

# An Archeological Learning Adventure



**Introduction:** Most events in the development of human cultures occurred before there was written history. Even after the advent of writing, the record of history and cultural development is incomplete. Archaeology is a branch of science that seeks to understand past human life and culture through recovering and studying material evidence. For example, archaeologists at the Vore Buffalo Jump excavate bones and stone tools to help understand the culture and history of Indian tribes who lived in the Black Hills region in the three centuries before there was much written record. When combined with other types of evidence, archaeology helps develop an accurate understanding of past human activities and culture.

The overall method in all sciences is similar. It starts with a **problem** or question... something that is not completely known. For example: *“How did Indians acquire the food they needed to survive in the northern Great Plains environment?”* *“Which tribes likely used this site, and when did they use it?”*

A scientist may have an idea of what the “answer” to the problem or question is (an **hypothesis**), but she or he cannot be certain if the idea is correct without testing it.

As they begin their investigations, scientists first **gather the information** that is already known about the problem or related problems. Then, they **develop experiments or investigations** to test their ideas. Archaeologists, like other scientists, are very careful in their **procedures** and in how they collect evidence (**data**). Excavation of sites like the Vore Buffalo Jump are slow and systematic. When archaeologists find any artifact of interest, they use high-tech instruments to make precise measurements and records of what the item is, exactly where they found it, etc.

Finally, scientists **analyze the data** and **report the results**. Often the results of a scientific investigation result in new knowledge that can be used by other scientists. Sometimes the new knowledge can be applied to solve current or future problems. Often, the results of one research effort raises new problems or questions that stimulate further research.

**Purpose:** This activity will provide you with an experience that will help you understand how archaeologists excavate a site and learn to observe, measure and record data related to what they find there.

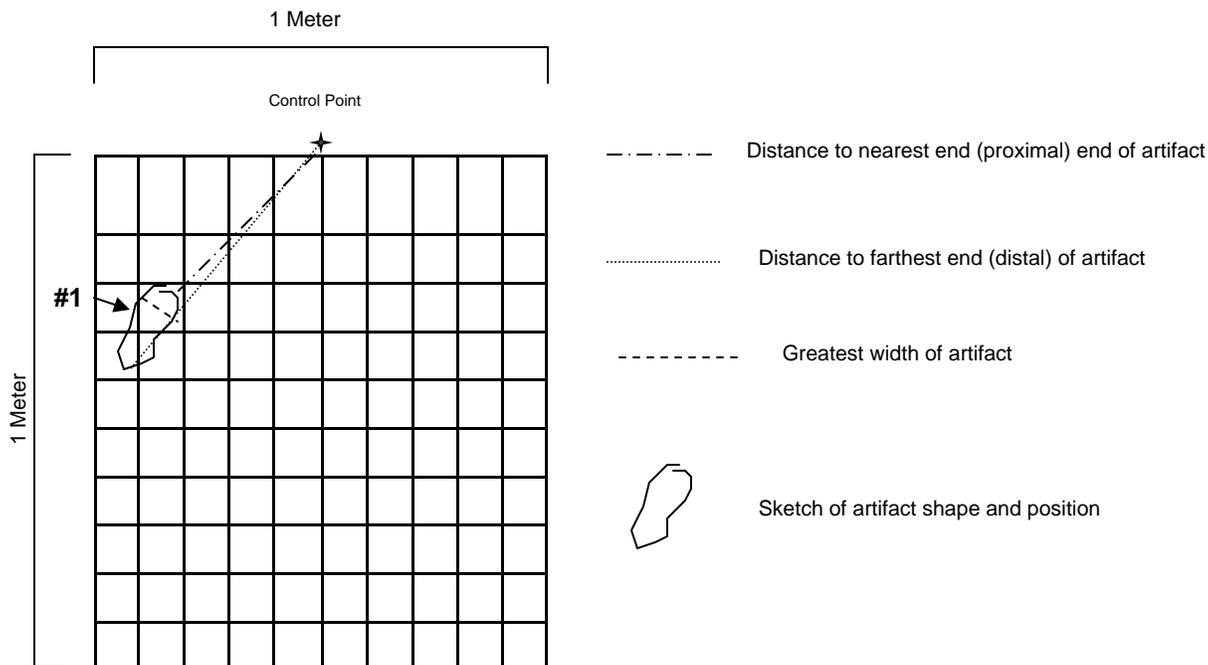
**Materials:** Hand trowel, brush, mesh screen, measuring tape, data collection sheet

## **Procedures:**

- 1) Choose a one-square-meter quadrant to excavate.
- 2) Use the trowel to scrape or scoop thin layers of sand from a portion of the quadrant. Pile the sand that you remove in an area where it can be recovered and sifted. *(Note: At the Vore site archaeologists use bamboo scrapers to loosen dirt. They need to use a scraper that is softer than bone because metal and similarly hard materials can cause cuts and nicks in the artifacts. These cuts can be confused with marks made by the stone tools Indians used during the butchering process.)*
- 3) When a bone or other artifact is encountered, carefully remove the surrounding sand with the trowel or brush.
- 4) Measure the distance from the control point to each end of the bone or artifact and record these measurements on your data sheet.

- 5) Measure and record the length of the bone, its width at the widest point, its width at the narrowest point, and estimate its average width.
- 6) Use the reference sheets to identify which bone of a bison skeleton you have found. (If you discovered a different type of artifact, record that as well.)
- 7) Get the sifting screen, pour the sand and other material you removed during excavation and shake the screen until all of the sand has sifted through. If fragments of bone or stone are left on the screen after this sifting process, try to identify it and record its presence on your data sheet. (*Note: Often, small fragments of chipped stone tools, bones, etc. are accidentally removed during the scaping/digging process. Sifting the excavated dirt will recover most of these chips and fragments.*)
- 8) Using the grid on the graph paper, make a sketch of the artifact (s) you found showing the approximate size and position in the quadrant.

### Example





**Results (DATA):**

Artifact # 1

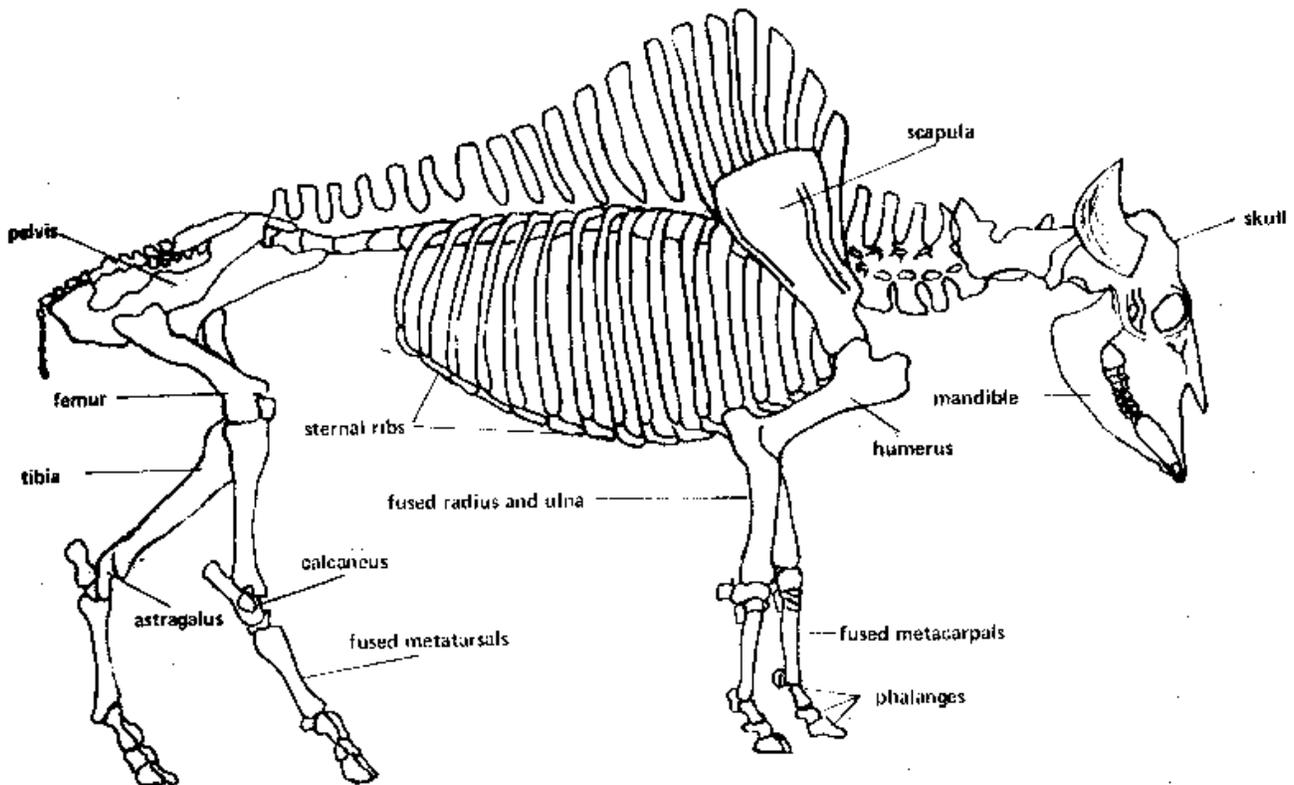
Distance from the Control Point to the nearest end of the bone or artifact \_\_\_\_\_  
Distance from the Control Point to the farthest end of the bone or artifact \_\_\_\_\_  
Length of the bone or artifact \_\_\_\_\_  
Width of the widest part of the bone or artifact \_\_\_\_\_  
Width of the narrowest part of the bone or artifact \_\_\_\_\_  
Estimated average width of the bone or artifact \_\_\_\_\_  
Type of bone or artifact discovered or artifact \_\_\_\_\_

Artifact # 2

Distance from the Control Point to the nearest end of the bone or artifact \_\_\_\_\_  
Distance from the Control Point to the farthest end of the bone or artifact \_\_\_\_\_  
Length of the bone or artifact \_\_\_\_\_  
Width of the widest part of the bone or artifact \_\_\_\_\_  
Width of the narrowest part of the bone or artifact \_\_\_\_\_  
Estimated average width of the bone or artifact \_\_\_\_\_  
Type of bone or artifact discovered \_\_\_\_\_

Artifact # 3

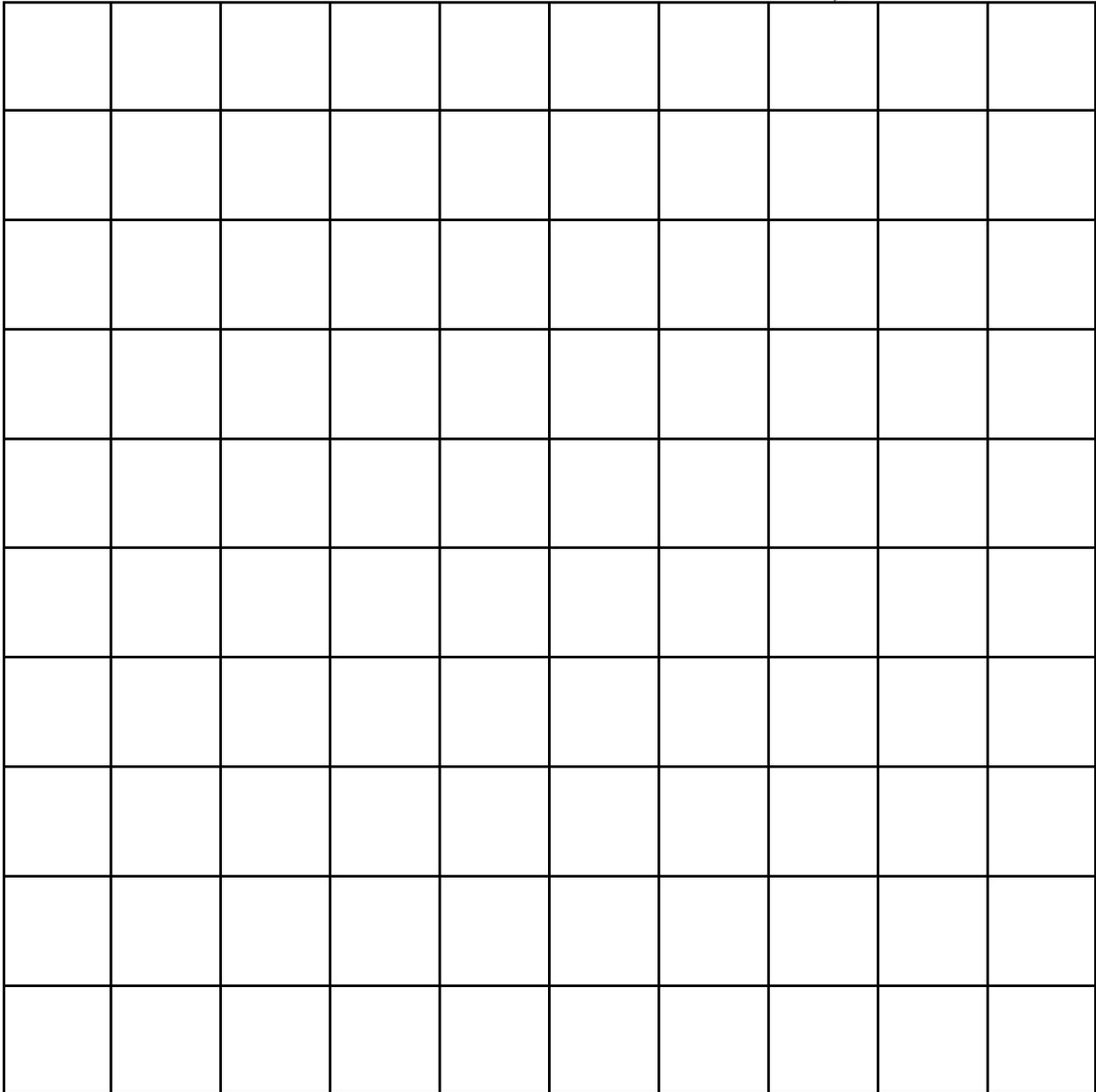
Distance from the Control Point to the nearest end of the bone or artifact \_\_\_\_\_  
Distance from the Control Point to the farthest end of the bone or artifact \_\_\_\_\_  
Length of the bone or artifact \_\_\_\_\_  
Width of the widest part of the bone or artifact \_\_\_\_\_  
Width of the narrowest part of the bone or artifact \_\_\_\_\_  
Estimated average width of the bone or artifact \_\_\_\_\_  
Type of bone or artifact discovered \_\_\_\_\_



Control Point



Use this graph for your sketch



**Other Observations or Conclusions:**

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