which of the following is NOT true about your result?
- Beta* represents the Laboratory.
 - 3500 represents the years before present.
 - +/- 100 represents the standard error.
 - 33003 is the radiocarbon date**
 - 3500 represents radiocarbon years
29. The most effective technique to date organic material older than 75,000 years is radiocarbon dating. **F**
30. If an archaeologist uses thermoluminescence to date stone tools that appear to have been burned, the date will indicate when the tools were last burned, but not necessarily how long ago the tools were made. **T**
31. You have excavated a site, but have recovered no organic remains. The only material recovered from the site is pottery. Using the argon-argon technique would be the best way to date the site. **F**

32. A tree ring sequence developed in the southwestern United States would be equally as applicable in a region such as the Mediterranean. **F**
33. Tree ring dating would be a useful technique for dating a volcanic formation containing hominid fossil remains. **F**

Competency 5: Apply scientific thinking to real world problems.

34. It is always legal to collect and sell an artifact in the USA if
- The artifact is discovered on government land.
 - The artifact is associated with a Native American burial.
 - The artifact is younger than 50 years old.
 - All of the above.
 - None of the above.**
35. It is important that archaeologists devote attention to public education because
- it is ultimately the public that financially supports archaeological research.
 - members of an educated public are far less likely to loot or vandalize archaeological sites.
 - both A and B.**
 - it is the archaeologist's job to conduct research, not waste valuable time and money talking to an uninformed public
 - it is the best way for an archaeologist to become famous.
36. The majority of field archaeologists are currently employed in educational institutions. **F**
37. The Antiquities Act, passed in 1906, set firm penalties for the looting of archaeological sites, even by today's standards; because this law has worked so well to discourage looting, no additional acts have been necessary. **F**
38. The Native American Graves Repatriation Act covers the protection and repatriation of Native American graves and grave goods. **T**
39. NAGPRA requires institutions receiving federal funds to inventory and attempt to affiliate and, if asked, repatriate human skeletal remains and associated grave goods to existing federally-recognized tribes. **T**
40. NAGPRA is fairly straightforward to implement because all Native American tribes want culturally affiliated skeletal material and grave goods to be repatriated to them so that they can rebury them. **F**
41. Although archaeology can provide important information about what has happened in the past, the usefulness of archaeology is limited to largely intellectual pursuits; practical applications of archaeology that actual benefit the modern world are extremely rare. **F**
42. Archaeologists are playing an increasingly important role in the investigation of human rights abuses; for instance, professional archaeologists have been involved in excavating mass graves in Rwanda and Iraq. **T**
43. Archaeology can be used to further the political interests of particular groups of people. Nazi archaeologists, for example, argued that agriculture, music and writing systems

first appeared in northern Germany and spread throughout the world from there; Hitler used such information to justify the need for Nazi domination of the world. **T**

44. Tribes that are culturally affiliated with particular burials, funerary objects, and objects of cultural patrimony are entitled to have those burials and objects repatriated to them.

T

Assessment Procedure:

At the end of each term, all students in each section of Anthropology 120 will take an online exam consisting of four questions randomly drawn from each of the five competencies, for a total of 20 questions. The average grade for each competency will be collated by members of the undergraduate committee. The committee will report the grades to the Anthropology 120/122L professors, who will meet to evaluate the results. The professors will identify the competency with the lowest average score, and will work together develop curricular changes to improved instruction.