

Archaeology



WHO IS IT FOR?

- ◆ Young Scientists . . .
- ◆ Evolving Mathematicians . . .
- ◆ Emerging Linguists . . .
- ◆ Sprouting Historians . . .
- ◆ Budding Artists . . .

TARGETED LEVEL:

(Second Grade)

THE CHALLENGE:

The students will . . .

- ⇒ be introduced to the roles of an archaeologist.
- ⇒ understand how archaeologists “map” their finds.
- ⇒ classify objects based on given information.
- ⇒ interpret and use charts, graphs, and pictographs.
- ⇒ construct reasonable explanations and draw conclusions using given information and prior knowledge.

SAFETY ISSUES & CONCERNS:

- * Students should practice care while moving about the classroom.

WHAT’CHA NEED?

1. Plain white paper.
2. Butcher paper.
3. 24-36 objects to be wrapped. (2-3 for each of the 12 areas of the room)
4. Name tags with, “Excavator”, and “Mapmaker”.
5. Rubber bands, pieces of paper cut for labels, writing utensils.

TIME NEEDED FOR THE ADVENTURE:

Minimum of 45 minutes.

Pre-Visit Activity

Archaeology is the study of old, or ancient, ways of human life and is a discipline which helps us learn about human past. The basic information archaeologists use to learn about the past come from *artifacts* and *archaeological sites*. Artifacts are objects and materials people have made or used whereas archaeological sites are accumulations of artifacts, representing the places where people lived or carried out various activities.

The first step for the archaeologist is the *survey*. Archaeologists use a variety of methods in initiating this survey, they often review ancient texts, modern histories, and/or geological and environmental studies. Although, in the past, archaeologists have relied on accidental discoveries, historical research, and surveys on foot to find good “sites,” they now use more technologically advanced methods such as aerial photography and remote sensing.

Archaeologists look for sites with undisturbed, layered deposits of artifacts that will allow a clear chronology to be established and will give contextual information to reconstruct the cultural system of each layer. Once the site has been determined, the archaeologist goes through the preparation process for excavation. Before a recorded site can be excavated a research design, or plan of study, must be prepared. Data collection is done primarily by *excavation*, which is a systematic digging and recording of the site. Digging in stratified sites is the standard method of establishing a chronology. When an artifact is excavated or uncovered, the archaeologist then makes contextual observations based on the stratified layers, noting the location of each artifact and/or each *ecofact*.

After artifacts are recovered in the field, the analysis of the artifact becomes the primary issue. The chronology established by the order of artifacts is dated by the geological age of the surrounding rocks, or by the artifacts association with fossils or other datable artifacts. Each artifact that is uncovered indicates something about the culture it came from and possibly about some of the activities that humans participated in at that site.

This pre-visit activity will prepare the students for their archaeological expedition at the Elm Fork Education Center. In this particular lesson the students will focus on the importance of establishing a grid system prior to excavating or removing their finds. This concept will be critical for success with the excavation in the archaeological site at the Elm Fork Educational Center.

***Please note: Though we are only simulating an archaeological dig - Conservation ethics are applied to “real” archaeological sites. Conservation in this sense establishes that unless a site is threatened with destruction or will contribute significantly to research, then the site should be left alone*

WORDS TO KNOW?

1. Archaeology
2. Archaeologists
3. Artifacts
4. Mapmaker
5. Excavator
6. Screener
7. Mapping
8. Grids and/or quadrants

DID YOU KNOW . . .

Archaeology is one of four sub-fields of anthropology?

Anthropology is the comparative study of humans and their behavior?

Archaeology is related to history in that both attempt to understand the past?

An *ecofact* is a preserved sample of ancient ecology?

Archaeologists believe that technological advances in the future will enable scientists to learn more from known sites that can be learned today? (One of the reasons to practice conservation)

EXTRA STUFF?

Related books/stories and on-line sources:

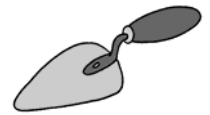
Wheat, Pam and Whorton, Brenda, *Clues From The Past: A Resource Book on Archeology*. Hendrick-Long Publishing, Dallas, Texas.

Smith, Moe, Letts, and Patterson, 1993, *Intrigue of the Past*. U.S. Dept. of the Interior.

Investigating Artifacts, 1996, GEMS, Lawrence Hall of Science, University of California at Berkeley.

Lind, Karen, 1991, *Water, Stones, & Fossil Bones*. National Science Teachers Association.

PROCEDURES:



Ready, Set, Go . . .

1. Use the background information on the first page, the resources to the left on the first page, or your own knowledge and resources to discuss with the students the science of Archaeology and the role of an Archaeologist.
2. Remind the students that they will soon be coming to the Elm Fork Education Center and, once there, they will be participating as archaeologists in an archaeological dig.
3. Discuss the roles that the students will participate in, both in this *pre-visit* activity and at the Elm Fork Education Center:
 - a. **MapMaker:** The MapMaker will first make a map of the "site". Their job will also entail drawing pictures of the objects that their teammate finds. The drawing of the objects do not need to be exact; they may even be symbols, which represent various objects. As the Excavator locates an artifact, the MapMaker will draw the location of the artifact on their map before it is removed from the site.
 - b. **Excavator:** The Excavator carefully searches and/or digs through layers of the site in order to uncover artifacts. This individual wants to go very slow and steady so as not to miss any items and/or to be sure and not damage any possible artifacts contained within the site. When the Excavator has uncovered an artifact, and **before** the Excavator removes the object, the teams MapMaker must determine where the object is to be drawn on the map. Once the item has been appropriately drawn on the map, the excavator will clean each object and then will number and group them (using paper labels and rubber bands).
4. Place the students in groups of two, and assign the roles of MapMaker and Excavator.
5. Pre-select 12 spots in the room - these will represent 12 separate areas or quadrants within the entire site (which is the classroom).
6. Crudely wrap, with butcher paper, 2-3 objects to be placed in each of the 12 areas of the classroom. (Or, have each team wrap 2-3 objects, and then place the objects in the areas around the room.)
7. Give each group a quadrant sheet. (see enclosed example)
8. Draw the rectangular 12-position grid on the chalkboard and label each square as shown in the attached example.
9. Have each team go to one of the "quadrants" within your site. (For larger classes, there may need to be 3 students per group with 2 of the students working as Excavators).

**TEKS
CONNECTIONS:**

Science TEKS – Second Grade:

2.2 (D) – Students will gather information using simple equipment and tools to extend the senses.

2.2 (E) – Students will construct reasonable explanations and draw conclusions using information and prior knowledge.

Denton ISD Science S.P.O – Second Grade:

S1.1 – The student will observe, ask questions, and follow the steps of simple investigations, listen, share ideas, and report on group findings with emphasis on collection of quantitative data.

S3.2 – The student will recognize, analyze, predict, illustrate, and demonstrate patterns and changes in organisms, objects, and events.

psst . . .

This lesson will provide great practice for your students prior to coming to the Elm Fork Education Center!

Procedures continued . . .



10. Have the MapMaker label the top of the team square (piece of paper) with the correct number/name for their quadrant.
11. The Excavator will uncover (unwrap) each of the objects and the MapMaker will record the location of the object on the team grid sheet. The Excavator will then “clean” the object and tag it with the appropriate information. (see example)
12. When the teams have completed excavating, mapping and tagging their artifacts, have the MapMaker bring the finished map to the front of the room.
13. Take all of the maps and place them together to form a *site* grid sheet.
14. Discuss with the students the fact that each individual quadrant, when put together, formed a total picture or finished grid of the site. (Which happened to be the classroom).
15. Ask the students, “Based on the finished grid, what observations can be made? Do any patterns become noticeable? What kinds of information can or does this grid provide?”
16. Ask the students, “why was it important to map our finds? What would happen if we didn’t map our finds? Could you return the objects to their proper place using the map? Would you be able to use some one else’s map to understand what that team found?”
17. Take the students to the library and have them check out books about archaeology and/or archaeologists.

And/Or

18. Take the students to the computer lab and allow them to search the Internet for information about archaeology and/or archaeologists.

Assessment:
Teacher observation
Grid maps

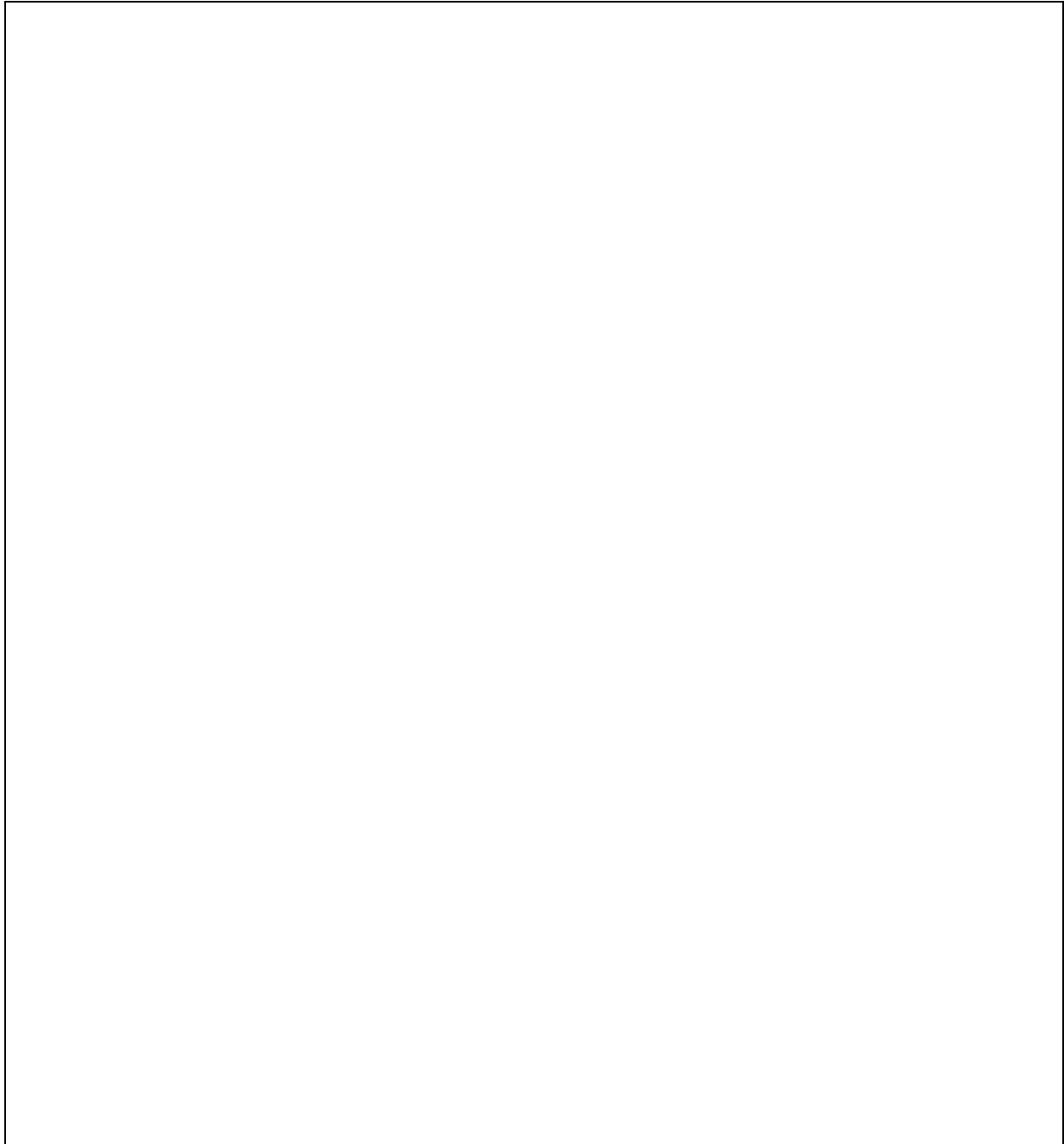


The Bottom Line: The student develops the abilities necessary to do scientific inquiry, including understanding how to observe, record, map and graph their findings.

Mapping Artifacts

Excavators Names _____
Excavation Unit _____

Site Name _____
Date _____



Labeling of artifacts:

The following information must be placed on the label for each artifact found:

1. Excavators Names
2. Excavation Unit
3. Site Name
4. Date

Name _____

Date _____

N
axis

The Grid Sheet

