

POWERHOUSE SCIENCE CENTER

3615 Auburn Blvd., Sacramento 95821 (916) 674-5000

Topics

Archaeology

Grades

4-8

Duration

150 minutes

Vocabulary

archaeology, archaeologist, artifact, feature, ecofact, site, strata, excavation, trowel, context

Next Generation

Science Standards

Practices

Asking Questions & Defining Problems

Planning & Carrying Out Investigations

Analyzing & Interpreting Data

Constructing Explanations & Designing Solutions

Engaging in Arguments from Evidence

Obtaining, Evaluating & Communicating Information

Digging Up The Past

Overview

The program guides students through a hands-on lesson in the theories and methods of archaeology. Each class goes through a short training session to learn about the science of archaeology and proper field techniques. Students then proceed outside to Powerhouse's simulated excavation site that has been seeded with artifacts representing various time periods of California history. After approximately one hour of excavation, students return to the laboratory to work on artifact identification and uncovering the site's history. The program concludes with the students presenting an oral report summarizing their excavation and research findings.

Objectives

- The program's purpose is not only to inform students about the field of archaeology, but also to draw wider connections to other fields of study and teach important skills such as data collection, analysis, research, reporting and collaboration.
- Highlights the cross-curricular nature of archaeological study.
- Simulation requires students to ask questions and define problems, carry out a scientific investigation, analyze and interpret data, construct explanations to explain their discoveries and communicate their conclusions.

Teacher Preparation

- Please arrive at Powerhouse by 9:15 am, this allows students time to use the restroom before the 150 minute program.
- Program starts at 9:30 am and ends at 12:00 noon.
- Divide your class into four (4) equal groups. Students will participate in these groups for the duration of the program.
- Students and adults should dress appropriately for outdoor activities.
- Be aware participants may get dirty.

RAIN POLICY

Program cannot take place in the rain. Please call if rain is in the forecast. If program is rained out, it will be rescheduled for no charge.

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Vocabulary

Archaeology: the scientific study of material remains used to reconstruct past lifeways and cultures

Archaeologist: a scientist who studies past cultures or people by analyzing the things they left behind (sites and artifacts)

Artifact: any portable object made or used by humans

Feature: any non-portable object made or used by people

Ecofact: shell, bone, seeds, and pollen which were used by humans

Site: a geographic area once occupied by people

Strata: horizontal layers of soil or rock

Excavation: the careful process of digging up evidence left behind by past cultures or people at an archaeological site

Trowel: a small hand tool with a flat blade used to carefully remove soil from an excavation area

Context: the position and associations of an artifact, feature or archaeological find in space and time

Digging Up The Past

Extended Learning Activity

Digging Up My Room

This exercise helps demonstrate the type of information an archaeologist can learn about people by just examining the material remains they left behind. It also demonstrates how important and useful additional research can be to gain a deeper and more complete understanding of people and cultures in the past.

Have students pick a room in their house to describe. Next, have the students compile a list of the objects that are in the room, or they can write a description of the room. Have the students write a separate report on what they think the items included, either on their list or in their description, will say about the room, its uses, its owners, its age, or any other information about why they included them on the list. Collect the lists and descriptions. Redistribute them to other students in the class; be sure that they do not know whose room description they have received.

Have the students try to figure out whose room they have received using the clues contained in the lists or descriptions. Is it a boy's room or a girl's room? How could you tell? Is it a family room, a kitchen, or some other kind of room? Have the students write a report of their findings. Be sure they support their conclusions about the room.

When finished, reveal to the students whose room they were studying. What kinds of information did the students correctly identify about the room's owner? What items offered the most useful clues? Which were the least helpful? What other information would have been useful to figure out the room's owner (documents such as letters and diaries)?

Alternative Procedure:

Have each student list ten of their personal possessions on a 3 x 5 index card.

Redistribute the cards at random.

Have students write a description of the person whose card they received.

Share conclusions, discuss the accuracy of their findings, highlight the problems associated with interpreting fragmentary evidence.

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Digging Up The Past

Extended Learning Activity

Sneak Peak

Archaeologists are always asked, “How do you know where to dig?” While there is no simple answer the question, sometimes you can see hints of what might be underground just by closely observing the surface. This activity will replicate what clues an underground archaeological feature may reveal on the surface.

You will need:

- A plastic seed tray, or baking tray, approximately 9” x 12”.
- Packet of fast growing seeds.
- Small stones or gravel.
- Potting soil.
- Cling film.

First “construct” a wall down the middle of the tray, by arranging the stones and gravel. Next, fill in the space around the wall with a thin layer of soil. Sprinkle just a little soil over the top of your wall in a thin layer. Scatter the seeds evenly over the whole tray and gently cover with a thin layer of soil. Spray the tray with water, cover tray with cling film and place tray in warm area with good light.

Have students create an “Observation Sheet” to record what happens over the next few days and weeks. Be sure the students note the number of days since planting, do a simple plan drawing (view from above) and describe what they observe about the site for each observation.

Over the next week or so they should notice that there will be very little growth above the wall with much thicker sprouts in the surrounding area of the tray.

Archaeologists do observe differences in plant growth on the surface to get ideas about underground features. The observations can be done with the help of aerial photography or by simply walking across a field.

In 2011, more than 1500 sites were revealed in the United Kingdom using aerial photography.

The American Antiquities Act of 1906 was the first law to establish archaeological sites on public lands as important public resources. It obligates federal agencies to preserve these resources for present and future generations. It further authorizes the President to protect resources of historic or scientific interest as National Monuments.

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Digging Up The Past

Archaeology is like a jigsaw puzzle, except that you can't cheat and look at the box, and all the pieces aren't there."

-Stephen Dean

The great discoveries all start with the question, "Why?"

-Robert Ballard

"Can you see anything?"

-Lord Carnarvon

"Yes, wonderful things."

-Howard Carter

"We do not follow maps to buried treasure, and "X" never marks the spot."

-Indiana Jones

Resources

Websites

Society for American Archaeology

www.saa.org/publicftp/PUBLIC/home/home.html

Archaeological Institute of America

www.archaeological.org/education

Society for California Archaeology

www.scahome.org

Time Team America

<http://www.pbs.org/time-team/field-school/engage-youth-stem/>

Jamestown Rediscovery-Historic Jamestowne

www.historicjamestowne.org

Books

In Small Things Forgotten by James Deetz