MUSEUMS
THE OTHER CLASSROOM

Museums offer
ideal environments
for teaching kids
in all subject areas
and helping them
to develop critical
thinking skills.
Museums and Archaeology: A Perfect Fit

Museums are ideal informal learning environments in which to teach the public about archaeology. There are at least four reasons why this is the case.

First, by definition museums are institutions which use objects to educate the public about particular disciplines, topics, and issues. The American Association of Museums has established eligibility criteria for participating in its accreditation process. Two of these criteria relate directly to archaeology and public education:

1. A museum’s mission and activities must be essentially educational in nature; and
2. A museum must present regularly scheduled programs and exhibits that use and interpret objects for the public according to accepted standards.

Archaeology uses artifacts to better understand cultures of the past; many museums use artifacts to teach the public about cultures of the past. Thus, the goals and methodologies of archaeology and museums with respect to archaeological collections are closely aligned.

Second, museums reach out to a broad constituency that encompasses varied age groups and educational levels. Archaeology can be brought to a wide audience through museum exhibits and programs. Many individuals can be reached through museums that would not be exposed to archaeology in a school setting.

Third, the informal learning environment in museums provides a good complement to formal educational settings such as the classroom. The informal environment allows students to explore at their own pace, using all or most of their senses. Information often is provided in a variety of ways, which appeals to different learning styles. If allowed time to wander through a museum, students actively can pick and choose objects and topics on which to focus their attention, arousing their natural curiosity and creating a high motivation to learn. Artifacts often are presented in representations of their cultural and/or archaeological context, which is difficult to do in the classroom. (See the articles by Wilhelmina Savenye on page 6 and Anna Johnson on page 7.)

Finally, walk-in visitors come to museums of their own free will, on their own time. Visiting museums is considered a leisure activity; guests expect to enjoy themselves and have a rewarding experience. This is not counterproductive to learning at all. In fact, learning can be promoted: visitors come because of their own curiosity and often learn in spite of themselves. They are exposed to new ideas and concepts because they are free to explore and be creative in their thinking.

We have dedicated this issue of Archaeology and Public Education to museum educational programming in hopes of demonstrating that museums are ideal learning environments for educating the public about archaeology and cultures of the past. Readers will find examples of successful museum programs and thought-provoking articles about the value of using informal learning environments to teach archaeology. In addition, resources are presented for finding out more about other museum programs, getting educational programs started, or improving existing programs. Explore and enjoy!
Digging Beneath The Streets Into New York City’s Past

Tiffany Smythe

In the minds of my students, the 200-year-old cannon at “New York Unearthed” has sunk hundreds of ships in New York Harbor. Some think that it came from a pirate ship; others believe it saved the city from British (or French or Martian) invasion, and all wish they could fire a six-pound cannonball through the museum’s glass exhibit window—just so they could see whether it works.

Our cannon may not have sunk British war vessels from its station on Battery Park, and it was probably not used by Captain Kidd, but these speculations and stories bring this artifact to life for the students who see it. It is by studying this cannon and other archaeological artifacts that students experience New York City’s past through the “Underground History” program of the South Street Seaport Museum.

“New York Unearthed: City Archaeology,” located across from Battery Park in Manhattan, is a satellite exhibition of the South Street Seaport Museum. Through an interpretation of archaeological finds from Manhattan and the surrounding boroughs, New York Unearthed complements the Seaport Museum’s interpretation of the city’s social, commercial, and maritime history. The exhibition explores Manhattan’s rich cultural heritage from Native American settlement, to Dutch New Amsterdam, to America’s busiest and wealthiest 19th-century port. New York Unearthed includes historical dioramas, an artifact wall that represents the stratigraphy beneath city streets, a working conservation lab, and a simulated ride to the depths of an archaeological excavation.

School groups are introduced to New York Unearthed through the interactive educational program, Underground History, which is adaptable for all levels but is most popular with grades 3–5. The program is designed to introduce children to the archaeological process and to explore ways in which archaeological finds illuminate New York City’s past. To focus attention and create excitement, we begin the 90-minute program with our most evocative—and largest—artifact, the 200-year-old cannon. By examining this cannon and speculating on its historic use, students are introduced to the idea of the archaeologist as a “detective” of history, while learning that artifacts like this cannon are found underground in New York City.

With interest sparked, the group is directed to act, as archaeologists do, like detectives. Equipped with worksheets and pencils, students set out to explore the exhibit dioramas in search of an artifact that they have been assigned. Once they find it, they must determine its name by examining the exhibit text. At the conclusion of this activity, students are trained to look with a detective’s eyes at the artifacts in the museum. Already they are brimming with questions.

The group then proceeds downstairs (“underground”) to the second level of the museum, where they encounter a mural that provides a transition from New York City, ca. 1757, to New York City today. With the idea that artifacts found in New York Unearthed came from a time when the city had fewer buildings, more trees, and more ships, students begin to appreciate the “life” that artifacts like the cannon once had.

The student-detectives then examine the stratigraphy wall, a three-dimensional illustration of the basements, privies, and landfill layers that comprise the underside of New York City. The group imagines that they are an archaeological team going to the middle of Pearl Street to commence an archaeological excavation; and as they dig down through the pavement, they encounter the artifacts and various features illustrated on the artifact wall. The students find the artifacts that were left in the remains of old buildings, or that were thrown away as garbage in landfills and privies.

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An archaeological “detective” makes notes about an artifact while participating in the New York Unearthed program. Photo courtesy of South Street Seaport Museum.
In 1991, the Natural History Museum of Los Angeles County received a generous grant from the Maxwell H. Gluck Foundation to build a mobile museum that would bring hands-on science to elementary schools of the Los Angeles Unified School District (LAUSD).

The Earthmobile is a specially modified tractor/trailer containing a simulated archaeological excavation that is designed to teach students about Native Americans and flora and fauna of southern California. Inside the 48-foot-long by 8-foot-wide trailer is a reproduction of a coastal southern California canyon, complete with plants and taxidermed animals. Coupled with pre- and post-visit classroom activities, the exhibit reveals the interrelationships among living and non-living components of our world, teaches scientific methods and skills, and imparts a sense of stewardship for the earth.

The Program

The exhibit inside the Earthmobile is a cornerstone in a series of related educational activities designed to enhance student experiences and to tie together the program’s educational objectives. Components of the Earthmobile program include teacher training, pre-visit curriculum materials, a visit to the Earthmobile, the “Acorns, Sea and Sage” classroom program, and post-visit curriculum. The Earthmobile spends one week at each school and accommodates two classes of third- to sixth-grade students each day. Two instructors accompany the Earthmobile to each school, and the total program time is two hours.

The curriculum is used to introduce major themes of the Earthmobile and to show the correlation of the activities with the State of California science framework. It also prepares students for the methods and disciplines needed in the Earthmobile and provides the teacher with an interdisciplinary connection for classroom objectives.

Pre- and post-visit activities are divided into six modules: introduction, native peoples, field explorations, interrelationships, stewardship, and appendices. The first three are used for both pre- and post-visit lesson plans, while the stewardship subject area is used by teachers for post-visit activities. The appendices consist of a vocabulary list, a bibliography, and an evaluation form to solicit teacher comments on the entire program.

In The Earthmobile

Upon entering the canyon in the Earthmobile, students see that one side of the upper canyon contains a shallow cave covered with Chumash pictographs. A bobcat peers down from the cave, and two bedrock mortars can be seen on a rocky ledge. A sandy wash runs along the floor, and animal tracks give evidence of the residents to be seen throughout the canyon. A fossil-rich layer cleaves the wall, with fossilized sharks’ teeth, whale vertebrae, clams, and oysters jutting out from the sandstone within the students’ reach. Below the fossils, a series of small excavations line the edge of the canyon. Across from the excavations, five camp tables comprise a field station.

Once inside, students don work vests and become archaeologists-for-a-day. Gathered into teams and guided by the instructor, they excavate several objects, which they analyze at the field laboratory using simple scientific equipment and methods. Through a self-guided activity book, students identify and learn about objects they have uncovered. A field notebook is used to record answers to questions, draw pictures of objects, and map their location in the site. Other activities include touching preserved specimens, identifying animals with key cards, and mapping the canyon.

Objects buried within the excavation include a tower shell fossil, abalone shell, shell fishhook, walnut shell dice, tuna vertebrae, pocket gopher jawbone, obsidian spear point, and soda can, among others. A short activity for each object is based on some aspect of its natural or cultural history, use by Native Americans, or its role in the ecosystem. With the exception of the soda can, these items were selected to represent different scientific disciplines. Objects used in Native American religious practices or other culturally sensitive areas were not selected; others were chosen because of their durability, safety, and replaceability.

After a 40-minute archaeological expedition, the on-board instructor gathers students at the end of the canyon and leads them in a follow-up discussion of their activities. Topics include problems and pitfalls of the identification process. For example, did the students misidentify anything? What stories could be told from the artifacts? What pieces of the picture of the past were missing?

The instructor holds up a soft drink can, asks the students whether they excavated a similar item, and asks how
they think someone from the future would identify it. The discussion is interrupted by the appearance of an archaeologist who has traveled from 300 years in the future. She is perched on a branch of a tree in the canyon. The archaeologist is a Techniscan image, a special effect that allows the image to interact with three-dimensional objects in the diorama and to converse with the on-board instructor. The archaeologist misinterprets the soft drink can as a fuel container for our cars (since the cans are frequently found along old roads). She then discusses the loss of animals from the canyon due to the presence of people, and the introduction of other animals due to human intervention. She also discusses the loss of knowledge about her Native American heritage due to illegal digging at archaeological sites, and the role that students have in protecting the future of canyons in southern California.

As students leave the Earthmobile, they take off their vests and, with them, the persona of an archaeologist. Throughout the Earthmobile program, beginning with the teacher training and the pre-visit curriculum, teachers and students learn that digging on their own is destructive to sites and our knowledge of the past, and it can be illegal.

Because of the limited size of the Earthmobile, only one-half of a class can be accommodated at a time. While a group of students is in the Earthmobile, the remaining students are participating in a classroom program called “Acorns, Sea and Sage.” Using scientific specimens and reproductions of artifacts, students explore the life of the early peoples of southern California, specifically the Chumash and Gabrielino Indians, and compare existence today with life 300 years ago.

Development

The Earthmobile project was developed by the museum’s education division staff with assistance from a variety of other experts. Because of the interdisciplinary nature of the subject matter, many curators were involved in selecting and acquiring specimens, providing background information on natural and cultural history, and proofing the activities for scientific accuracy. We consulted anthropologists from the University of California, Los Angeles; four teachers from the LAUSD; and two museum consultants. They were involved in writing the curriculum and reviewing the activities to ensure their appropriateness to the levels of third- to sixth-grade students. Throughout the writing process, students were selected to read, complete, and evaluate the activities to provide us with another measure of effectiveness.

Additionally, we met with the local Chumash Elders’ Council and business committees to seek their advice and direction and to secure their support for the project. We received their approval for the design and content, and worked with them to ensure an accurate interpretation of their culture. We solicited their input on the goals and objectives and, in particular, asked for their input in conveying the message of preservation of archaeological sites.

Fulfilling Goals

The Earthmobile program is fulfilling its goal of providing free museum access and hands-on science to students who would not otherwise have such opportunities. In the first four years, more than 70,000 students participated in the program. The Earthmobile’s realistic setting excites interest in science and the natural world. Natural areas of southern California are brought to inner-city asphalt playgrounds, and doors are opened to the wonder that lies only miles away. But most of all, students are made aware of the impact that humans have on the world around them and how they can make choices about their own behavior that modify that impact for the present and the future.

Megan Walsh is the Earthmobile and Seamodel Coordinator at the Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, CA 90007; (213) 744-3520. This article was adapted from “Asphalt Archaeology: Earthmobile on the Playgrounds of Los Angeles” by Judith Chovan and Joan Grasty, Curator 35(4): 298–315.
"I can go places I could never go any other way, see things I could never see otherwise."

This was the powerful answer that a high-school student in a physical science class once gave me when I asked why he felt that he learned a lot from a video-based multimedia curriculum. I hear the same things from visitors when I work as an evaluator in museums. Informal educational settings like museums and archaeological parks have tremendous power to teach, engage, and change our students and visitors.

We in formal education often have students who are "captive" within our classrooms. They view what we show them, listen (we hope) to what we say, in whatever sequence we determine, for the reasons (we think) we determine.

Although I teach classes in learning and instructional design for teachers and trainers, doing visitor evaluation outside of formal education systems has taught me many lessons on how people learn in informal settings. My students are grateful that I've learned these lessons, because at times I've succeeded in "opening up" the walls of formal education for them. I hope in this article to share with teachers, museum educators, and public archaeologists the power informal educational settings have to touch and to move our students.

Comparing the elements of formal and informal learning can show the impact of informal environments for learning (Table 1). Picture students in a formal classroom. The learners stay in their seats, generally for a set period of time. The classroom is structured, and the input that students receive is usually "instructional" in nature. The teacher introduces a lesson and presents information, for example. Although the information might be presented in a variety of forms—by having students read material, through a teacher lecture or demonstration, overhead transparencies, computer software, posters, or video—students often receive the information relatively passively. The major choice students have is to make an effort to

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TABLE 1

Elements of Formal and Informal Learning Environments


<table>
<thead>
<tr>
<th>FORMAL LEARNING ENVIRONMENTS</th>
<th>INFORMAL LEARNING ENVIRONMENTS</th>
</tr>
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<tbody>
<tr>
<td>Long exposure to information.</td>
<td>Short exposure to information.</td>
</tr>
<tr>
<td>Learning input is &quot;instructional.&quot;</td>
<td>Learning input is varied, not necessarily &quot;instructional.&quot;</td>
</tr>
<tr>
<td>Information is usually presented in a linear sequence.</td>
<td>Learners can access information in any order they wish, following any pathways they wish.</td>
</tr>
<tr>
<td>Teachers usually determine the instruction learners receive.</td>
<td>Learners make choices about what information they are interested in receiving.</td>
</tr>
<tr>
<td>Learning often is indirect, using symbols, such as words.</td>
<td>Learning often is direct, using objects.</td>
</tr>
<tr>
<td>Often text-oriented.</td>
<td>Often highly sense-oriented and interactive.</td>
</tr>
<tr>
<td>Large quantities of information may be presented at once.</td>
<td>Information often is presented in &quot;layers&quot; to allow those who want more to go &quot;deeper.&quot;</td>
</tr>
<tr>
<td>Learning activities often are quiet and individual.</td>
<td>Learning is a social group activity.</td>
</tr>
<tr>
<td>Learners are usually one age level.</td>
<td>Learners are in groups of all ages.</td>
</tr>
<tr>
<td>Goals and objectives are usually cognitive.</td>
<td>Goals and objectives may be cognitive, but emphasis is often on attitudes, motivation, and quality of the experience.</td>
</tr>
<tr>
<td>Tests often are used to measure knowledge and skills learned.</td>
<td>Tests infrequently are used. Evaluation often measures attitudes and behaviors.</td>
</tr>
<tr>
<td>Motivation may be an issue.</td>
<td>&quot;Curiosity&quot; can be used to motivate.</td>
</tr>
<tr>
<td>Learners come to &quot;learn.&quot;</td>
<td>Learners often come to have fun, as well as to learn.</td>
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</table>
Building Successful Museum-School Partnerships

Anna Johnson

Museums are a valuable educational resource for schools. Most museums offer an assortment of programs, and one only needs to contact a local institution to take advantage of its services. Museum curators are experts in many topics relating to the focus of the facility and are pleased to be involved in local projects, whether or not they take place at their site. Museums also house materials that cannot be found elsewhere, and exhibits provide a context in which artifacts are showcased.

Museums usually offer programs that provide information and materials for use in the classroom, and these can be very effective. However, it is equally important for students to visit museums from time to time, for several reasons. What is sent into the classroom often can be touched, but the significance of objects is more effectively conveyed in a museum setting. In addition, a museum provides the visual context through exhibits that enables students to better understand concepts. Students who visit museums as children often return as adults.

A successful museum experience includes three components: pre-visit information, the visit, and post-visit activities. Because they are intended as tools for the teacher to use to prepare the students for their encounter, pre-visit materials can be presented in a variety of ways. General information about the location of facilities, where to park the school bus, and food service also needs to be included. If students know the schedule of the day and the location of basic facilities, they are free to explore without worrying about what happens next. Successful pre-visit information can involve such formats as traveling trunks, notebooks, and docent presentations, but, basically, these activities need to prepare students for what to expect and arouse their curiosity.

The site visit can be a fun and exciting time for teachers, students, and museum personnel. Pre-visit material has aroused interest; now students get to see actual objects and engage in activities for which they have been prepared. The visit should allow student interaction with museum guides and artifacts. It should enable them to remember the encounter as an interesting activity. If students are wearing name tags, guides or docents can develop a connection with them quickly. Tour leaders know that it helps to keep the group moving to hold student interest. In addition, if each student is held accountable, in a non-threatening way, for a piece of information or an activity, he or she more likely will have a positive learning experience.

Post-visit activities capitalize on the interest that students develop during their on-site experience. Many museums prepare materials for teachers, which can facilitate discussion and classroom activities after the fact. Post-visit activities frequently link the museum visit with the school curriculum.

Teachers should be informed about museums to which they wish to bring their students, which can be done by contacting staff who work with schools or who are in charge of programming. This might be the curator or director of education, or an education coordinator or specialist. Most museums consider school groups to be an important element of their audience and welcome these visits; they will work with teachers to make the experience as meaningful as possible. In addition, some museums provide free passes to teachers before the scheduled visit so they can be better prepared.

Museums sometimes have guidelines about the use of cameras and writing pens, and the copying of their materials. Visiting with museum staff can help to clarify these parameters. For example, pictures may be taken in the exhibit halls at the Tempe Historical Museum, but flash units cannot be used because of potential damage to artifacts. Schools often wish to bring still or video cameras to record the visit, and their use should be clarified before the trip.

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ARCHAEOLOGY AND PUBLIC EDUCATION 7
Lesson Idea

TELLING
An Object’s Story

Overview
During a museum visit, students select objects to study and describe, then write stories based on their observations and reactions to the objects.

Objectives
Students will
• closely observe cultural objects and list concrete details about them
• select important details to include in a descriptive paragraph
• distinguish between objective and subjective language
• write a descriptive text using only objective details
• write a story using both objective and subjective language

Subjects/Skills
• archaeology, anthropology, history, language arts, art
• observation, description, evaluation, comparison, interpretation, composition, drawing

Age Level
Grades 6–10

Materials
• paper and pens or pencils
• clipboards

Time Required
Allow 1–2 hours to prepare for this activity and 1–3 hours at the museum. Optionally, the final step of the activity can be done during a class period.

Background
Whether objects that they recover are whole or fragmentary, an archaeologist must analyze the characteristics of each artifact—such as shape, size, fabric, decoration, and mode of construction—and then try to determine its function. This latter quality is sometimes hard to assess, and archaeologists take care not to assign a function based on modern perceptions about what people need and the tools they make.

In addition, a researcher may have subjective or emotional reactions to an artifact because of its attributes, symbolism, or the statements it makes about a past population. In writing about their finds, archaeologists emphasize the objective details, although they sometimes weave their subjective responses into the story as well.

In an activity that combines the observation of objects with a writing exercise, teachers make use of the rich array of cultural materials available at local museums. Adapted from a lesson plan in which paintings are the focus of attention, the activity as presented here can be tailored further, based on current classroom topics or the age and abilities of students. For example, the lesson can complement an archaeology unit by demonstrating one of the tasks that archaeologists perform; or it can be used to highlight artifacts from a particular culture or time period.

Older students may be able to work with limited supervision in different areas of the museum, while younger students should be kept together in a single gallery. In selecting their artifacts for study, students should avoid objects that have few distinctive attributes, such as a plain pot sherd; and avoid reading interpretive labels, focusing instead on the qualities of the artifact.

Vocabulary
artifact — any object made, modified, or used by humans
attribute — a characteristic or property of an object, such as weight, size, or color
culture — a set of learned beliefs, values, and behaviors—the way of life—shared by members of a society
historic — a term referring to past eras or cultures in which or about which written records were made
prehistoric — a term referring to past eras or cultures in which or about which written records were not made

Preparation
1. Select a local museum to use for this activity, then visit it to become familiar with the exhibits. Note the locations of objects that students can study during the exercise.

2. Contact the museum education or program staff to make a reservation (if necessary) and to ask whether there is a quiet area—perhaps a corner of a gallery—where you can conduct part of the lesson without being disturbed.

3. If necessary, model the activity in class before the field trip so students will know what to expect. Bring a selection of “thingamajigs”—objects that are not readily identifiable—to class and guide students through the steps 2–5 of the lesson plan.


Procedure
1. Students select an object to study. Lead students on a brief tour of the museum, pointing out several objects that you find appropriate for the activity. Tell them to note the locations of artifacts that interest them and explain that each person will write about a different object. Then instruct each person to choose an item for the assignment.

2. Students make a list of the details, or attributes, of their object.

Allow students a few minutes to observe their artifact, then instruct them...
to make a list of as many details as possible that describe its appearance. The list should include physical attributes rather than subjective observations, assumptions, or emotions that the artifact evokes. For example, a student might write, “pointed stone object with nicks along the edges of both sides,” but avoid such language as “small, perfect arrowhead used for hunting.”

3. Students write descriptions of their objects.

Gather students in the quiet area identified during preparations. Allow them several minutes to write a description of their object based on the list that they compiled. Explain that the description should enable someone else to find the artifact in the museum. Tell students not to include all of the attributes that they listed, but rather to select the most important or distinctive traits; and remind them again to avoid making subjective remarks or assumptions. For now, the point is to focus on the physical details of the object.

4. Volunteers read their descriptions aloud.

Select a few volunteers to share their descriptions. After each one, ask listeners to state whatever details they remember. If two students wrote about similar artifacts, discuss similarities and differences in the two descriptions. Discuss any subjective language or assumptions that may have slipped into the descriptions, explaining that the focus at this stage is to give “just the facts.” Ask students how subjective language can portray more than the facts.

5. Students create drawings based on each other’s descriptions.

Divide students into teams, ensuring that students who worked on similar artifacts are not paired. Instruct team members to exchange artifact descriptions and to draw an illustration of the other’s object.

6. Students attempt to find their partner’s object.

Give students 10 minutes to try to find the object described by their partner. They may use the descriptions and drawings, and they should work in teams, although partners should not give each other hints as they search.

7. Students evaluate the written descriptions.

When the search time has elapsed, reconvene students in the quiet area and ask how many located their partner’s object. Invite several teams to share their descriptions and drawings with the rest of the class, using these examples to discuss aspects of the descriptions in general that were useful in helping to draw an artifact and find it in the museum, as well as ways in which descriptions could have been improved. If time permits, take students to an artifact that no one has studied, preferably one with many attributes, and collectively create a descriptive list of its details, asking students to draw on the experiences that they have just had.

8. Students write stories about their objects.

To help students combine the visible aspects of cultural items with the feelings and ideas that they inspire, ask students to write a story about their artifact. Explain that they may use their descriptions or return to the object; and, unlike their descriptions, the stories do not have to stick to the facts. The inclusion of emotions, assumptions, and subjective language is quite acceptable.

9. Students share their stories.

(This step can be done at the museum or in the classroom.) Ask students to read their stories aloud to their classmates.

The concept and portions of the text for this activity have been adapted from “Telling a Painting’s Story,” in Collecting Their Thoughts: Using Museums as Resources for Student Writing, pp. 13–17, produced by the Smithsonian Institution Office of Elementary and Secondary Education. The activity was adapted by KC Smith, Museum of Florida History, Tallahassee, FL.
A multitude of resources exist detailing the role that museums can play in developing educational partnerships, enhancing school curricula, and providing unique learning experiences for youths and adults. Because of the range of topics that museums embrace, the creative and interactive ways in which information and artifacts are presented, and the special programming that often augments exhibits and collections, educators who take advantage of these resources will find their instructional efforts made easier for themselves and more dynamic for their students.

We have selected several museum publications and programs to highlight below, although many other outstanding resources are available.

Building Partnerships

The American Association of Museums (AAM) recently republished Building Museum and School Partnerships, a popular publication originally produced by the Pennsylvania Federation of Museum and Historical Organizations. An easy-to-use, spiral-bound book with 11 chapters of detailed information, Partnerships is a resource for museum staff and school teachers planning to develop a cooperative program or to improve an existing one. It concludes with an appendix of forms and outstanding program ideas. The cost to AAM members is $25; the non-member cost is $30. Order from AAM, Department 4002, 1575 I St., N.W., Washington, D.C. 20042-4002; (202) 289-9127.

Museum Grants

The Institute of Museum and Library Services awards grants for museum and school partnerships through its Museum Leadership Initiatives program. The goal of the 1996 grant cycle is to build on and to transform existing museum/school relationships by providing the support needed to plan or to implement groundbreaking and innovative collaborations. Planning and implementation projects funded through this program would be directed at transforming the museum/school partnership beyond traditional relationships. Project support is available solely for educational programs to expand and enhance existing partnerships between museums and schools. For further information about 1997 grants, contact the Institute of Museum and Library Services, Room 609, 1100 Pennsylvania Ave., N.W., Washington, D.C. 20506; (202) 606-8536.

Partnership Ideas

As an extension of its Museum Leadership Initiatives program, the Institute of Museum and Library Services has produced True Needs, True Partners. Museums and Schools Transforming Education. The “Partnership Profiles” about 15 museum/school partnerships funded by grants in 1994 describe a range of successful projects that focused on such areas as cooperative learning, curriculum enhancement, parental involvement, and student experiences in art, history, and science. The chapter entitled “Conditions for Partnership” outlines 12 basic factors that are necessary when museum and school educators develop cooperative ventures. Two concluding essays offer perspectives about the roles that museums play in supporting the educational process. Order this free publication by calling IMLS at (202) 606-8536.

Art to Zoo

The Smithsonian Institution publishes a quarterly magazine entitled Art to Zoo, intended to help teachers bring “the power of teaching through objects” into their classrooms. The publication provides classroom-ready materials for grades 4-9 that are drawn from the Smithsonian’s hundreds of exhibitions and programs—from art, history, and science to aviation and folklife. Each of the four annual issues explores a single topic through an interdisciplinary, multicultural approach. The November/December 1995 issue was dedicated to archaeology. Materials presented in Art to Zoo, which is free of charge, are part of the public record and can be duplicated for educational use without copyright restrictions. For further information, contact the Smithsonian Institution, Office of Elementary and Secondary Education, Arts and Industries Building 1163, MRC 402, Washington, D.C. 20560; (202) 357-2425.

Enhancing Language Arts

Another museum-based publication by the Smithsonian’s Office of Elementary and Secondary Education, Collecting Their Thoughts: Using Museums as Resources for Student Writing, offers practical ways for teachers to use art works, artifacts, collections, and other materials as a basis for student writing and learning. Emphasizing the process of writing rather than just the end product, the activities in this booklet invite students to explore, explore, and think. The activities are based on Smithsonian workshops offered to teachers and others for more than 15 years. Copies may be ordered for $5 from the Smithsonian Institution Office of Elementary and Secondary Education; see address above.

Refining Field Trips

Touch the Mind, Touch the Spirit. A Guide to Focused Field Trips, produced by the Field Museum, is an extremely useful publication for classroom teachers. It provides not only perspectives on how museums can enhance the educational process, but also suggestions, activity ideas, and procedures for ensuring that museum visits will be as beneficial as possible. Even the section dealing specifically with the Field Museum has ideas that can be adapted for other institutions. Copies may be ordered from the Field Museum of Natural History, education department, Roosevelt Road at Lake Shore Drive, Chicago, IL 60605; (312) 922-9410. The cost is $10 including shipping, and orders must be pre-paid.
Certification Program Brings Interested Amateurs Into The Field

Diane Folsom

In the classroom, archaeologists are taught to deal with research questions and sampling strategies. In the real world, they must struggle with funding and staffing problems.

To alleviate some of these real-world problems, the anthropology department of the Carnegie Museum of Natural History and the Allegheny Chapter of the Society for Pennsylvania Archaeology have established a partnership to provide field support for professional archaeologists.

The "Archaeology Certificate Program," offered since the early 1980s, requires participants to complete 100 hours before receiving their certificate. Time is divided between classes (20 hours), lab work (20 hours), and field work (50 hours). The remaining ten hours can be earned by work in these three areas or by participating in other chapter-sponsored activities such as field trips to excavations.

Participants are given a log book in which they keep a record of their hours, and it must be signed by a chapter member or participating archaeologist. The program requires serious commitment on the part of the participant; to date only 25 people have received a certificate—which is not a permit to begin an excavation but, rather, which certifies an individual to provide experienced assistance to an archaeologist. Most people who complete the program continue to volunteer service on local excavations.

Classes given by archaeologists and anthropologists from local universities, museums, and contract firms range from hands-on instruction in the identification and dating of pottery to the presentation of papers on local excavations. Fieldwork comprises most of the required hours. Each participant is supervised during fieldwork by an archaeologist. As various tasks are learned (screening, mapping, flotation), the log book is signed by the supervisor.

A similar process is used for lab work. Participants learn and complete specific tasks under the supervision of an archaeologist. The hands-on activity of processing artifacts helps amateurs to develop artifact recognition skills as well as an understanding of the preservation and analysis process. It also reduces the archaeologist's workload.

Since 1989, field training has been conducted on the Wiley farm in Washington County, Pa. Part of the farm, which contains several identified sites, has been purchased by the Archaeological Conservancy. Other sites have been excavated by volunteers who have completed, or are currently completing, requirements for certification. Without this volunteer labor force, the information extracted over the last seven years might have been lost.

In an age of rapidly diminishing funding, this program has provided field archaeologists at the museum with support staff that they need to continue their research. It also has provided an outlet for avocationalists to make a real contribution to the field and to increase their awareness of the problems associated with unsupervised activities in the field. This successful program will continue as long as there are people interested in preserving Pennsylvania's past.

For more information, contact Diane Folsom, Native Education Program, Carnegie Museum of Natural History, 5800 Baum Blvd., Pittsburgh, PA 15206-3706; (412) 622-3283.

To learn about another successful certification program for avocationalists, contact the Arkansas Archeological Society at (501) 575-3556.
In the March 1996 issue of Museums Alaska's Network, Robert Guralnick of the University of California, Berkeley, department of paleontology, noted that there are three kinds of world wide web (WWW) sites on the Internet that relate to museums.

The first type focuses on the physical museum itself, showing floor plans of exhibits, listing hours of operation and admission fees, and providing information about programs at the institution. The second type creates a completely different environment, offering exploration in the subject matter of the museum, without reference to the actual facility. The third type is a combination of the first two. The listing below describes several museums that fit into these categories, along with their Internet addresses.

Type 1 Sites

The Canadian Museum of Civilization, Hull, Quebec, lists basic information about the institution, including a calendar of events, member and volunteer opportunities, facilities, and services. Gallery tours allow one to explore the permanent, temporary, and children's museum exhibits. The lower level is dedicated to Canada's first peoples. A "behind the scenes" section provides information on research activities (including all current archaeological projects), visitor studies, and collections care. The section on the museum's collections features a photograph of European paleolithic implements.

http://www.cmcc.muse.digital.ca/cmcchome.html

The Peabody Museum of Archaeology and Ethnology, Cambridge, Mass., features information on the archaeological collections, temporary exhibits, and current events.

http://fas-www.harvard.edu/~peabody/

The Florida Museum of Natural History, Gainesville, Fla., provides a calendar of events and a description of the museum's location and hours. The Department of Anthropology section includes information about Caribbean, environmental, and Florida archaeology. It also provides details about the museum's ceramic technology laboratory, detailing the history of various programs, describing the types of research conducted, and introducing the staff.

http://www.flmnh.ufl.edu/

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Greetings to all state network coordinators and other interested readers!

Joelle Clark has started an email coordination and information system, designed to transfer information from SAA, establish a communication system among state network coordinators, and share information about archaeology education in our various states. This column is based on her first transmission, in which she writes: “This first edition will feature archaeology education in the states of Tennessee and Wisconsin. I would like to feature programs in all participating states, so if you get a chance, email me a paragraph or two to pass on.”

To provide information or receive updates by email, contact Joelle at Northern Arizona University, Science and Mathematics Learning Center, P.O. Box 5697, Flagstaff, AZ 86011-5697; (520) 523-8797, (520) 523-7953, fax; see email address on page 14.

**Tennessee**

Tennessee held its first Bureau of Land Management “Project Archaeology” facilitator training last fall, during which 16 people, including archaeologists and educators, were trained. Three teacher workshops have resulted from the training. The Tennessee Department of Education, Office of Conservation Education, has offered to help to administer Project Archaeology throughout the state.

During the 1995 legislative session, the state Division of Archaeology was authorized to establish a Tennessee Archaeology Awareness Week. A grant from the Tennessee Historical Commission matched with monies from Kevin E. Smith of Middle Tennessee State University provided funds for the event, which was held in September. Smith has also established a web page on Tennessee archaeology:

http://www.mtsu.edu:80/~kesmith/TNARCHNET/archpage.html

**Wisconsin**

The Mississippi Valley Archaeology Center (MVAC) Archaeology Education Program offers numerous ways for the public to become involved in archaeology, including monthly speakers, an Archaeology Day, and field and laboratory opportunities. It also offers youth camps in the summer and a high school field school. Precollegiate instructors can take advantage of for-credit classes dealing with archaeology, a teacher field school, workshops, resources for use in the classroom, and a variety of classroom presentations. In addition, activities can be developed to meet the unique needs of individual classrooms or agencies.

For additional information, contact Bonnie Christensen at MVAC, 1725 State St., La Crosse, WI 54601; (608) 785-8454.

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**South Street Seaport Museum . . .**

*Continued from page 3*

“Yuck! You dig that up?” is a question that we have heard more than once.

The exhibit exploration concluded, we set the group to the most challenging and exciting of the day’s activities: handling, examining, and documenting artifacts. Four “archaeological teams” are given boxes of artifacts. Each student makes notes describing and analyzing one artifact, noting its shape, color, material, and possible function or use. Each team then puts its “finds” together to determine what sort of place or context they came from, and what kind of people might have used these objects.

The concluding discussion is led in part by the students: each team presents its conclusions to the rest of the class, and the group explores the ways in which artifacts can indicate things about the people that used them. To many children, a beer or wine bottle means an alcoholic was nearby; a clay pipe must have been used for some weird, 200-year-old drug; and the wig curler (“They were used by men? Are you kidding?”) was certainly the property of George Washington himself. All kidding aside, however, some truths emerge: an array of broken pot sherds indicate the privy of a fairly well-off family, while the beer bottle, horse shoe nails, and clay pipe of another collection may point to a tavern or inn that once stood on that site.

By the end of the Underground History program, students have been presented with a great deal of material and asked to come up with serious ideas. Some children demonstrate a good understanding of the archaeological process and the related issues: “Can archaeologists just dig anywhere, like my backyard?” Others are taken with the vivid stories of Manhattan’s past.

I have been asked whether taverns had bouncers; whether people recycled in the 1700s; and how cannonballs actually caused damage if they did not blow up. One student even insisted on assuming the identity of Dutch governor Peter Stuyvesant for the remainder of the day. In that short 90 minutes, each child has seen, touched, examined, and experienced some hard piece of evidence about their city’s past—and that is not easily forgotten.

Over the past six years, the Underground History program has become the most popular school program of the South Street Seaport Museum. In-school visits and walking tours are available in conjunction with the program, and shorter programs are available for grades K-2.

For more information, contact the South Street Seaport Museum, 207 Front St., New York, NY 10038; (212) 748-8753. Tiffany Smythe formerly was the archaeology educator.
Museums . . .

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Type 2 Sites

The Museum of Antiquities, Newcastle upon Tyne, England, features an “Object of the Month” that changes on the first day of each month. A photograph is accompanied by a description of the object. The section entitled “By Popular Demand” displays items previously featured as objects of the month. By clicking on “Explore Flints and Stones: Real Life Prehistory,” browsers are introduced to the world of Late Paleolithic hunter-gatherers. A shaman talks about all aspects of life in his culture through the use of photographs, drawings, and short narratives. Browsers also can meet an archaeologist who uses the same media to describe the archaeological evidence left behind by Late Paleolithic culture.

http://www.ncl.ac.uk/~nantiq/

Type 3 Sites

The Field Museum, Chicago, Ill., includes standard information on visiting the facility, current exhibits, and educational programs. In addition, the science section features an article on archaeologist Anna Roosevelt’s recent paleoindian discoveries in Brazil.

http://www.bvis.uiuc.edu/museum

The Santa Barbara Museum of Natural History, Santa Barbara, Calif., gives information on the education department’s activities, such as tours and field trips. This

Parks . . .

Continued from page 12

classroom kit that includes a video, gallery guides, and experiential learning activities at the museum. Contact: (309) 547–3721.

Elden Pueblo, Flagstaff, Ariz., hosted the Festival of Science in September, with activities that included excavation, site tours, atlatl throwing, split-twig figurine making, flint knapping, environmental educational tours, artifact washing, and ruin reconstruction. The site also arranges special programs for school groups throughout the year. Contact: (520) 527–3450.

Toltec Mounds Archeological Park, Scott, Ariz., offers a full range of activities throughout the year. Highlights during the fall have included Exploring Indian Life at Toltec, Flint Knapping Day, and Primitive Fishing Technologies in September; a Slate Workshop in October; and a Rabbit Stick Workshop in November. Contact: (501) 961–2420.

Chucalissa Museum, Memphis, Tenn., is still struggling to remain open in the face of budget cuts. Activities sponsored during the fall have included the exhibit “Mythology and Pottery in the Central Mississippi Valley,” which opened in September, and Native American Days, a special event for elementary school children that was hosted in October. Contact: (901) 785–3160.

http://www.earth.org/-inverts/

The Museum of Florida History, Tallahassee, Fla., WWW pages are part of the Florida Division of Historical Resources site that also presents information about archaeology, historic preservation, folklife, and history. The museum pages provide a basic overview of the institution, describing educational programs, calendar of events, exhibits, and the museum’s four historical sites, one of which is an archaeological and living history park. The collections section offers an Artifact Care Series that provides suggestions about preserving objects in one’s home. A link to the “Kids Page” leads young browsers to information about Florida archaeology, history, and other topics.

http://www.dos.state.fl.us/dhr/museum

Finding Other Museums On The World Wide Web

There are numerous “search engines” to help web browsers find other virtual museums; some of these are listed below. In addition, readers should check page 13 of the last issue of Archaeology and Public Education (Vol. 6, No. 2), which suggests other sites to explore.

Anthropology on the Internet was compiled by Anita Cohen-Williams of Reference Services, Hayden Library, Arizona State University.

http://dizzy.library.arizona.edu/users/jlcox/first.html

Museums on the Internet is maintained by Jim Argus of the Natural History Museum of Los Angeles County.

http://www.lam.mus.ca.us/webmuseums

Archaeology magazine’s link to the WWW provides information on some of the best archaeology sites, including museums.

http://www.he.net/~archaeol/index.html

Museum Online Resource Review features museums, related institutions, and other WWW sites of interest.

http://www.okc.com/morr/

Yahoo provides links to museums and many other sites.

http://www.yahoo.com/Science/Anthropology_and_Archaeology

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The Power of Informal Learning...

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receive and process the information, or not. Good teachers
direct and guide students to actively practice the skills and
knowledge they are learning, yet again the learning is
teacher-determined.

Now open up the walls, and picture learners visiting a
museum or an open-air archaeological exhibit. In these set-
tings learners move at their own pace, in any direction, paus-
ing to view, talk about, touch or interact with exhibits and
features in any way they choose. The behaviors these learn-
ers engage in are interactive. Learners become engaged with
signs, people, displays, objects, and ideas. The design of path-
ways for learners is important, yet educators in informal set-
tings must “live with” the fact that they rarely want to force
people to follow one path. That means exhibits and signs
cannot usually build on each other in a linear fashion. In-
stead, messages can be encountered by learners in different
forms in different exhibits, so the ideas build on each other,
but not in a particular order.

Learners in informal settings often learn by directly ex-
periencing objects, exhibits, or programs, rather than expe-
riencing mostly symbols, such as text. Their exposure is also
very short. We have watched visitors view exhibits for as
short as two seconds to as long as five minutes or more, but
usually even a great display holds learners for about 30 sec-
onds. The question, hook, or title must have enough “punch”
to hold the visitor long enough to process a message.

Learners in informal environments may see exhibits in
any order, for as long as they like, and in any way they like.
However, when they want more information, they are highly
motivated because they want to learn more and will work a
bit to get it. It is important that the information is provided
for them. Although they will read good signs that attract
them and hold their interest, they do not come to informal
environments to spend the bulk of their time reading signs,
but to enjoy the experience. Educators tend to be highly text-
oriented, while visitors are not. Good interactive exhibits
often provide additional deeper or more detailed information
in layers, using flip-up panels, for example. In some muse-
ums, learners can access more information using a
nearby computer, or they can check out books or materials
to take home. They thus experience deeper learning through
their own motivation.

Another contrast with formal environments is that learn-
ers in informal settings are often social learners. Visitors come
to these environments in social groups; they come with their
families, friends, or schoolmates. Therefore, the learners in
informal settings are of all ages, from kids to adults. Rather
than being forced to remain quiet or engage only in talking
about projects in a directed learning activity, learners in in-
formal settings talk about anything and everything with each
other. They often can be heard relating the object or exhibit
with their own experience, calling their companions over to
“see this,” or to find out, “Hey, did you know this?”

While goals and objectives in both types of environments
often involve “learning,” the objectives in formal education
often are cognitive, including verbal information as well as
intellectual skills and knowledge. While cognitive outcomes
may be taught in informal settings, the emphasis is more
often on changing attitudes and motivating learners about a
topic or area. The quality of the experience is emphasized.

Because the goals are often attitudinal and process-
or experience-oriented, measuring learning in informal settings
often is done differently than in formal settings. “Tests” are
rarely used. Rather, we observe visitors’ interactions to see
whether they are attracted and held by exhibits. We inter-
view or survey learners to determine the messages they take
away. We want mainly to know whether the informal learn-
ing environment “touched” the learner. Yes, we do hope they
remember some basic information about what they saw,
heard, or touched. But we really want to know other things:
Did their attitudes change as a result of their experience? Do
they view the world differently now? Were they moved by
the experience? Do they plan to take any actions in their own
lives as a result of their experience in our informal environ-
ments? If so, we have succeeded.

Hardest sometimes for educators in informal settings to
accept and build on is that visitors come for FUN. The joy of
designing educational experiences for informal environ-
ments is that we can count on learners who want to learn,
even if they do not think of using that word. Surprisingly
and powerfully, I have found that visitors say their major
reason for visiting a trail or exhibit is “curiosity.” In a result
that at first bothered us, and then delighted us, we found
that visitors called this informal environment both fun and a
good learning experience. We are fortunate indeed to have
the power of informal educational settings in our hands.

Wilhelmina C. Savenge is an associate professor of learning
and instructional technology at Arizona State University,
Division of Psychology and Education, P.O. Box 870611, Tempe, AZ
85287–0611; (602) 965–4963.

Partnerships...

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Educators who want to involve schools in their museum
programs have several options. The targeted audience of the
museum should be taken into consideration. If the museum
is located in a metropolitan area and the audience is the en-
tire area, the approach might be to provide programs appro-
priate to certain age levels. If the museum is in a smaller
town or has a very specific audience, the museum might
choose to involve the school personnel in the development of
programs just for them. There are several ways to contact
schools. Museum staff can go directly to the top and ask to
meet the superintendent, who may allow a presentation by
the educator to the principals and curriculum coordinators.
Working closely with teachers in the district who are inter-
ested in coming to a museum also can be effective. As teach-
ers bring their classes, it is important for the museum to de-
velop a mailing list to remain in contact with these educa-
tors. It also is possible to invite teachers to sit on committees
to assist the development of new or the evaluation of exist-
ing programs.

Museums can provide fun, interesting, and educational
experiences for teachers and students. Developing partner-
ships between museum educators and teachers is well worth
the effort.

Anna Johnson is curator of education at the Tempe Historical
Museum, 809 E. Southern Ave., Tempe, AZ 85282; (602) 350–5105.
1996 SAA Meeting Highlights

The largest annual meeting in SAA history was held April 10–14 in New Orleans. Nearly 3,000 people attended more than 180 symposia, poster sessions, workshops, and sponsored forums. Session topics ranged from research on Maya warfare to applications of remote sensing and computer modeling in archaeology.

The SAA Executive Board sponsored three sessions focusing on relations between archaeologists and Native Americans. A special forum on Washington politics and archaeology asked, “Why do politics matter?” and “What can we do to build grassroots support of archaeology?” SAA Webmaster Jonathan Lizee displayed the SAA World Wide Web page and showed how articles and lesson plans from Archaeology and Public Education are featured.

A half-day session entitled “Should Kids Dig? The Ethics of Children Digging in Real or Sand Box Sites” attracted a large audience to hear perspectives on integrated learning, scientific inquiry methods, simulated digs, and alternatives to excavation. At the public session on Saturday, a Public Education Recognition Award was given to producers and writers of the Paramount Network Television series “Star Trek Voyager” and “Star Trek: The Next Generation” for “their outstanding contributions to improved public understanding and appreciation of anthropology and scientific archaeology.”

An Archaeology Week poster contest was held for the first time, in conjunction with the public session. Conference and public session participants selected the winners, which were: 1st place—New Mexico, 2nd place—Texas, and 3rd place—Wyoming.

During the annual business meeting, Presidential Awards were given to four individuals for their efforts to bring archaeology to the widest possible audience. The recipients included:

- Brian Fagan, for “sharing with the public the joy and wonder of genuine archaeology”;
- Jonathan Lizee, for “developing [SAA’s] new World Wide Web site”;
- SAA Public Information Officer Toni Moore, for “ensuring that the most current archaeological research becomes accessible to the public”; and
- National Geographic Society Archaeologist George Stuart, for “writing and producing … Your Career in Archaeology and Archaeology and You.”

In addition, President Bill Lipe presented a farewell gift to outgoing Executive Director Ralph Johnson, appointing him “honorary archaeologist.”

The Public Education Committee held its annual meeting on Wednesday, with about 35 members attending all or part of the day-long session. Subcommittees reported on ongoing projects and new initiatives. The committee welcomed Dorothy Krass in her new role as SAA’s manager of public education. Committee changes include Shelley Smith replacing Phyllis Messenger as vice chair and Megg Heath replacing Shelley Smith as chair of the Precollegiate Education Subcommittee. Chris Pierce took over the helm of the Awards Subcommittee. Amy Douglass joined KC Smith as coeditor of Archaeology and Public Education.

A meeting of Public Education Network coordinators drew about 30 participants who serve as liaisons for their state or province. Coordinators received materials to distribute locally, including copies of the new SAA public education brochure, “Reaching Kids Through Archaeology,” and the Archaeology and You booklet.

Deadline for spring issue: January 6