

# Everything You Need to Know in Brief

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## OVERVIEW

Conducting an archaeological dig is messy, but it offers fun, mystery, and kinesthetic learning that applies to many academic contexts and subjects. Students work in teams, practice critical and hypothetical thinking, report carefully and ethically, and utilize a host of skills that cross all disciplines, from history and English to science, math, and art.

Digs can illuminate the problems all researchers confront when they must draw conclusions on the basis of insufficient evidence. They can help teachers reveal how cultures have changed through time. Through observation and inference, students learn invaluable interpretive skills in a hands-on context, while having fun and solving a problem. Teachers can incorporate a simulated dig into the classroom to enhance learning on a particular topic, or simply use a dig activity to model and explain social change, historical and scientific methods of research, and analytical ways of thinking.

## GRADE LEVELS

Our cake and shoebox digs are aimed at elementary grades, mostly K-3, and can be adapted for later elementary grades through middle school. The schoolyard dig is suitable for high school students.

## GOALS

### Interdisciplinary goals are to

- + help students practice transferable skills of observation, critical thinking, inquiry, and hypothesis-testing applicable to many disciplines, including history/social science, English, art, science, and math.
- + permit teachers to make connections across disciplines and engage in kinesthetic learning
- + illustrate the importance of context to the meaningful interpretation of data.
- + promote teamwork, sharing ideas, academic honesty, and building on the past work of others.
- + show the distinction between observations (the discoveries we make) and inferences (the stories we make up).
- + engage students in thinking about multiple interpretations.
- + allow for design flexibility, so that teachers can meet their own classroom's needs.

## MATERIALS AND PREPARATION

The teacher must invest the time needed to understand the goals and procedures of archaeology (see Basics of Archaeology for Simulated Dig Users).

In preparing shoebox digs, the teacher will need to acquire a sturdy shoebox for every four or five students. Each box will be filled with one or more layers made identifiable by the inclusion of different colors and textures. Each layer should be thick enough to be identified by students before they dig through it accidentally. The dig site should be built around a story the teacher has in mind, which may vary depending on the artifacts. These can be inexpensive and may include small objects saved up from past projects. Keeping the artifacts culturally-neutral (not representative of genuine cultures) helps students focus on observation and analysis. The teacher can add laminated images or replicas of real artifacts to create a more realistic site and reflect a culture the students are studying.

The teacher will ideally have some adult assistance. Once all the boxes, dirt, and objects have been obtained and lined up, the easiest way to proceed is for the teacher and helpers to complete the lowest layer of dirt and artifacts in all boxes in exactly the same way, and then move up to the next layer. The layers should be packed down quite tightly to resemble the (generally) compact soil of a real dig as closely as possible.

### Make context important

In at least one layer, several objects should be related and the teacher should place them near one another. Parts of a broken artifact can be positioned so that students who dig carefully will see the original connection. Small beads can be arranged to create a necklace pattern. A small circle of pebbles with a fragment of charcoal inside it can represent a fire pit. The teacher might also put a mystery artifact in a layer of each box.

For older grades, the teacher can increase complexity, emphasize teamwork, and ask students to participate in the planning and design of dig sites. One option is to leave some objects out of certain boxes so that it is only possible to learn about all the finds if teams share information. Alternatively, different

shoeboxes can represent different areas of a site altogether. Teams or classes can design the digs for other teams or classes and exchange dig sites, or they can design shoeboxes for the following year's students.

### Materials for shoebox digs

See individual lessons and Basics of Archaeology for Simulated Dig Users.

Materials will include plastic or cardboard shoeboxes, sand, soil, and dirt, ideally of different textures and colors, additives with a distinctive odor or texture, a pre-selected number of artifacts of different types for each layer, sugar cubes, clay, or plastic building blocks to create features (if desired), artifacts, such as fake coins, miniature plastic objects, beads, fake gemstones, dried pasta, popcorn, marbles, replicas of artifacts and/or laminated images of artifacts, and other small objects the teacher has at hand that can be woven into a story.

Work tools include plastic sheets or tablecloths, spoons or miniature trowels for digging, brushes, containers for excavated dirt, small plastic bags to hold artifacts, waterproof black markers for labeling, clipboards and pencils, and a top plan and record sheet for each layer (see Record Sheet 1 and 2 for full-page samples)

### CLASS TIME

Depending on the number of students and teams, filling the boxes and cleaning up afterward may take more than an hour each. Excavating and recording will take several hours. Length of discussion time is up to the teacher.

### PROCEDURES

The teacher should introduce some finds from the site and then have students excavate properly and infer the history. (Read the relevant lesson thoroughly.) Archaeologists dig carefully, working horizontally to uncover and record all associated finds. Understanding the importance of context is essential to these lessons. Students experience in a kinesthetic way how excavating an archaeological site destroys it, so that afterwards there is no possibility of checking information not recorded.

Explain how archaeologists know about the site (perhaps through records and surface survey). One way to begin is by revealing several finds that have turned up in a farmer's field in this area; students should discuss what they expect

to find and generate hypotheses to test as they excavate. Some finds may seem contradictory, and these should lead to discussion of multiple uses of a site or changes in activities through time.

The ultimate story of the site should be reflected in the dig: by the associated finds within layers and by simple examples of cultural change between layers. The site's history can be modified based on the available artifacts, the students' ages, and the degree of complexity desired. Stress how important it is for archaeologists to separate observations ("facts") from inferences (invented stories).

### PITFALLS

Sand and loose soil are easier to remove than the hard soil at a real site. Students must work carefully, or the lessons and rewards of excavation will be lost. If the layers contain too many artifacts, these may become confusing, yet too few artifacts mean that not everyone can find something. The teams need to understand that all the members are contributing, whatever their role, and that it is not the main goal of a dig just to "find things." Everyone shares in uncovering and interpreting the puzzle that is the site.

### ASSESSMENT

The teacher should design a series of questions about the layers for teams to answer, so that students can be rewarded for their careful observations and analysis. The questions should help students recognize the value of the information they gain from artifacts evaluated in context.

### SUMMING UP

All the teams come together to share their conclusions and show the accuracy and care they maintained during excavation. Students should start by discussing how information can be lost by carelessness. In the real world, a dig ends with questions that are still unanswered and reconsideration of hypotheses that were not validated.

### FOLLOWING UP

As a subsequent activity, students can be asked to design (on paper) the possible stratigraphy under their school. They can imagine or actually research, with assistance, life at the school site before the school was built. Older students may continue their analytical thinking by studying the AIA's *Mystery Cemetery*, drawing conclusions about the site (Map 1), then checking their ideas through further excavation (Map 2).