



Rot or Not?

Making Artifact Predictions

Overview

Archaeologists study the clues from the past that are preserved in the ground, on land, or under water. But to understand a site fully, archaeologists must also know what types of artifacts are not preserved. This lesson asks students to think about organic and inorganic materials and anticipate what types of artifacts to expect at an archaeological site.

Objectives

Students will:

- understand the terms organic and inorganic
- predict which artifacts will survive over time
- anticipate which artifacts might be found at certain sites

Core Standards of Kit

2.2 Problem Solving Process

6.4 Historical Connections

6.6 Being a Historian

Additional Standards

4.5 Continuity and Change

Age Level

Grades 4-12/Ages 9-18

Time

45 minutes

Materials

- artifacts from around the classroom
- DK Eyewitness Book *Archeology*
- copies of "Artifact Predictions" worksheet



Background

In Vermont, archaeologists have found artifacts that resemble iron shovels and stone axes, but without handles. Does this mean that people in the past held on to the metal or stone with their hands? Not necessarily.

Archaeologists understand that the metal and stone parts of the tools have survived over hundreds or thousands of years but the wooden handles have not.

Many factors affect whether an object will survive over the years. Hot and dry conditions, like those in the desert, have helped preserve Egyptian mummies. Cold and wet conditions, like those in Lake Champlain, have helped preserve shipwrecks. In addition, the level of acidity in soils affects how quickly iron will rust or leather will decompose. Check in the DK Eyewitness Book *Archeology* for specifics about the effect of different environmental factors on artifacts.

When archaeologists make interpretations of a site, they must study the artifacts that have been recovered. But they also must consider artifacts that have not survived at the site. In many prehistoric sites, stone tools have survived but clothing and wooden tools have not. Of course this does not mean that Paleo-Indians did not wear clothes or use wooden tools. The interpretation of the site must also take into account human nature and environmental resources available at the time.

This lesson asks students to predict materials that would survive over time. A general rule of thumb is to categorize materials as organic or inorganic. Organic materials tend to decompose more quickly than inorganic materials. As mentioned above, the environment of the site can affect this simple formula. Nevertheless, the students can make some general predictions based on their knowledge of Vermont weather and environmental conditions.

Procedure

1. Introduce the concept of organic and inorganic materials.
Organic = of or relating to living things
Inorganic = composed of matter of other than plant or animal origin
2. Have the students brainstorm a list of items that fit the categories.

| Organic | Inorganic |
|-----------------|-----------|
| plants | rocks |
| animals | iron |
| cotton textiles | glass |
| wooden tools | plastic |

3. Ask the students to imagine that their classroom is covered by a huge pile of dirt (without them inside!). After 200 years, archaeologists discover the room and excavate the site. Ask the students to make a list of items that might be found by the archaeologists. Remind them to think about composite artifacts that are made from many different materials, like wooden shelves held together with nails.

In this discussion, you might come across some tricky artifacts:

skeletons - bones are organic, but take a long, long time to decompose.

leather - also organic, but may take a long time to decompose.

metal - inorganic, but will rust or corrode over time.

charcoal - organic, but the burning process helps preserve the material.

plastic - inorganic, but it can degrade over time.

postholes - wood rots, but leaves dark soil where the posts were.

4. Encourage the students to think about how the environment can affect the process of decomposition. Why do Egyptian mummies survive in the desert? Hot and dry conditions remove moisture and help preserve the bodies. What about the bodies found frozen in the Andes and the Alps? Like in household freezers, the cold temperatures help preserve the organic bodies and clothing. The cold water in Lake Champlain also acts as a preservative on the wooden shipwrecks that sit on the bottom. Why do books in libraries last longer than newspapers in garbage dumpsters? Moderate indoor conditions are better for paper than wet or outdoor conditions.
5. Hand out the "Artifact Predictions" worksheet. Encourage students to think of at least four answers for each category in each scenario.
6. Discuss what archaeologists might find at each site.



Evaluation

Create various scenarios to see if the students can apply their knowledge and prediction skills to other venues.

What Next?

This lesson can be completed in conjunction with the "What Ought to Rot?" lesson plan in the *Additional Activities* section. That lesson uses scientific method to illustrate how the environment affects the decomposition of organic materials.

Use this lesson to prepare students for the "Excavating Vermont Game." Describe the setting of the site and ask students to predict what archaeologists might find.



Artifact Predictions

Think about the following scenarios. Imagine who might have lived there and what might have happened there. Predict what kind of artifacts you might find and what kind might have decomposed over the years.

1. A southern Vermont farm settled in the late 1700s:

| might find | might not find |
|------------|----------------|
| | |

2. An Archaic Native American campsite along the Winooski River:

| might find | might not find |
|------------|----------------|
| | |



3. A sawmill in the Northeast Kingdom from the 1840s:

| might find | might not find |
|------------|----------------|
| | |

4. Your bedroom 200 years in the future:

| might find | might not find |
|------------|----------------|
| | |

Answer Key

Artifact Predictions

Think about the following scenarios. Imagine who might have lived there and what might have happened there. Predict what kind of artifacts you might find and what kind might have decomposed over the years.

1. A southern Vermont farm settled in the late 1700s:

| might find | might not find |
|---|---|
| metal buttons plow blade horse bit stone foundation nails etc. | clothes wooden plow handle leather harness wooden walls fence posts etc. |

2. An Archaic Native American campsite along the Winooski River:

| might find | might not find |
|---|--|
| stone tools boiling stones flakes spear points charcoal in fire pit etc. | wooden tools dugout canoes leather clothes spears shelter (wood/leather) etc. |

3. A sawmill in the Northeast Kingdom from the 1840s:

| might find | might not find |
|---|---|
| saw blades stone foundation nails axe blades chains etc. | sawn boards water wheel wood shingles wagon wheels business records etc. |

4. Your bedroom 200 years in the future:

| might find | might not find |
|--|---|
| computer CDs plastic toys curtain rods fish tank etc. | sheets posters clothes pillows fish etc. |