



The Education Station is designed as a pull-out section of resources and information for archaeology educators

Lesson Plans

KEY TO CLASSROOM CONTENT

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Lesson plans are not just for teachers. Any experience that imparts knowledge to a group is a form of lesson. A lesson is an experience through which useful knowledge is gained. An effective lesson focuses on a few key objectives and identifies the thinking skills, materials, and procedures to be used during the activity. It also is directed at a specific audience, whose skill levels and daily experiences are known to the presenter.

Let's say that your child's 4th-grade teacher knows that you are a historical archaeologist. The class is studying state history and prehistory. You are asked to talk for 45 minutes about archaeology during the history period.

How do you present your knowledge to students, especially if you don't have a degree in education, and you're not sure what they already know? First, don't take the word "talk" too literally because talking isn't the only means through which you can impart information. Plan a hands-on activity that will make your presentation a sure-fire learning success.

For example, a hands-on activity might allow students to work on their own: give each student a pot sherd and a magnifying glass and ask the kids to discover details about prehistoric pottery. Alternatively, the class might be divided into teams, with students in each group deciding cooperatively on a hypothesis for the use of an unfamiliar artifact. Or the whole class might participate in a playground activity to experience the procedures in an archaeological survey.

Regardless of the chosen arrangement for participating, the steps and activities involved in the presentation need to be organized. As a classroom educator, you need a plan. The plan is a method, scheme, or design for attaining your objectives. Your objectives—what you want students to gain from the learning experience—give direction to the plan.

When the teacher invites you to visit the class, ask what she or he would like students to learn from the experience. Determine the students' skill levels and briefly outline the content of their studies. Because the entire topic of archaeology would be too overwhelming, select one concept area to cover. "Archaeology is an integrative, interdisciplinary field. The study of archaeology can address some of the concerns

of educators today—namely, scientific inquiry, problem solving, observation-inference, cooperative learning and citizenship skills" (Smith et al. 1993). There is a wide spectrum of possibilities for using archaeology in the classroom.

As the invited archaeologist, get to know your audience. What is the "here and now" for these 4th graders? What are their daily experiences? What are their clothing fads? What are their favorite foods, games, TV shows, books, sports, and clubs? This information will help to relate what you present in their language, and it can help you to illustrate your points. Since you have a 4th-grade child, you may have a good idea of the answers to some of these questions. If you do not have your own children to relate to, you may want to seek help from the teacher.

Let's say that, when you last visited the school, you noticed that your child's classmates were really into playing marbles. Playing marbles was an everyday experience for these 4th graders. It was their here and now. And let's suppose that you have access to a collection of marbles uncovered at various historical sites. Why not use marbles as the artifact in the hands-on experience?

The challenge now is to narrow down the broad field of archaeology to one specific archaeological learning experience that would include marbles. Looking back, you recall that the words "opaque" and "transparent" were on your child's spelling list. These words would fit beautifully if the marbles were analyzed and described on an analysis sheet. Now your objectives need to be clarified and the procedures for carrying out the activity listed. What knowledge or outcome do you want the students to have? Once you have your objectives and lesson activity planned, consult with the teacher to see if it is feasible for the class.

The following pages (pp. 8–9) provide a template for planning a hands-on classroom lesson, using marbles as a means of introducing an archaeological concept.

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HOW TO CONSTRUCT A Good Lesson Plan

A Complete Line of MARBLES
Everything that sells—from the common gray shooters to the big brilliant "spanglers." Note what a very profitable return can be gotten from a small investment.

AMERICAN MARBLES.		IMPORTED MARBLES.	
	2F14. Common Gray American Marbles—Compare in size and weight with others. 1000 in bag, ask of about 50M. Per M. 15c	Approximate sizes: 00, 1/4 in.; 0, 1/2, 1, 1/4, 3/4, 1, 1 1/4, 2, 3, 4, 5, 1 1/2, 6, 1 1/2, 7, 1 1/2, 8, 1 1/2, 9, 1 1/2, 10, 2	
	2F15. Common Polished American Marbles—Ass'd. colors. Put up as abovecases of about 50 M. Per M. 17c	Painted China Alleys— Beautiful goods.	
	2F16. Imported Polish-Genuine Stone Marbles—Ass'd. colors and sizes. 1000 in bag. Full count. Per M. 67c		2F17. 00—500 box. \$3.25 (in case lots 50M, 21c.)
	American Onyx Marbles—Each and every one perfect. A variety of colors.		2F18. 0—500 box. 35
	2F75—Size 1/4 in. 100 in box. Per 100. 45c		2F19. 1—500 " Per 100 50
	2F76— " 1/4 " 100 " " " " 100. 50c		2F20. 2—100 " " " " " 50.08 72
	2F77— " 1/4 " 50 " " " " 100. 70c		2F21. 3—100 " " " " " 11 1.00
			2F22. 4—50 " " " " " 18 1.50
			2F23. 5—50 " " " " " 24 2.00
			2F24. 6—50 " " " " " 32 3.00
			Imitation Agates—Also called crackers. Ass'd. brown and 1/2 blue.
			Size Per 100 Per M
			2F37. 00—500 box. \$3.47
			2F38. 0—500 " " " " 40

LESSON TOPIC: AN ANALYSIS OF MARBLES.

Lesson Overview

The lesson overview provides a brief description about the topic, nature, and purpose of the activity.

To demonstrate what happens to artifacts in the lab, students will be given bags of historic marbles, analysis sheets, and calipers to measure the diameter of the marbles.

Objectives

Objectives identify what you want students to know, comprehend, be able to apply, analyze, synthesize, or evaluate from the lesson experience (Bloom 1956). Objectives often are stated in terms of the desired outcome, i.e., *Students will . . .*

Students will understand that the description and comparison of the different marble sets represent important steps in archaeological analysis. Through this process, information will be acquired about the social history of marble playing; for example, no matter where or at what time they lived in the state, children played with marbles.

Subjects/Skills

Subjects refer to the disciplines addressed by the activity. Because archaeology is so interdisciplinary, it offers myriad opportunities to enrich lessons in virtually all subject areas. Skills refer to the thinking skills used in the learning experience. One of archaeology's great benefits is its ability to enhance critical thinking skills.

- Science, mathematics, history
- Analysis, comprehension, comparing, contrasting

Class Size/Age Level

Class size affects the feasibility of an activity; for example, larger groups need more time to accomplish tasks, so an activity should be as simple as possible. In addition, lesson plans usually are developed with a particular audience age in mind, although they often can be tailored to meet the needs and skills of younger or older students.

- Class size: 25 students divided into four groups
- Age level: 4th grade

Time Required

This is the amount of time needed to complete a lesson. A time limitation helps to keep the lesson focused.

In the scenario presented on page 7, the teacher has set a time limit of 45 minutes—which is about the length of most class periods. Regardless of how long you have, try out an activity with children to see whether the lesson is doable in the allotted time. Set up a time limit for each step.

Materials

A list of the materials required for the lesson will ensure that you have everything that you need.

- Four artifact bags containing marbles recovered from four sites—a fort, homestead, ranch, and home in a historic district—with excavation data (site number, date, location, etc.) written on the bag

Each bag should have a different selection of stone, hand-made glass, steel, clay, and machine-made glass marbles. The differences in the sets of marbles will be due to the fact that the sites date to different time periods.

- An analysis sheet, calipers, and pencils for each group
- The analysis sheet should provide spaces for recording the diameter, material, and type of manufacture (hand made or machine made) of each marble in a bag, and include a space for drawing or describing marble design elements. Because the type of manufacture may be difficult to assess, students also may need written resources to consult (e.g., Bauman 1970; Block 1998).

- A key that lists raw materials used to manufacture marbles (clay, stone, glass, metal, and wood), with subdivisions for design and color. The key also should include the manufacture dates of various marble types.

Vocabulary

Define words that are important to understanding the lesson and provide examples using the words to ensure that students comprehend their meaning.

- historical archaeologist, historical artifact, archaeological site, calipers

Background

This is information that a presenter or teacher should know before beginning the lesson. Often, students also need to know the information to complete the activity.

If you are a historical archaeologist, you have the knowledge necessary to present the lesson, although you still need to know about the students (see page 7). If you are a teacher, you should know that archaeologists analyze and research artifacts to learn about cultures and behaviors of people of the past. Before an archaeological site is excavated, a research design is formulated with specific questions and hypotheses that one hopes will be answered and confirmed by data obtained from the site. Artifacts are among the details that help to answer those questions. By identifying the physical characteristics of marbles from different sites, and comparing and contrasting their attributes, information may be gleaned about marble playing by children of the past.

Setting the Stage

This step introduces the lesson, providing the "grabber" that sets the tone and enthusiasm. It can be presented as an activity, demonstration, object of interest, picture, interactive discussion, or pertinent question.

Hold up a plastic bag containing marbles excavated from a historic site. Ask students what they are, and whether they play marbles. Do these marbles look like the ones they use? Explain that these marbles, found at forts, homesteads, school yards, and ranches, were used by children many years ago. Explain that the marbles are historic artifacts because of the time periods in which they were made and used. Define an artifact as "any object made or used by humans," and introduce and discuss the other vocabulary words. Tell students that they will analyze the marbles to learn about them and the children who played the game in the past.

Procedure

Define each step that will be taken to present the lesson activity.

Divide students into four groups, placing each team at a separate work station. Redefine the term "historic artifact" and show some examples. Explain the data recorded on the artifact bags and distribute a lab analysis sheet to each group.

Explain that each group will analyze marbles from different historic sites, and demonstrate how students should accomplish each step of the analysis. Be sure that they know

how to use the calipers. Tell teams to decide among themselves who will be responsible for the different analytical tasks. Each group also should choose a reporter, who will list the marbles that the group analyzes, the sites from which they came, and the basic characteristics of each marble that the students record on the analysis sheets.

When the analysis is complete, explain that, at this stage, a real archaeologist would compare and contrast the analyzed sets of marbles. As each team reporter shares details about the group's findings, chart the information on the blackboard. Ask students pertinent questions to prompt their interaction about what can be learned by comparing and contrasting the marble sets. For example, do all four sites have the same types of marbles? If not, how are they different?

Next, lead a discussion about additional information that could be used to gain further insight about the marbles. For example, what information about each site or the other artifacts found with the marbles would be useful? How could the students find out where the marbles were made?

Closure

The lesson conclusion helps the presenter to determine whether the objectives were met.

Ask questions that prompt students to think about the learning experience and the information acquired. Why do you think that the marble analysis was important? What new information have you learned about the work of archaeologists? What have you learned about marble playing in history? Where might you find other details that would be helpful in the marble analysis? Hopefully, the students will suggest going to the library, where they can research not only marble-making and where certain kinds of marbles were made, but also additional information about archaeology.

Epilogue

The most important step of the lesson is for you, the presenter, to have fun along with the students. If you have a good time, the students will as well; your enjoyment will create a good learning atmosphere. Moreover, it will be a learning experience for you as well as the students.

The format for this lesson plan was taken from *Intrigue of the Past: A Teacher's Activity Guide for Fourth Through Seventh Grades* (Smith et al. 1993) and adapted to the A&PE style. The author thanks Mark Hackbarth for his comments and information.

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