

# Science on the Surface

## AN ARCHAEOLOGICAL SURVEY

### Objectives

Students will simulate an archaeological survey to:

- recognize and use basic archaeological procedures
- determine how sites and artifacts relate information about human behavior
- analyze survey data and make inferences about human behavior
- compare their research to the study of archaeology

### Materials

- copies of the Site Map, Artifact Record, and Final Report activity sheets for each student (pp. 9-10)
- graph and note paper for each group

### Background

An archaeological survey is a systematic examination of the surface of the land for the purpose of locating and interpreting sites (places where people lived). As archaeologists survey the land, they are looking for anything that is not natural to the area: a row of rocks (possibly the remnant of a wall), depressions or mounds (buried structures), chips of stone (debris from stone tool manufacture), dark soil (possible middens, hearths, or burned structures), and pottery sherds.

When a site is found, the boundaries are defined and mapped. All artifacts within the boundaries are mapped and recorded, but they are collected only if the site will be disturbed due to a development project or if permission has been granted by the land owner. Maps, site forms, and any collected

artifacts are returned to the laboratory, where they are analyzed. Archaeologists study sites in relation to each other and make inferences about past lifeways based on these analyses. A report is written and made available to other researchers.

By conducting a survey, archaeologists can learn where people settled and how they used the land. For example, nomadic hunter-gatherers typically move within an area on a seasonal basis and often perform particular tasks such as root gathering or hunting in a specific place each year. Archaeological survey data can be used to reconstruct annual movements of prehistoric groups based on what was left at each locality, such as digging implements or projectile points. In short, archaeologists study the human behavior that created sites.

### Setting the Stage

1. Ask the students: If an archaeologist walked into your bedroom, what would be known about you from the objects there? Would one object taken from the room tell as much about you as all of the objects considered together?

2. Tell the students: Just as your personal possessions show something about you, ancient artifacts provide information about the people who made and used them. An archaeologist learns about people who lived in the past by studying the things they left behind. A wealth of information can be found on the ground surface, and systematic study can reveal much about past lifeways without excavation. This form of archaeological research is known as "survey." Students will simulate an archaeological survey on their campus.



### Procedure

1. Just as archaeological sites and the materials they contain can be studied to learn about ancient human behavior, the campus can be studied to learn about recent human behavior. Within the campus there are numerous areas such as the cafeteria, the principal's office, the science lab, the parking lot, and an outdoor meeting place where specific activities occur on a regular basis. Artifacts that represent an activity, such as fast food wrappers, computer paper, or paths across lawns, remain in that area and may indicate what people did there. These areas can be considered to be "sites" for this project.

2. Using the background information, explain how and why archaeologists conduct surveys and record sites.

3. To model an archaeological survey, have students study the Site Map and the Artifact Record activity sheets, which represent a typical campus "site." Based on the objects present at the site and their relationship to each other (their "context"), what inferences might an archaeologist make about the activities that occurred?

4. Student survey projects. Imagine that the school has been abandoned and will soon be bulldozed to construct a freeway entrance. The class is a team of archaeologists who have been employed to study the

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behavior of students who attended the school. Students work in groups of three or four and choose a site. Each site must be a place where many people congregate; trash and other objects typically are left behind; and that is small enough in size that the project can be completed without difficulty. Examples include an outdoor lunch spot, small parking lot, baseball diamond, or bus stop. Using the Site Map and Artifact Record sheets as guides, each group will:

- make a map of the site using graph paper;
- describe features of the site such as the floor, walls, furniture, sidewalks, or vegetation present;
- assign each observed artifact a unique number and record it; record the artifact location, description, and possible use on note

paper; and

- mark the location of each artifact on the site map using its number designation.

Note: the "artifacts" may not be collected because archaeologists generally cannot collect artifacts from sites until they obtain permission to do so.

5. Have students read the Final Report activity sheet. Each group will then write a final report that includes:

- a description of methods used;
- a summary of the data collected. Bar graphs and tables are useful for summarizing data;
- inferences about how the site was used based on the artifacts present, their relationship to each other, and to the place where they were found; and
- a list of additional sources of evidence, such as direct observation

of trash dumping, that might confirm their inferences.

6. How is the campus similar to an ancient Roman town or an Anasazi pueblo? How is it different? Did survey of one portion of the campus tell the whole story of campus life? Would the same be true of an ancient site? Why or why not?

### Closure

Many prehistoric and historic archaeological sites have been vandalized by people in search of artifacts to sell for personal profit. As a class, discuss how the results of their research would change if the artifacts they studied had been removed.

How would the results of an archaeological survey on a historic or prehistoric site change if numerous artifacts were stolen by collectors?

*The Final Report below is a handout for students. Two copies can be duplicated on the same page, or educators can expand the information into a full page. See additional handouts on page 10.*

## The Final Report

### Introduction

The site is located approximately 100 feet southwest of the school's front entrance. It has been named the "Front Lawn Lunch Site." The area consists of lawn with a few scattered shrubs and trees.

### Methods

An area about 50 feet square was surveyed for artifacts. As each artifact was located, it was mapped, assigned a unique number, and recorded on the artifact record. Because artifacts were not collected, a description of each item was recorded during the survey.

### Results

The site is about 30 feet square in area. A row of shrubs forms the northeast boundary of the site. On the southwest side of the hedge, the grass has been worn away, creating a bare area 10 feet wide by 35 feet long.

A total of six artifacts was found. These included a Hardee's wrapper, a brown paper bag, a smashed Mountain Dew can, a Gatorade cap, and two cigarette butts. It is possible that the lightweight objects, paper, and the aluminum can were blown into the site from another locality. The Gatorade cap probably was left by people because it is too heavy to have been moved by the wind.

### Inferences

Although some of the artifacts possibly were moved by the wind, they appear to have been left by people who used the site. Half of the artifacts found—the Hardee's wrapper and the remains of beverage containers—relate directly to eating. The brown paper bag did not contain any food, but may have been used to bring food from home to the site.

The area without grass may have been caused by people walking and sitting there many times. This could have happened while people were eating the food brought to the site. Two cigarette butts were found a short distance from the food-related items. These may have been left by the people who used the site for lunch (although smoking on campus is against the rules), or they could have been dropped by others walking through the site.

### Conclusions

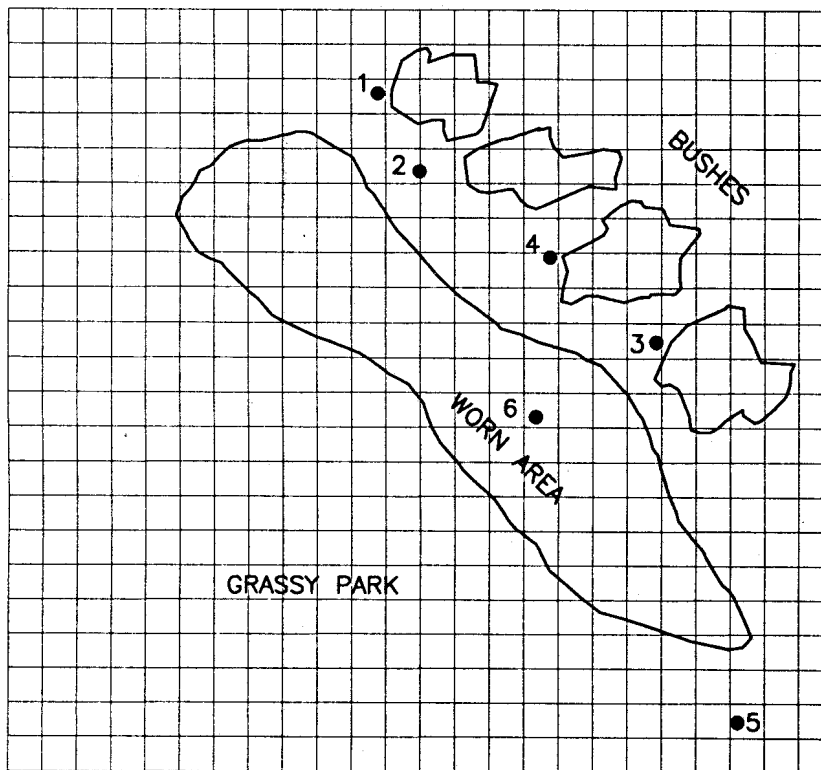
Food containers are the most common artifact type found at the site. This area probably was used by people, possibly students from the nearby school, as a place to eat. The worn areas in the grass indicate repeated use. The cigarette butts indicate that the rule against smoking has been broken.

**Note:** Your report must be expanded as the information requires.

### Artifact Record

Number	Location	Description	Use
1	next to bushes	Hardees sack	carry out
2	next to bushes	Mountain Dew can, smashed.	drink container
3	next to bushes	Gatorade cap	lid to jar
4	next to bushes	brown paper bag	carry lunch from home
5	grassy area	cigarette butt	smoking
6	worn area	cigarette butt	smoking

### Site Map



### Site Description

Most of the artifacts are found underneath the bushes. They may have been blown there by the wind. There is a large worn area without grass; the rest of the area is covered with grass.

### Vocabulary

**artifact:** any object made or used by humans

**behavior:** anything that an organism does

**context:** the relationship that artifacts have to each other and to the situation in which they are found

**data:** factual information

**evidence:** an outward sign; information that confirms or refutes an inference or hypothesis

**inference:** a conclusion derived from observations

**midden:** a garbage dump

**pottery sherd:** a broken piece of pottery

**projectile point:** the stone point attached to the end of darts, spears, and arrows

**site:** a place where people lived and artifacts were left

**survey:** a systematic examination of the surface of the land for the purpose of locating and recording archaeological sites

This lesson plan was adapted from *Intrigue of the Past: Investigating Archaeology, A Teacher's Activity Guide for Seventh through Twelfth Grades*, Jeanne M. Moe and Kelly A. Letts, Bureau of Land Management, Salt Lake City, UT. If you use this lesson in your classroom, please call with comments, (800) 722-3988. Your feedback is invaluable.

*Intrigue of the Past: A Teacher's Guide for Fourth through Seventh Grades*, Shelley J. Smith et al., is available for \$15 through NSTA Publication Sales, 1840 Wilson Blvd., Arlington, VA 22001; or order by phone, (800) 722-NSTA, or fax, (703) 243-7177.