Discover the past through real evidence from ancient archaeological sites in Mesopotamia! Trace the shift from hunting and gathering to the development of agriculture in the ancient world.

Students will think like archaeologists as they use the tools of scientific inquiry to study what people ate and how they obtained food. In this unit, students analyze modern trash to better understand what happened in the past, as Franz Boas said, “...man never lies to his garbage heap.” Students will examine three archaeological assemblages from two real sites on the upper Euphrates River. They will discover the changes in diet that occurred during the shift from foraging to farming and the consequences of decreased food diversity for human health even today.

Project Archaeology; Investigating Nutrition applies the basic concepts of archaeological inquiry (observation, inference, evidence, context, stratigraphy, and chronology) to the investigation of nutrition. Students construct meaningful questions and rely on archaeological evidence to interpret the past. Students end their investigation by comparing archaeological data on diet diversity to their own diets. In a final performance of understanding students design a healthy eating plan for their school based on information drawn from their study of the past!
Abu Hureyra and Tell al-Raqa’i

Abu Hureyra

Abu Hureyra (Aa’boo Hu rey’ ra), an important archaeological site on the upper Euphrates River in what is now the nation of Syria, was excavated in the early 1970s and is currently under a reservoir of water. The data that came from these excavations was analyzed for decades before the final report was published at the beginning of the new millennium. “Abu Hureyra is one of the few archaeological sites in the world to have revealed the remains of settlement of hunters and gatherers (foragers) that developed into a village of early farmers. That, together with the great size and excellent preservation of the site, and its location in a region where agriculture began earlier than anywhere else, gives it extraordinary significance” (Moore et al. 2000, iii).

The transition from foraging to agriculture is visible in the stratigraphy (layers) of the site. Foragers occupied the lowest levels of the site approximately 12,000 years ago (Abu Hureyra 1) and village farmers occupied the upper levels dating approximately 8,000 years ago (Abu Hureyra 2). In lesson six of Investigating Nutrition, students will examine site maps, artifacts, structures, plant remains, and animal bones from each of the levels to identify changes in diet and cultural practices.

Tell al-Raqa’i

Tell al-Raqa’i (Tell all Rack’i), was a small village occupied approximately 5,000 years ago. Most studies of archaeological sites from this time period have concentrated on large urban areas. Recent excavations at Tell al-Raqa’i show that this site may have been a place where grain was grown and stored. The grain was probably transported to larger cities farther down the Euphrates River. It may have been similar to small agricultural towns in the United States today, which supply food to large cities. In both cases, the rural villages are part of a much larger urbanized society.

Students examine site maps, artifacts, structures, plant remains, and animal bones to determine how human diets in the ancient Near East changed to what they were in rural villages 5,000 years ago. They will compare the Tell al-Raqa’i data to data from Abu Hureyra and identify the similarities and differences of foraging, early farming, and urban lifeways.
PROJECT ARCHAEOLOGY LEADERSHIP LEGACY INSTITUTE

Take a leading role in archaeology education!

Investigating Nutrition: The Advent of Agriculture in Mesopotamia

Discover the past through evidence from archaeological sites in Mesopotamia.
Trace the shift from hunting and gathering to the development of agriculture in the ancient world.
Engage your students to think like archaeologists as they apply the tools of scientific inquiry to the investigation of nutrition.
Explore how the advent of agriculture decreased food diversity with significant consequences for human health even today.
Learn cross-curricular, inquiry-based methods for teaching social studies, science, and health enhancement.
Bring Project Archaeology back to your community to share what you learned.

PROFESSIONAL DEVELOPMENT WORKSHOP

Project Archaeology Network • Teachers • Archaeologists • Museum Educators

THE ORIENTAL INSTITUTE OF THE UNIVERSITY OF CHICAGO
1155 E. 58th St., Chicago, IL • August 3-7, 2015

Contacts: Courtney Agenten, CourtneyAgenten@montana.edu; Carol Ng-He, cnghe@uchicago.edu

Lunches Provided! Scholarships available!
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Registration:
Chicago-area teachers: Please register through the Oriental Institute at oi.uchicago.edu/register
Early bird rate of $129 members/$139 nonmembers if you register by June 1, 2015
Regular registration $139 members/$149 nonmembers
Out-of-town/Traveling participants: Please register through Project Archaeology at www.projectarchaeology.org
Early bird rate of $405 if you register by May 15, 2015, Regular registration $425

*Legacy participants, upon completion of the program, will be certified to teach all Project Archaeology curricula to teachers through workshops, institutes, and job-embedded mentoring.
*There are 30 Continuing Professional Development Units (CPDUs) for Illinois teachers.
*And 2 graduate credits are available.
Fundraiser! Help Project Archaeology
Publish *Investigating Rock Art*

*Project Archaeology: Investigating Rock Art*, our first unit in a new series of special topics curricula, explores artistic expression in the archaeological record. Investigating Rock Art is an exciting new way to transform students’ perceptions of art and culture. Art has always been an important part of cultures in North America and throughout the world; its expression in the archaeological record broadens our view of the past cultures and their life ways.

These shorter curriculum units can be delivered to teachers through shorter workshops and will not require as much of their time to teach archaeology in their classrooms. The current draft focuses on the amazing rock art panel at the Red Army Rock Shelter in northwestern Colorado. Like Project Archaeology: Investigating Shelter, we will localize the guide by developing investigations on specific archaeological sites or individual rock art panels from throughout North America, Alaska, Nevada, and Wyoming have identified potential rock art investigations. Let us know if you are interested in developing a rock art investigation for your area.

The new guide is now available in draft form and we need your help to review it, finish it, and publish the final guide. By offering the draft copy for sale online, we are hoping to achieve three main goals:

- Generate enough funds to complete the new guide and print it for distribution through the website or through professional development workshops
- Begin production of site-specific rock art investigations to allow archaeology educators to localize the curriculum unit to their area. Several of our coordinators have expressed interest in developing rock art investigations, so now is the time to get going! Please contact Jeanne at jmoe@montana.edu to work out the logistics and funding for your investigation.
- Receive additional peer reviews and classroom assessments. If you would like to provide a peer review of the draft, download the review documents at [http://projectarchaeology.org/teachers](http://projectarchaeology.org/teachers). Return them to Jeanne by November 1, 2015.

Here’s how you can help!

Special Pre-Release: Pay for download on [https://projectarchaeology.org/shop/pre-release-investigating-rock-art](https://projectarchaeology.org/shop/pre-release-investigating-rock-art)

Thanks for your help in bringing this exciting new curriculum guide to educators across the nation!
Dear Project Archaeology Network,

Happy 25th Anniversary! We can all celebrate a job well done. Everyone’s help, experience, and new ideas are greatly appreciated and you have all stepped up to help over the last 25 years. We are planning several anniversary events for the entire year.

The 25th Anniversary giveaway is underway. The grand prize was won by Utah Project Archaeology. Winners will be announced on our Facebook page. Check our calendar to see all the workshops already registered for this year. We really appreciate your dedication and hard work in reaching teachers throughout the nation.

The Society for American Archaeology conference is coming up very soon and we are busy getting ready. We have lots of events planned and we hope you will attend, if you are in San Francisco. Just a quick run down of events:

April 15, Wednesday – Annual Project Archaeology Meeting, 8:30 am to 5:00 pm
April 16, Thursday – Project Archaeology State Program Highlights: Celebrating 25 Years (posters)
April 17, Friday – Project Archaeology Makes a Difference: The Next 25 Years (symposium featuring local classrooms and students)

Thanks to our stellar staff here at National Project Archaeology and many of our coordinators, master teachers, and friends we are bringing some projects to completion. With the help of the Oriental Institute (OI) of the University of Chicago, we will soon publish Project Archaeology: Investigating Nutrition (see pages 1-2). We are also planning a Leadership Legacy Institute at OI in August and are developing an online course to be hosted by OI and plan to offer our first course in October. Project Archaeology: Investigating Rock Art is currently being launched as a draft and we hope to bring this new guide to completion next year (see page 4). Several new projects are in the planning stages and we will keep you posted when we have more information.

Can’t wait to see you in San Francisco!

Jeanne Moe
Jeanne M Moe
BLM Project Archaeology Lead

Special Projects Coordinator Courtney Agenten represents Project Archaeology at the Montana Indian Education for All conference in March.
Finding Agriculture in Turkey by Rebekah Schields

While our new curriculum focuses on the excavations of sites in Syria, there is also exciting new research on the origins of agriculture, in Turkey, just slightly to the North. Research on the Neolithic in Turkey is especially exciting, because until the 1960s Turkey was thought of peripheral to the Levant in relation to domestication of animals and plants. The excavation of Catalhoyuk by James Mellaart in the 1960s, and continued by Ian Hodder, had brought many exciting discoveries to light and has changed the way archaeologists fit Turkey into the Neolithic revolution. Recently, there has been a move away from trying to find the first true agriculturalists, and a focus on determining the amount the prehistoric people of Turkey relied on domesticated plants and animals. Most sites on the Anatolian Plateau in central Turkey during the Neolithic were not located in prime farming areas and many early Neolithic sites subsisted mainly on gathered resources with domesticates serving as a supplement to this main portion of their diet. During this time period, people began living in single houses, revealing what some archaeologists believe to be a different social organization in which there is more emphasis on the individual family. Also in Turkey, the discoveries of both Göbekli Tepe and Nevalı Çori, some of the world's earliest temples and monumental sculpture, have changed our understandings of the meanings of ritual space and art.

Interested? Check out these great books about the Neolithic in Turkey:

- The Leopards Tale by Ian Hodder, Thames and Hudson, 2011


Subsistence in Prehistoric Patagonia by Scott Dersam

Throughout the world’s more remote areas, the need for reliable sources of nutrition and subsistence were among the most critical of challenges for the first inhabitants to overcome. The first inhabitants of Tierra del Fuego and Fuegian Patagonia were hunter-gathers who migrated into an unoccupied area of plenty. The inhabitants reached the Patagonian area by maritime travel through the Beagle Channel. These early archaeological sites are located on the eastern side of the Andes and in caves along the Beagle Channel and they hold the first evidence of subsistence practices of the Patagonal area.

Within the Cave sites of the Beagle Channel—between the Horn of Patagonia and Tierra del Fuego—evidence of a marine diet is found dating back to approximately 6,500 years ago. Bones of small marine mammals and fish are found along with the evidence of fishing. Marine carbon isotope tests were done to determine what amount of these peoples diets consisted of a marine base. Finds were similar to that of modern day marine mammals at the cave sites, suggesting an almost complete reliance upon it. Within the interior, the east Andean archaeological sites show a subsistence pattern consisting more of land mammals, birds, and the occasional marine evidence. Land mammals consisting of the ground sloth, horses, guanacos—a South American lama—and a variety of birds. The breadth of land and marine faunal remains between the coastal and interior sites is staggering, considering the short distance between the sites. The differing subsistence patterns and adaptations formed by these populations were remarkably equally effective. Both sites had access to and relied on a wide variety of resources. In either environment basic adaptation provided these populations with a nutritious form of sustenance in an extreme corner of the world.

A population’s ability to adapt to a sustainable, reliable food source often served as the most difficult challenge for people in a new environment. However, the evidence within the isolated and dynamic environment of Patagonia proved an anomaly. Supporting abundant and diverse prehistoric subsistence evidence, Patagonia stands as the contrary example to the known prehistoric subsistence struggles in the remote areas of the globe. In the continued research of early subsistence patterns and processes Patagonia will continue to expand upon that which is known about the processes and adaptations made by first populations. Further research will create a better understanding of the formation of these adaptations to subsistence challenges as well as how they can be recognized in the archaeological record, adding to what is known of prehistoric subsistence possibly internationally. Alberto Borrero, L., & Viviana Franco, N. (1997). Early Patagonian Hunter-Gatherers: Subsistence and Technology. Journal of Anthropological Research, 53(2), 219-239.
Interested in connecting kids to the past?

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Montana State University
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June 22 - 26, 2015
Project Archaeology is an educational program dedicated to teaching scientific and historical inquiry, cultural understanding, and the importance of protecting our nation’s rich cultural resources. We are a national network of archaeologists, educators, and concerned citizens working to make archaeology education accessible to students and teachers nationwide through high-quality educational materials and professional development. Project Archaeology is a joint program of Montana State University and the Bureau of Land Management.
START HERE

WARM-UP
Thinking like an Archaeologist

LESSON 1
You Are What You Eat

LESSON 2
The Culture of Food

LESSON 3
Observation, Inference and Evidence

LESSON 4
Context

LESSON 5
Stratigraphy & Crossdating

LESSON 6
Investigating the Archaeology of Nutrition

LESSON 7
Taking Care of Our Heritage

ASSESSMENT
3-4-5
The Archaeology of Food

Enduring Understandings
• Nutritional food is a basic human need.
• Cultures change when there is a shift in food production or consumption.
• Using the tools of scientific inquiry, archaeologists study what people ate and how they get their food.
• Subsistence practices and human nutrition have changed over time.
• The loss of archaeological sites reduces our ability to learn about the past and plan for the future.
• Understanding consequences of subsistence practices helps us understand the present and plan for our future.

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Stratigraphy and Cross-Dating

(Adapted from Intrigue of the Past, Smith et al. 1996)

Enduring Understanding
Using the tools of scientific inquiry, archaeologists study what people ate and how they got their food.

Essential Question
How do archaeologists study the past?

What Students Will Learn
• Students will learn how archaeologists determine how old things are through the use of stratigraphy and chronology.

What Students Will Do
• Students will demonstrate the importance of stratigraphy and chronology in dating sites and artifacts.

Assessment
Students conduct an archaeological investigation of modern food remains to determine changes in diet.

Materials
For Each Group
• “Site in Syria” data analysis sheet (page 63)
• “Cross-Dating” data analysis sheet (page 64)

For the Class
• Butcher paper and markers

For the Teacher
• Five books of different thicknesses and colors

Background Information
When trying to understand the past the proper sequence of events must be known. When events are arranged in order of occurrence, it means that you have established a chronology. One way to display events visually in chronological order is with a timeline.

Chronology is something we all use every day. When somebody tells us a story or when we watch a news report, it only makes sense if we can understand the story as it happened. Archaeologists always try to establish the age of the sites, artifacts, and events that they are studying so that they can place them in chronological order. Each piece of information contributes some understanding to the overall story of the past, but only if the information can be placed in chronological order.

Natural materials such as rocks, soil, and plant and animal remains occur on the earth’s surface and can accumulate in layers. Each layer or stratum may be distinguished by its physical characteristics: color, texture, and structure. Similarly, materials of human origin are also deposited onto the earth’s surface. In archaeological sites, natural and human-generated materials occur together in layers. These layers, called strata, form a record of past events that archaeologists analyze and interpret. The study of strata is called stratigraphy.

The materials deposited first are the oldest and are always found at the bottom of a given stratigraphic section if that section not disturbed. The most recently deposited materials are the youngest and are always at the top. Strata
in archaeological sites provide archaeologists with temporal and spatial information. All of the artifacts in a given stratum will be of approximately the same age, while those in strata above or below will be younger or older respectively.

Cross-dating can indirectly establish a date for artifacts and sites. Artifacts such as stone points and pottery were made in distinctive styles through time. A modern analogy is automobiles: one would not mistake the style of a car made in the 1920s with one made in 1990. If an arrow point was found in association with a hearth that was radiocarbon dated to be 500 years old, it is assumed that the arrow point is the same age. When that style of arrow point is found at another site, the archaeologist would assign the site and the arrow point an age of approximately 500 years. Often cross-dating is the only method archaeologists have to determine the age of sites.

Most sites represent a single occupation. It is rarer for a site to contain evidence of repeated occupations. Stratified sites can show culture change over time and have the potential to give clues about the relationship one group of people had to those who came before or after them. Because of their great information potential, and their rarity, archaeologists regard stratified sites as particularly important.

When an archaeological site is vandalized or artifacts are removed, knowledge about past cultures is lost forever. Damage to stratigraphy by unauthorized digging destroys the information that could be obtained under controlled scientific excavation. The removal of diagnostic artifacts from a site often removes all possibility of determining the site’s age. If you see anyone digging in an archaeological site or taking artifacts from public lands, report them to law enforcement authorities.

Preparing to Teach

1. Gather five books of different thicknesses and colors.
2. Make a copy of “Site in Syria” data analysis sheet for each group.
3. Gather butcher paper and markers to make a timeline.
4. Post the essential question: “How do archaeologists study the past?”
5. Post the Word Bank words.

Word Bank

chronology: an arrangement of events in the order in which they occurred
cross-dating: the principle that a diagnostic artifact dated at one archaeological site will be of the same approximate age when found elsewhere
data: information, especially information organized for analysis
stratigraphy: the layering of deposits in archaeological sites. Cultural remains and natural sediments become buried over time; the layer on the bottom is the oldest, the layer on top is the youngest
stratum: one layer of natural and/or human-generated materials (strata, pl.)
timeline: a visual representation of events in chronological order

Uncover Prior Knowledge

1. Stack five books, preferably of different thicknesses and colors, on a table.
2. Tell students that the books were placed one at a time. Ask students: Which book was placed first? Which was placed last?
3. Ask students: Have you been to a place where you can see layers of soil or rocks? Examples might include road cuts or stream banks. Have students describe what these places look like to the rest of the class. Explain to students that each book represents a layer (stratum), of sediment or soil that is deposited over time. Stratigraphy is the study of strata and archaeologists use stratigraphy to determine the relative age of buried artifacts.

Discover New Knowledge

1. Using the “Site in Syria” data analysis sheet as a guide, draw a line to represent a layer of earth near the bottom of a whiteboard. Show how artifacts are deposited as people live on top of the layer. Then add a new layer of sediment and artifacts on top of the first. Explain that over time natural processes, such
as wind and erosion, deposit new sediment. Over thousands of years, this happens several times until the stratigraphy is built up to present-day levels.

2. Divide students into groups of two. Distribute the “Site in Syria” data analysis sheets to the students. Have students answer the questions using the information on the stratigraphy drawing.

3. The artifacts on the “Site in Syria” data analysis sheet have been dated based on the age of the stratum in which they are found. Ask students: If you found similar artifacts elsewhere, would you know approximately how old they are? This concept is known as cross-dating. An artifact type that has been dated in one place can be dated when found elsewhere.

4. Give the “Cross-Dating” data analysis sheet to the students. Ask the students to imagine that this site is ten miles away from the “Site in Syria.” Have them determine the approximate age of the artifacts based on the information from the “Site in Syria” data analysis sheet.

5. Have students observe the hole dug in the top layer of the “Site in Syria.” Ask students: How do you think that hole got there? Who might have dug this hole? Why do you think it was dug?

6. Ask the students if they would be able to study the stratigraphy of a site if the strata had already been mixed up by illegal digging. If someone took an arrow point, what kind of information would he or she have removed from the site? How would this effect what archaeologists might learn from this site?

7. Assist students with defining stratigraphy and cross-dating and adding them to their Word Banks.

8. The proper sequence of events, or chronology, must be known when trying to understand the past. Use the background information to show students that archaeologists establish chronology by using stratigraphy to determine the age of artifacts and to date similar artifacts at other sites. One way to display events visually in chronological order is with a timeline. A timeline is divided into equal time segments (month, year, or century, for example), with one end representing the oldest events and the other end the most recent events.

9. As a class, construct a timeline for the “Site in Syria.”

10. Assist students with defining timeline and chronology and adding them to their Word Banks.

Assessment

The assessment for Lesson Five is located on pages 65–69. This assessment will assess students’ knowledge of Lesson Three: Observation, Inference, and Evidence; Lesson Four: Context; and Lesson Five: Stratigraphy and Cross-Dating.

Reflect on New Knowledge

1. In groups of four, summarize why cross-dating and stratigraphy are important in the archaeological study of culture.

2. Share summary with the whole class.

3. Give students a few minutes to write what “Stratigraphy and Cross-Dating” means to them. You may want to collect the sheets to check for understanding. Students should keep this document in their folders.

Cultural remains and natural sediments become buried over time; the layer on the bottom (Abu Hureyra 1) is the oldest, the layer on the top (Abu Hureyra 2) is the youngest.
Who left these artifacts?
1. Modern People
2. Urban Dwellers
3. Early Farmers
4. Foragers

Which people came first? Foragers
Which people came last? Modern People

An archaeologist found these artifacts at a site ten miles from the Site in Syria. What is their approximate age?
1. 10,000 – 12,000 years old
2. 5,000 years old
3. 8,000 – 10,000 years old
4. 8,000 – 10,000 years old

Middle School students display how food production changes over time in a museum exhibit of artifacts.
Site in Syria: Analyzing the Data

Who left the artifacts in each level?
1. _______________________________
2. _______________________________
3. _______________________________
4. _______________________________

Which people came first?

Which people came last?
Cross-Dating: Analyzing the Data

An archaeologist found these artifacts at a site ten miles from the Site in Syria. What is their approximate age?

1. ________________________________

2. ________________________________

3. ________________________________

4. ________________________________