

Cynthia Goodman

Digging Through Reading and Writing: Using Archaeology To Teach 6th Grade English

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Maryland State Content Standards& Indicators:

- Students examine, construct, and extend the meaning of a variety of self-selected and assigned text by applying a range of reading strategies and analytic techniques.
 - Understand, acquire, and use new vocabulary
- Students read, comprehend, interpret, analyze, and evaluate informational text.
 - Determine and analyze important ideas and messages in informational texts.
- Students read, comprehend, interpret, analyze, and evaluate literary text.
- Students produce personal, informational, and persuasive writing that demonstrates an awareness of audience, purpose, and form using stages of the writing process as needed (i.e., pre-writing, drafting, revising, editing, and publishing).
 - Use the writing process to compose effective expressive, informational, and persuasive writing.
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Objectives: *Students will be able to*

- Use context to determine the meanings of words.
- Create a story map to summarize the text
- Use the writing process to compare and contrast informational and literary text

Vocabulary

- Archaeology: scientific study of the past
- archaeological site: any concentration of artifacts, ecofacts, features, and structures manufactured or modified by humans.
- artifact: objects made and used by people in a specific place at a certain time
- ecofact: find at an archaeological site which comes from something living, but which has not been modified by human activity. Examples are wheat seeds, sheep bones, or seashells at inland sites. Finds like these tell us something about the diet, way of life, or culture of the people who lived there.
- excavate: to dig out and remove archeological materials from a site.

Materials

“Archaeology: Search for the Past”

Holes by Louis Sachar

Event map graphic organizer

Paper bag w/ artifact

Teacher Background

The detention camp in Holes is located in a barren region of Texas, one hundred miles from the nearest water source. This area could be considered part of the Chihuahuan Desert, which covers parts of Arizona, New Mexico, Texas, and Mexico. The temperature varies from below freezing during winter nights to a high of 122 degrees(F.) during summer. Elevation ranges from 1,000 – 10,000 feet. Unlike other deserts that have a winter and summer rainy season the Chihuahuan Desert only has one rainy season, from July to October. The region receives only 10 inches of rainfall all season. Typical vegetation is desert scrub and there are trees at the higher elevations. Many lizards(whiptails, spinys, horned collared, geckos) and snakes(garter, coachwhips, kingsnakes, ratsnakes, and rattlesnakes) are also found in this desert region.

Lesson Development

Activator – After briefly explaining that the next novel that the class will be reading is about a boy who is unjustly confined to a juvenile detention camp in the desert and is forced to dig holes. Then show the students a bag with

an object in it. (Make sure that the object shows signs of age and is not obviously identifiable at first glance.) Tell the students that this is an object you found while digging in your garden. Pass the object around as the class discusses possible uses of the object.

Developing Understanding – List new vocabulary words on the board. Go over the words with the students, asking students for examples of the words. Read and discuss article, “Archaeology: Search for the Past”. Talk about the difference between digging in your garden and digging during an archaeological excavation. After the discussion, have the students work in pairs or small groups to complete the event map graphic organizer to explain the process that archaeologist complete when trying to gather information about the past.

Reading and Analyzing Literary Text – Have students meet in small groups to read and discuss novel. Ask students to think about the differences in the way that the main character digs and the way that an archaeologist would dig as they read. Suggestions for specific activities can be found in the Montgomery County, Maryland 6th grade English curriculum guide. Attached are general discussion questions students can use to guide their discussions.

Before students begin Chapter 13, ask them to try to think like an archeologist as they read about an object that Stanley, the main character, finds. Remind them to refer to the archaeology article and event map as they discuss the passage in their literature groups.

Assessment

Have students write a paragraph comparing and contrasting the difference between “digging a hole” and completing an archaeological site excavation. Have students use the article and story map to construct a draft, revise and edit their draft, and complete final copy.

Extension

Arrange a field trip to an archeological site where students can participate in a site excavation. Suggestions include contacting the Maryland Parks and Planning Commission’s Office of History and Archeology(310-840-5848) and Historic London Town and Gardens(410-222-1919).

Can You Dig It?

Event Map

Directions: After reading the article, “Archaeology, Search for the Past”, list the steps in chronological order from first to last completing an archeological expedition.

First: Site Location

Next: Site Survey

Next: Removing Surface Debris

Next: Recording uncovered artifacts and ecofacts

Next: Screening loose dirt

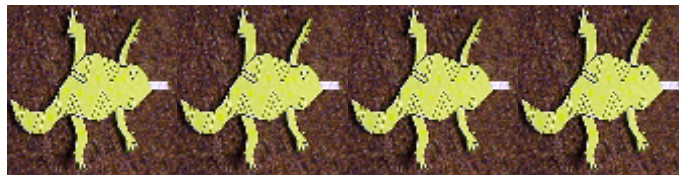
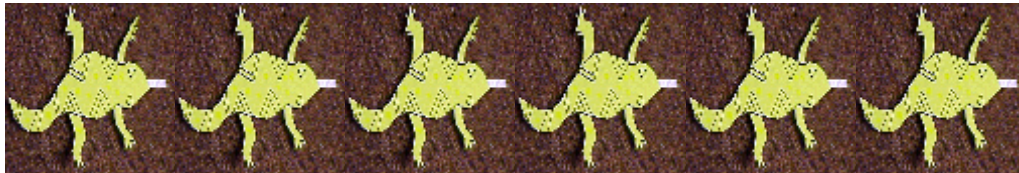
Next: Processing objects in a laboratory

Last: Complete written site report

Questions for Discussion*

Holes

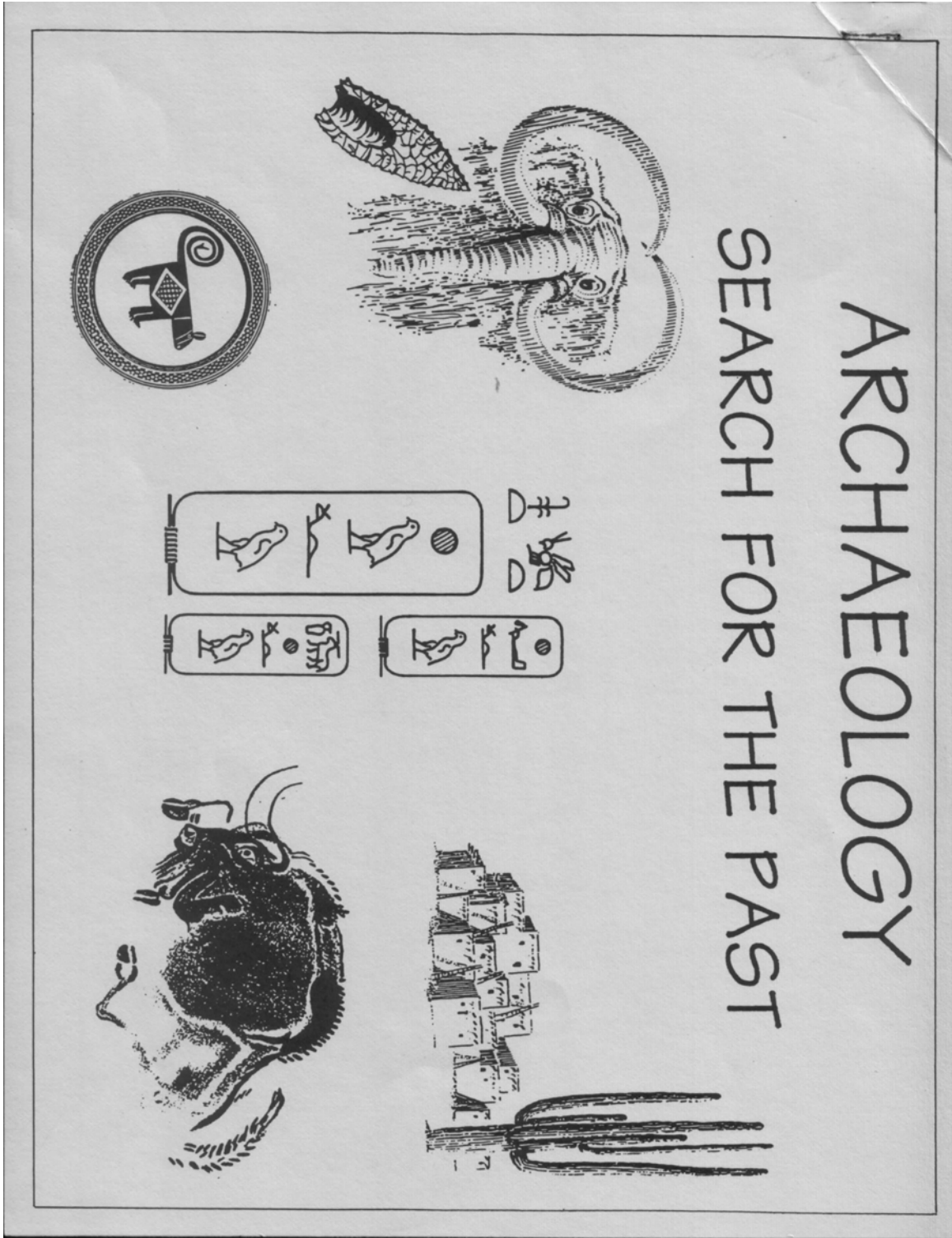
by Louis Sachar



1. How does Stanley's background affect his life?
2. What were your impressions of the Warden early in the book?
3. What is the significance of the boy's nicknames?
4. Why did Stanley feel awkward about Zero digging his hole?
5. Why was Stanley's relationship with Zero so important, how did it grow and why?
6. What gave Stanley the strength to continue to search for Big Thumb? Why was Stanley so happy (page 186)? What worries Stanley most about dying and why does he feel that way?
7. How does Stanley change throughout the story?
8. The New York Times Book Review calls Holes a "smart jigsaw puzzle of a novel." Do you agree with this? Why or why not?
9. What makes Holes such a good (or bad) book?
10. What do you think the boys at Camp Green Lake will (or should) do now that they no longer have to dig holes to search for the treasure?
11. Do you think people in camps, jails, and prisons should be forced to do something productive for society during their sentence? Could this occur without creating more problems?

*<http://voyager.snc.edu/education/s2000middle/holli-michelle/holes-into.htm>

Cover

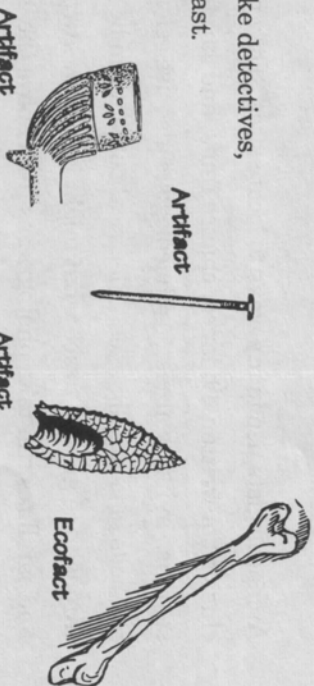


ARCHAEOLOGY

Search for the Past

Archaeology is the scientific study of the past. Like detectives, archaeologists gather evidence to tell about the past.

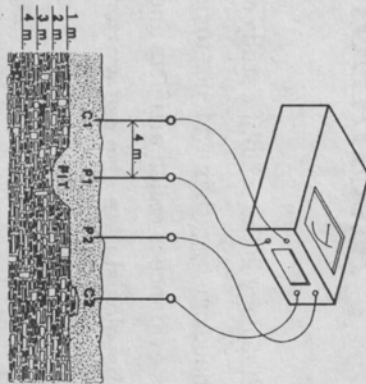
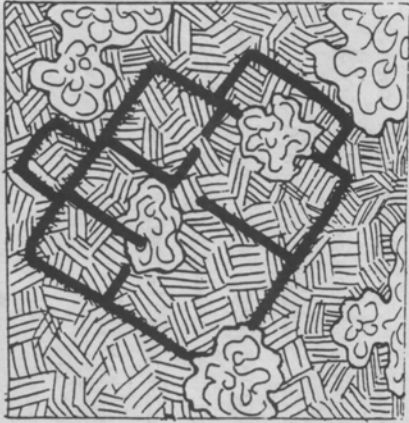
This evidence is called artifacts and ecofacts. Archaeologists can also use written documents such as letters, newspapers, receipts, and diaries to learn more about the past.



Archaeologists excavate for evidence at a dig site. There are many ways evidence can end up beneath the soil. Evidence can be thrown away, lost, or buried on purpose. Methods have been developed so that a site can be excavated accurately. Archaeologists are not the only experts at a dig site. A team of people work together to gather information from the excavated artifacts and ecofacts. While some of these experts work in the field on-site, others work in laboratories and museums.

SITE EXCAVATION

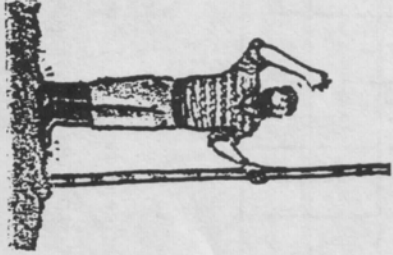
Archaeologists use many ways to locate sites. They piece together clues from written evidence, chance finds, and careful ground searches in likely areas. Archaeologists also use scientific methods to locate dig sites. Electrical current can be passed through the ground to see what might be below. Airplanes and satellites can take photographs from above the earth that show where houses, roads, and walls were once located.



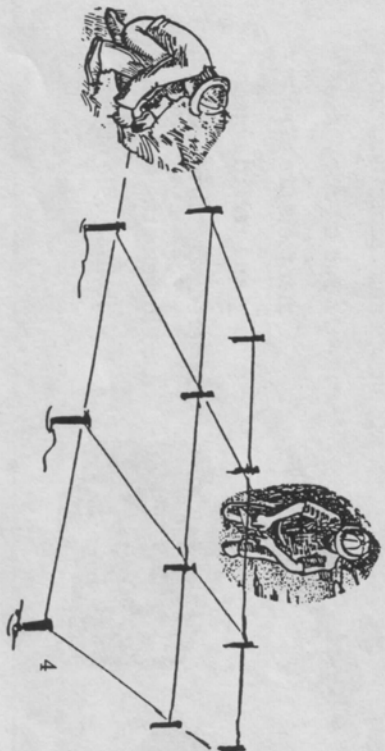
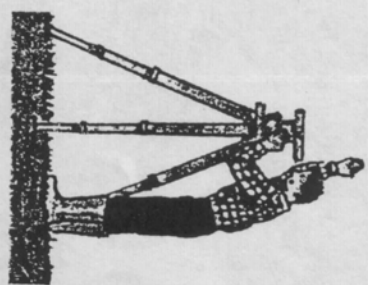
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When a site has been identified, it is given a letter and number designation by the archaeologist. This helps protect the site from being dug by people who are not trained in archaeology. Untrained excavators can destroy important evidence.

A dig is a carefully planned and organized activity. Once the site has been chosen, archaeologists carefully walk over the surface of the site looking for artifacts and ecofacts. Finding evidence might show the best place to start excavation. A map is drawn showing the location of the site and features surrounding the site.

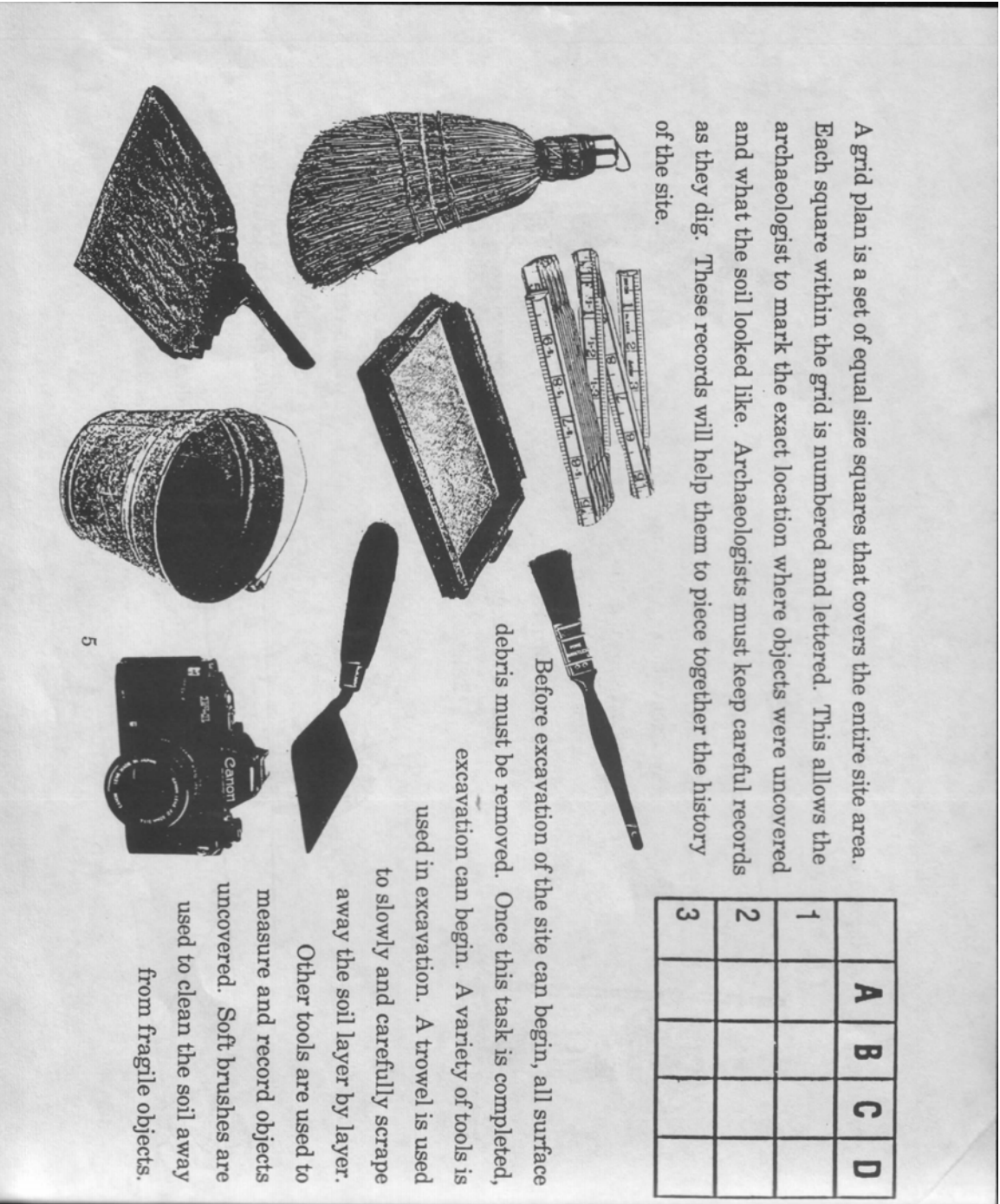


The site is carefully surveyed with a transit to measure distances and directions before excavation can begin. A grid, constructed of nails and string, is then placed over the site.



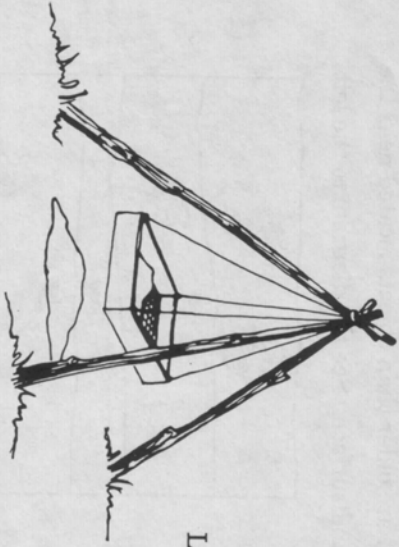
A grid plan is a set of equal size squares that covers the entire site area. Each square within the grid is numbered and lettered. This allows the archaeologist to mark the exact location where objects were uncovered and what the soil looked like. Archaeologists must keep careful records as they dig. These records will help them to piece together the history of the site.

	A	B	C	D
1				
2				
3				



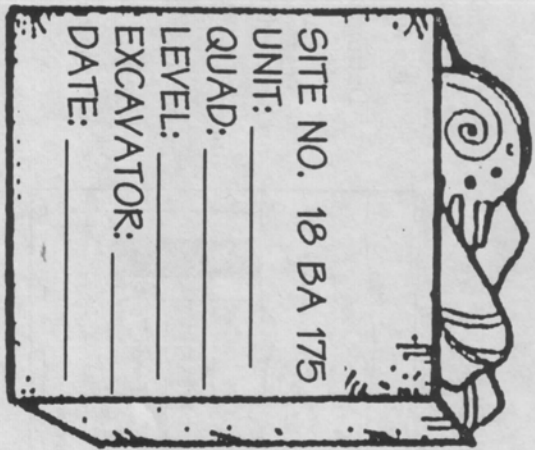
Before excavation of the site can begin, all surface debris must be removed. Once this task is completed, excavation can begin. A variety of tools is used in excavation. A trowel is used to slowly and carefully scrape away the soil layer by layer. Other tools are used to measure and record objects uncovered. Soft brushes are used to clean the soil away from fragile objects.

The artifacts and ecofacts uncovered are recorded on graph paper and placed in an artifact bag for safekeeping.

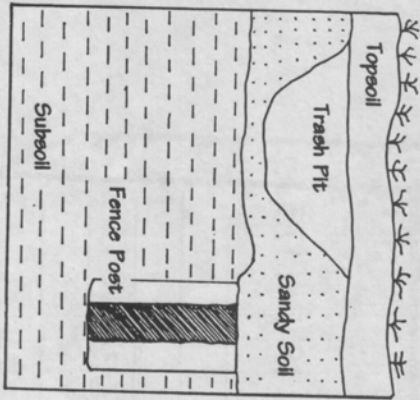


Loose dirt is placed in a dust pan and then placed in a bucket. The bucket and artifact bag are taken to a sifting screen. There the archaeologist carefully screens the dirt looking for fragments of objects not noticed during excavation.

All objects excavated are then taken to a laboratory for processing.



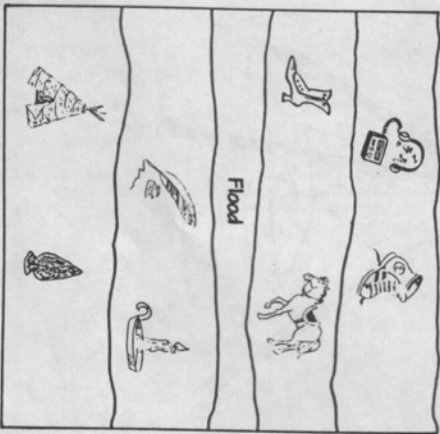
SOIL DIAGRAM



Each site's soil layers mean a different time period or event in the history of that site. Study the diagram to the right. How many different periods are shown in the diagram? Which soil layer is the oldest? How did you determine your selection? Which soil layer is the most recent? What natural disaster took place on the site?

HOW ABOUT A DATE?

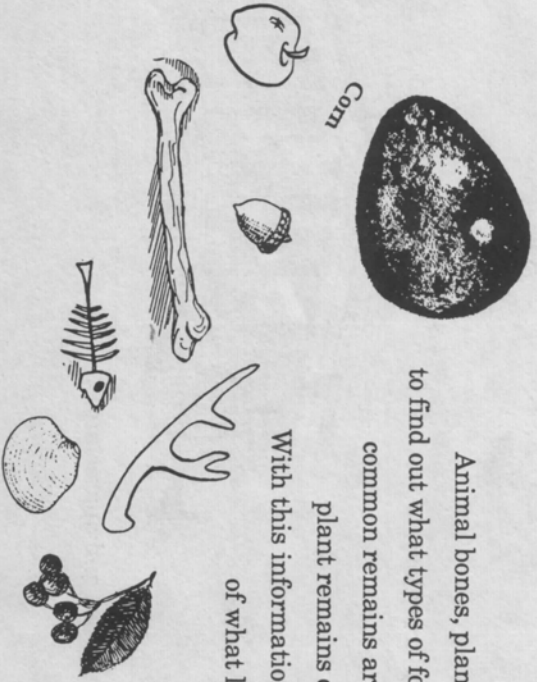
Archaeologists need to know the age of the things they find. This will help them put people and events on the site in order. Dating helps to show how technology, ideas, and beliefs might have developed. Many scientific techniques can help the archaeologist date objects. When digging an archaeology site you need to be able to determine which objects you find are older than others. Archaeologists can do this by studying the different soil layers in which objects are found. Generally, objects uncovered deeper in the ground are older than objects located near the ground surface. See the diagram to the left.



Soil Diagram

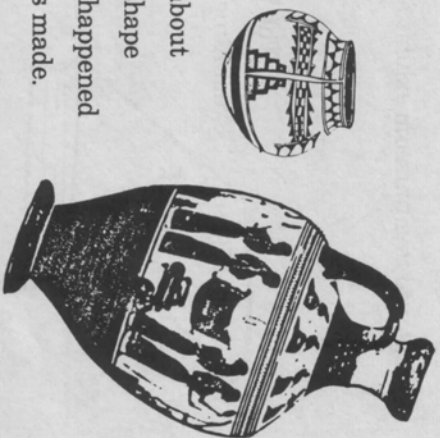
ANIMAL AND PLANT REMAINS

Animal bones, plant seeds, and pollen can help the archaeologist to find out what types of food people who lived on the site ate. The most common remains are bones, teeth, and plant pollen. Animal and plant remains can also help to build a picture of the climate. With this information, the archaeologist can get a clearer picture of what life and the environment was like in the past.



POTTERY AND GLASS

Pottery and glass remains can tell the archaeologist many things about the objects people used on a daily basis. The decoration, color, and shape of objects can help the archaeologist to accurately date events that happened at the site. Pottery and glass marks can show where the object was made.



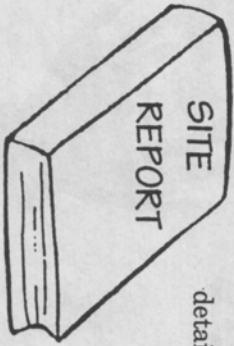
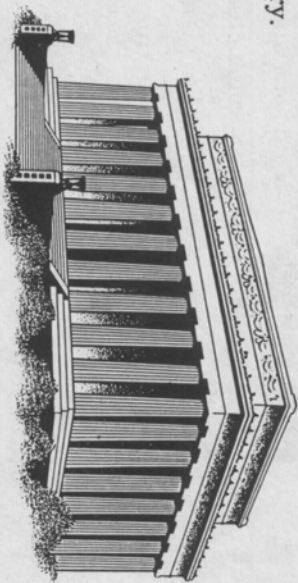
ARCHAEOLOGY IN THE LAB

For every hour spent excavating on a site, archaeologists spend three hours working in a laboratory.

Each artifact or ecofact must be washed, numbered, catalogued, and treated to prevent decay.

This is called conservation. Archaeologists use computers to help store and analyze this information.

Conservators also mend broken objects to see what the whole piece looked like. Restored objects can then be displayed in a museum exhibit for all people to see and appreciate.



The last activity of the archaeologist is to complete a written site report detailing all activities that took place during the excavation and processing of the artifacts and ecofacts. This report is then shared with people interested in learning more about the history of the site. Archaeologists are important people. They work to protect and better understand the human past.

GLOSSARY

Archaeology	Level	Organic	Unit
Archaeology The systematic recovery, analysis, interpretation, and reconstruction of material remains.		Organic Material derived from living organisms.	
Artifact Objects made or modified by humankind. Examples: pottery, jewelry, tools.		Prehistoric Time prior to written records.	
Contour lines Lines of equal elevation showing height above sea level.		Quad A five foot by five foot excavation space; one quarter of a unit.	
Ecofact Objects natural to the physical environment. Examples: bones, teeth, shells, seeds.		Sifting Screens Wire mesh used to screen for material remains.	
Excavation The systematic recovery of material remains.		Site A concentration of material remains.	
Grid A series of lines crossing a site used to keep a record of excavated material remains.		Strata An individual soil level.	
Historic Time when written records were kept.		Survey A walking tour of a potential soil to determine excavation locations.	
Level A layer of soil. 1		Topographic A map that shows the contour of the land.	
		Transit A device used to measure elevation.	
		Unit A ten foot by ten foot excavation space. 2	

Resources:

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