Introduction to Archaeology: A Workbook

INTRODUCTION TO ARCHAEOLOGY: A WORKBOOK

ASHLEY LEMKE

ALANIS RAMOS AND BROOKE TROUTMAN

Mavs Open Press

Arlington

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ABOUT THIS PROJECT

OVERVIEW

This workbook was designed for the Introduction to Archaeology (ANTH 2339) class in the Department of Sociology and Anthropology, University of Texas at Arlington. It was created to provide exercises that supplement and expand on topics and issues raised in lecture. For each major topic, students complete exercises that serve a range of functions; for example, some chapters are designed as note-taking aids to be filled out in class and/or during lecture (Chapter 4), while others can be completed at the end of the week to review key concepts and ideas. Exercises in this workbook vary from creating bullet point lists, completing tables, conducting online research, and writing short essays. At the end of the course students will have a completed workbook that can serve as a study guide.

ABOUT THE AUTHOR

Ashley Lemke is an Assistant Professor of Anthropology in the Department of Sociology and Anthropology at the University of Texas at Arlington (UTA). She received her Bachelor's degree in Anthropology and Classical Civilization from the University of Texas in 2008, her Master's degree in Anthropology from the University of Michigan in 2010, and her PhD in Anthropology from the University of Michigan in 2016. Her research focuses on hunter-gatherers and she works on land and underwater to examine archaeological sites. Dr. Lemke has worked extensively in North America and has conducted research at archaeological sites in Romania, Germany, and Spain. In addition to rigorous and innovative research, Dr. Lemke is a dedicated teacher. She is the recipient of the 2020 President's Award for Excellence in Teaching and the 2019 Outstanding Teaching Award for Tenure-Track Faculty from the University of Texas at Arlington. She was also awarded the Student Organization Advisor of Year Award in 2020 for her service as Faculty Advisor to the Anthropology club at UTA.

Brooke Troutman is the Scholarly Impact and Social Sciences Librarian for The University of Texas at Arlington Libraries. She is the liaison librarian for the School of Social Work as well as the Department of Sociology and Anthropology. She received her Bachelor's degree in History and Anthropology from Illinois State University in 2011. She received her Master's degree in Library and Information Science from Wayne State University in 2016. Her research interests include reclaiming library relevancy as a fundamental place for lifelong learning. This work includes collaborating closely with all university faculty and students to improve research and scholarship across disciplines. Her interests also include working to show libraries as a place for inclusion and access to information for all. She is a member of the American Library Association and the Association for College and Research Libraries. She is also a member of the Value of Academic Libraries Committee which works to promote and grow the value of academic libraries and improve the higher education experience for students.

Alanis Ramos Berrios is a recent graduate from the Anthropology program at the University of Texas at Arlington. She received her bachelor's degree in December 2019. As an undergraduate, she became the President of the Anthropology Club at her university and used this as an avenue for other endeavors such as becoming a Research Assistant and teaching College Success courses to incoming freshmen. She has been part of two archaeological field projects in the southern United States that focus on prehistoric hunter-gatherers. She plans to keep pursuing archaeology at a graduate level.

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UTA CARES GRANT PROGRAM

AUTHOR'S NOTE

Creation of this workbook was sponsored by the University of Texas at Arlington (UTA) CARES Open Access Education Grant Opportunity. I commend UTA's commitment to providing no-cost resources for students. Over the course of teaching Introduction to Archaeology at UTA since Fall of 2016, I was contacted by numerous students who found traditional textbooks cost prohibitive. This class is now included in the Core Curriculum at UTA, fulfilling a Social and Behavioral Sciences requirement as it includes communication, social responsibility, and empirical and quantitative skills components. This course now serves more students than ever and with feedback from prior students, as well as support from the CARES Grant Opportunity, this workbook was created to provide a free resource for all future students in Introduction to Archaeology. I would like to thank Michelle Reed for all of her guidance and support throughout the grant application process, as well as Kartik Mann and Prathvi Kanchan for their assistance producing the workbook in PressBooks. Additionally, I would like to sincerely thank Brooke Troutman and Alanis Ramos for their hard work and dedication on this project.

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ABOUT THE COVER

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CHAPTER 1.

INTRODUCTION TO THIS WORKBOOK

Welcome to Introduction to Archaeology! This class will show you what archaeology is, what archaeologists' study, and significant archaeological sites all over the world. Archaeology is a fascinating and unique field of study that focuses on recovering and interpreting material remains left behind by past peoples. In order to derive meaning from static artifacts and turn them into dynamic human behavior in the past – archaeologists have developed specific research methods and analyses to help them in their quest to better understand our human story. From 3.3 million years ago when the first stone tools were made – to just a decade ago, or even yesterday – archaeology is an exciting science that explores early human evolution, ancient religions, different cultures, the development of technology, and more!

Anthropology, and archaeology more specifically, is a social scientific discipline rooted in both quantitative and qualitative research methods to understand peoples, cultures, technologies, and societies in the past. Archaeology is the branch of Anthropology which analyzed material remains to understand and champion human culture in the past. While archaeologists are primarily concerned with the past, it is also relevant to the present and future as archaeologists study issues that continue to impact our societies, such as social inequality, environmental change, and political conflict.

Introduction to Archaeology will provide you with an understanding of archaeological methods, theories, and concepts, as well as an overview of how our ideas about early human ancestors and diverse cultures have changed over time. You will learn about artifacts, but also move beyond them to think critically about what the past means to you, to each other, and the importance of our shared global cultural heritage.

This workbook is designed to help you "think like an archaeologist" to get deeper into the science and work with new concepts. Exercises in the workbook will take you through how archaeology is presented in the media, how and when archaeology was invented, different types of archaeological evidence, how archaeologists find and dig sites, and many other topics. When archaeologists are "in the field" and excavating a site, they create very detailed written records in field notebooks. This workbook will act as your field notes throughout the class. This workbook is not a substitute for class lectures; instead lectures and the workbook work together, as each workbook exercise is designed to act as both a review of material from lectures and an engaging activity.

Let's start exploring!

Dr. Lemke

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CHAPTER 2.

INTRODUCTION TO ARCHAEOLOGY

You have likely heard of archaeology before, but do you know what archaeologists study, or what archaeology really is? Think of all the ways archaeology can be presented to the public – what are they?

List pros and cons for each one.

Type Of Media or Location	Pros	Cons

What are the best means of public outreach? How can archaeologists do better in communicating with the public? Or should they bother? Write your answers/thoughts below.

_____

_____

_____

_____

_____

_____

HISTORY OF ARCHAEOLOGY

In lecture you were introduced to different phases in the development of archaeology. Choose one of these phases and describe it in the space below.

_____

_____

_____

_____

Now choose a significant individual from the phase that you just described. Detail the person below and make sure to describe what was important about this person and the phase they are connected with.

_____

_____

_____

_____

ARCHAEOLOGICAL EVIDENCE: BUILD YOUR OWN GLOSSARY

Use this page to help you take notes during the Archaeological Evidence week. While in/or listening to lecture, be sure to write down definitions or other notes for each word or concept below:

Artifact

_____

_____

_____

Ecofact

_____

_____

_____

Feature

_____

_____

_____

Site

_____

_____

_____

Context

_____

_____

_____

Matrix

_____

_____

_____

Provenience

_____

_____

_____

Association

_____

_____

_____

_____

Formation Processes

_____

_____

_____

Taphonomy

_____

_____

_____

Cultural Formation Processes

_____

_____

_____

Natural Formation Processes

_____

_____

_____

Worst Climate for Preservation

_____

_____

_____

Best Climates for Preservation

CHAPTER 5.

ARCHAEOLOGICAL EVIDENCE

What are the three different categories of archaeological evidence? List them below.

_____

_____

_____

_____

_____

What are Formation Processes? Explain the difference between Cultural Formation processes and Natural Formation Processes.

_____

_____

_____

_____

_____

Imagine you are an archaeologist out in the field. Describe what you think would be the most ideal environment to work in for preservation and why you chose that environment. What makes the environment you chose better than other types of environments.

_____

_____

_____

_____

_____

_____

CHAPTER 6.

FIRST SHORT PAPER

Topic: In class we have discussed "Archaeology in the News". For your first short paper you will draw on what you have learned in class and the news stories we have discussed. Be sure to address the following points in your paper:

(1) What **types** of archaeological stories or projects are *most likely* to be reported by the news media? What aspects of archaeological stories do media outlets **emphasize** in order to satisfy and **attract** readers?

(2) Summarize (in your own words) the news stories and video of the **Franklin** shipwreck and **at least one other** story you heard about in class. Be sure to describe the story and include details.

(3) Archaeological discoveries can raise **controversies** – particularly with respect to ownership of objects, territory, or culturally-specific views of the past. **Discuss** this issue with respect to the Franklin shipwreck. Explain why the ownership of this site is controversial. You may also write about a controversial issue raised in another news story but this must be in addition to the Franklin.

(4) Did these stories or stories give you a better understanding of **what archaeology is** and **what archaeologists do**? **How** specifically? Or if it did not give you a better understanding of archaeology/archaeologists, **explain why**.

(5) Do you think it's a **good** thing for archaeology to be in the news? Why or why not? E.g. Does it help inform the public about **"real" archaeology**? Is it portrayed **accurately**? Does it connect archaeology to **real world/relevant issues**?

(6) Finally, think back to the first day of class and what you thought archaeology was or what, if anything, you knew about archaeology. **Have your ideas changed? Stayed the same? How did "Archaeology in the News" influence your ideas?**

GRADING RUBRIC

 Format Guidelines:

- Name
- Paper must be 3-5 pages, double spaced
- Pages must be numbered
- Correct spelling and grammar

Organization ____ / 5

Is there a clear beginning, middle, and end to the paper?

Content ____ / 5

Are there specific examples in the paper? Are they accurate?

Formatting ____ / 5

Are all of the above format guidelines meet?

Mastery of the Course Materials ____ / 5

Does this paper demonstrate a clear understanding of the course materials and major themes?

Total Score ____ / 20

Percentage **Total Score/2 = ____ / 10**

Letter Grade

Points	Percentage (Points/2)	Equivalent Score	Letter Grade
20	10	100%	A+
19	9.5	95%	A
18	9	90%	A-
17	8.5	85%	B+
16	8	80%	B
15	7.5	75%	C+
14	7	70%	C
13	6.5	65%	D+
12	6	60%	D
11 & less	5.5 & less	55% & less	F

CHAPTER 7.

FINDING AND MAPPING ARCHAEOLOGICAL SITES

What is survey? Why do archaeologists conduct survey?

_____

_____

_____

_____

_____

What is GIS? What is it used for?

_____

_____

_____

_____

_____

When speaking in terms of survey, what is a transect?

_____

_____

_____

_____

_____

Are surface survey finds reliable? Why/why not?

_____

_____

_____

_____

_____

CHAPTER 8.

EXCAVATING ARCHAEOLOGICAL SITES

What are the primary excavation methods ?(make a bullet point list)

_____

_____

_____

_____

Why is stratigraphy important?

_____

_____

_____

_____

What is the law of superposition? What is uniformitarianism?

_____

_____

_____

_____

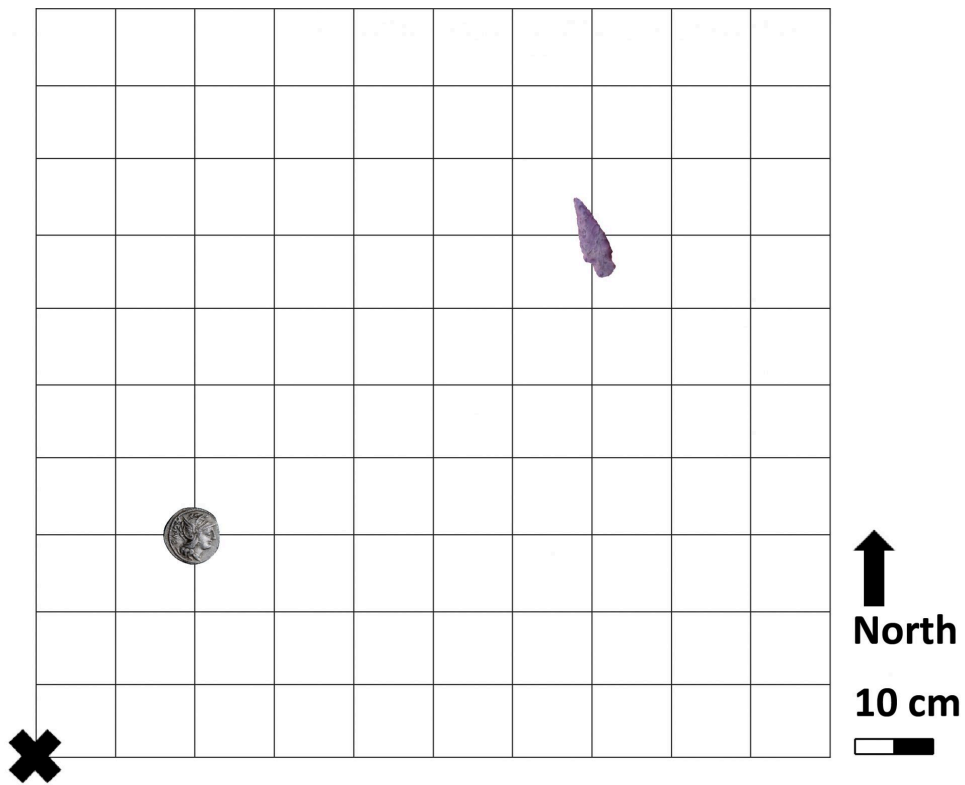_____

_____

PLAN MAPPING

Fig 8.1 Plan Mapping

This large square is 1 meter by 1 meter, each small square is therefore 10 centimetres on each side.

Use grid square to answer the following questions and complete the exercises.

1. What does the "X" indicate? _____

2. This is the standard archaeology unit square, what are its dimensions?

3. Look at the artifacts in the square, list their coordinates in the empty table below:

North (cm)	East (cm)	Description
		Coin
		Stone projectile point

Use grid square above to answer the following questions and complete the exercises.

4. Map the two (2) artifacts on your map from the table below:

North (cm)	East (cm)	Description
80	45	Stone tool
30	90	Ceramic sherd

CHAPTER 9.

UNDERSTANDING CHRONOLOGY AND DATING METHODS

What is relative dating? How does it help archaeologists?

_____

_____

_____

_____

_____

What is absolute dating? Name and define 3 types of absolute dating.

_____

_____

_____

_____

_____

There are two geological concepts that archaeologists have utilized in the field to approximate the age of artifacts and/or different layers. Name both concepts and explain how they help with relative dating.

_____

_____

_____

_____

_____

_____

CHAPTER 10.

SOCIAL ORGANIZATION

	Band	Segmentary Society	Chiefdom	State
Total Numbers	Less than 100	Up to a few 1000	5000-20,000+	20,000+
Social Organization				Class-based hierarchy under king or emperor; Armies
Economic Organization			Central accumulation & redistribution;Some craft specialization	
Religious Organization		Religious leaders;Calendrical rituals		
Contemporary Examples	Inuit; San; Australian Aborigines	Pueblos; New Guinea Highlanders; Nuer and Dinka	NW Coast Native Americans; 18th century Polynesia	All modern states
Settlement Pattern				Urban: cities, towns; frontier defenses; roads
Architecture	See Figure 10.1 below: Mezhirich mammoth hut	See Figure 10:2 below: Çatalhöyük Permanent huts; Burial Mounds; Shrines	See Figure 10.3 below: Stonehenge	See Figure 10.4 below: Chichén Itzá
Archaeological Examples			Early metal working and Formative societies	

Table 10.1: Social Organization Chart

Figure 10.1: Mezhirich mammoth hut

Figure 10.2: Çatalhöyük

Figure 10.3: Stonehenge

Figure 10.4: Chichén Itzá

What is the four-fold classification systems of societies, and who was the anthropologist that developed it?

_____

_____

_____

_____

_____

_____

Describe each one of the classification systems in detail.

1)

2)

3)

4)

Define social inequality. How can mortuary analysis (the study of human burials and cemeteries) be used to investigate social inequality in the past?

_____

_____

_____

_____

_____

_____

Settlement pattern analysis is the most common way to investigate social organization of the past. However, depending on the type of society, the survey and excavation methods can vary. Describe the data collection methods of a mobile hunter-gatherer society below, e.g. most hunter-gatherers live in band societies, what type of architecture do band societies have? What else?

_____

_____

_____

_____

_____

In archaeology the terms "gender" and "sex" are very different from each other. Describe why below.

_____

_____

_____

_____

_____

CHAPTER 11.

ENVIRONMENT AND SUBSISTENCE

When archaeologists are looking for clues about past environments what are their two primary sources of evidence? Describe why these two sources are so important.

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_____

_____

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_____

What are isotopes and how/why do archaeologists use them to study past environments?

_____

_____

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How far back in years can tree-rings show us? Why is this type of environmental record so important and how is it different or similar to examining ice cores?

_____

_____

_____

_____

_____

_____

Plant foods can tell us a lot about diets so reconstructing plant environments is essential. There are two types of botanical remains, microbotnatical and macrobotanical. Within these two broader categories, list three main types of plant evidence in the table below.

Microbotanical	Macrobotanical
1.	
2.	
3.	

Animal remains are often preserved in archaeological sites. What question must an archaeologist ask first when encountering animal remains?

_____

_____

_____

_____

_____

Explain the basic methods used to discovering sex, age, and season of death in animal remains.

_____

_____

_____

_____

_____

CHAPTER 12.

ZOOARCHAEOLOGY AND BIOARCHAEOLOGY LAB

STATION 1: MODIFIED BONES

A: Look at the cutmarks identified on bones. Now look at the bones. Do you see any cutmarks? How many? If so, describe their shape and size. What do cutmarks tell archaeologists?

B: These bones are burned. What is that evidence of? Why might these types of bone fragments be important?

STATION 2: BEYOND FOOD

Animal bones are very common in archaeological sites but they aren't always the remains of a meal. Look at these objects (all made of bone or horn) – what are they?

_____

_____

_____

_____

_____

What are other ways animal bones wind up in archaeological sites?

_____

_____

_____

_____

STATION 3: BISON: ARCHAEOLOGICAL SPECIMENS AND COMPARATIVE COLLECTION

What parts of a bison do you have in your archaeological collection?

What are some differences you see in the same bones between the comparative collection and archaeological specimens?

_____

_____

_____

_____

_____

STATION 4: BIOARCHAEOLOGY & DIET

Look at the mandible from a Neanderthal child (Teshik-Tash, Uzbekistan). Could archaeologists use this specimen to investigate Neanderthal diets? How?

_____

_____

_____

_____

_____

What other methods do archaeologists use to study ancient diet?

CHAPTER 13.

SECOND SHORT PAPER

Topic: In class we have discussed bio-archaeology, the study of human bones found in archaeological sites, and mortuary analysis, the study of ancient burials and cemeteries. You are an archaeologist and you have excavated four burials from the same cemetery. You have radiocarbon dated these burials and they are all date to the same time (3000 years ago). **All four burials are from the same cemetery and these people are from the same society.** What can you say about these four people? What can you infer from these material remains? Be sure to answer (1) **What is the difference between status and rank?** Were these **high status** or **low status** individuals? Did they live in a **ranked** society? **How can you tell?** (2) **What type of social organization did these people likely have?** i.e. band, segmentary society, chiefdom, or state? **Why do you think that?** What other archaeological **evidence** from **outside the cemetery** would you need to **support** this claim? (3) What can you tell about their **health**? (4) How would you study their **diets**? (5) What **else** can you say about these people? Finally, (6) how is the analysis of skeletons and burials **different** from **most** archaeological research?

Be creative but also scientific! Make sure to discuss **all four burials**.

BURIAL 1

Biological Sex: Male. Age 50-60. Head facing North. Turtle shells placed behind head and pelvis. Marine shell (from 200 miles away) near skull. Deer antlers on neck and under arms. Clusters of beads found near neck, left arm, and pelvis. Falcon talon and three badger claws found inside mouth. Burial lies on top of a bird shaped out of thousands of small marine shells.

Figure 13.1: Burial 1

BURIAL 2

Biological Sex: Unknown. Age 4-5. Heading facing North. Eight carved antler statues placed on chest. Helmet made of copper plates, decorated with exotic stones and bronze. Rare stones and bronze also placed on waist. Large, very finely made pot and bronze sword next to child. The child's bones are very porous and x-rays showed Harris lines.
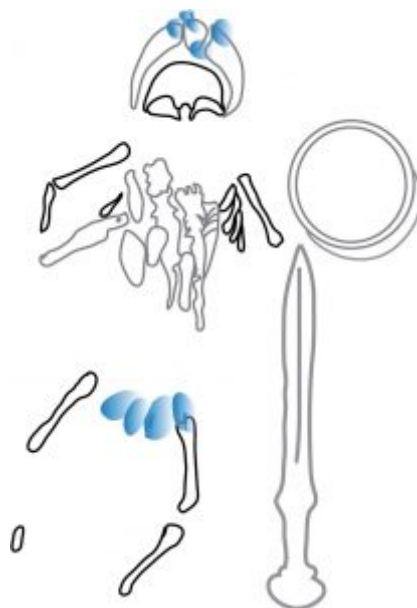

Figure 13.2: Burial 2

BURIAL 3

Biological Sex: Female. Age 30-40. Head facing South. Bronze plate placed on chest. Wooden comb placed near hand. Very crude, simple drinking vessel next to skull. Wrists and knees show signs of severe arthritis.

Figure 13.3: Burial 3

BURIAL 4

Biological Sex: Male. Age 30-40. Head facing South. Bronze plate placed on chest. Wooden comb placed near hand. Very crude, simple drinking vessel next to skull.

Figure 13.4: Burial 4

CHAPTER 14.

PAST TECHNOLOGIES

What is the difference between organic and inorganic materials? Which type of materials preserve better under any condition?

_____

_____

_____

_____

Thoroughly explain the importance of stone technology in the archaeological record. What are its' benefits? What are its' downfalls?

_____

_____

_____

_____

Define refitting. Why do archaeologists refit materials?

_____

_____

_____

_____

_____

CHAPTER 15.

WHO OWNS THE PAST?

SHORT ESSAY

Who owns the past? What are the main issues involved in this question. Use specific examples discussed in class (e.g. specific countries/artifacts) to discuss.

CHAPTER 16.

CAREERS IN ARCHAEOLOGY

What are the three main sectors for careers in archaeology?

What types of archaeological careers can you obtain with a bachelor's degree in anthropology?

_____

_____

_____

_____

_____

What types of archaeological careers can you obtain with a master's degree in anthropology?

_____

_____

_____

_____

_____

Finally, what type of archaeological careers can you obtain with a Ph.D. in anthropology?

_____

_____

_____

_____

_____

Are you thinking about pursuing archaeology or anthropology as a career? If so, in which sector would you like to work? Will you need a graduate degree to obtain your desired career?

_____

_____

_____

_____

_____

_____

Conduct an online search for archaeology jobs. Name 5 jobs that are currently listed for archaeologists with their respective hourly pay rates. If the job description does not include a pay rate, research the average pay rate for this career.

Job Title/ Description	Pay Rate (hourly)

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CHAPTER 7

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CHAPTER 12

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CHAPTER 13

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CHAPTER 14

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CHAPTER 15

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CHAPTER 16

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