

# Schoolyard Dig

## A Life-Size Simulated Excavation

by Shelby Brown (J. Paul Getty Museum)

Students will become archaeologists and uncover part of a single-layer, one-period site. This dig works well with students in middle school through high school. Unlike small-scale portable digs (*Layer Cake Archaeology*, *Transparent Shoebox Dig*, and *Shoebox Dig*), this dig simulates a full-scale excavation and requires space and considerable planning.

**Acknowledgements:** This simulated dig owes a great deal to the many archaeologists who have brought archaeology into schools. Special thanks go to AIA member Craig Lesh.

### Overview

A schoolyard dig teaches basics of archaeology, including excavating horizontally (rather than digging holes), keeping records, and preserving the context of finds. In a large-scale dig, one layer provides a manageable first exposure to archaeological practice. The lessons in observing, recording, drawing, writing, and analysis are applicable to many disciplines. Adding culturally specific artifacts or laminated images makes the excavation relevant to even more fields.

- Teachers can modify the site to suit their classroom goals and areas of study. Since archaeologists generally use the metric system, the teacher might want to do so.

Surface finds supposedly from nearby farmers' fields and/or partial excavation of the site allow students to hypothesize about what they will uncover before they begin to dig. They take on different roles as excavators, recorders, and draftspersons, sieve the dirt (if feasible), and interpret the site, ending with a report and/or a group conversation about their conclusions and their remaining questions. The teacher, who knows the story of the dig (such a seer unfortunately does not exist on a real excavation), can explain the invented history of the site.

### Grade levels

The dig is designed for middle through high school. The teacher can modify the complexity of the site or the record-keeping to suit the ages and abilities of the students.

### Goals

Students learn archaeological skills as they experience first-hand the fact that excavating an archaeological site destroys it. They record as they dig, and the dig ends with discussion of what they observed and why it is important to excavate and record the objects all together rather than pick them out as they find them. Conversation will reveal how carefully the

students excavated and validate the importance of collaborative teamwork and critical thinking. Students should draw conclusions without accepting them as facts, and they should think of multiple explanations for the evidence.

*Interdisciplinary goals are to:*

- help students practice skills of observation and inference, critical thinking, and inquiry applicable to many disciplines, including science, social science/history, and art.
- illustrate the importance of context to the meaningful interpretation of data.
- promote teamwork, sharing, and building on the work of others.
- make observations (things we see) and inferences (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.

*Archaeological goals are to:*

- make excavation strategies clear and relevant.
- illustrate how gaps in evidence happen.
- show that careless work can affect interpretation and destroy context.
- emphasize that archaeology's aim is to learn about the past, not just find things.
- teach students how to measure, draw, and read a top plan.

### **Time needed**

Depending on how the site is designed and how much dirt needs to be removed, the project can take the students several hours of class time spread out over multiple days and require several adults to assist (and to remind excavators not to dig holes, and to record properly).

Discussion of the dig and follow-up questions and answers will also take at least another hour or more of class time.

### **Materials and preparation before digging**

The teacher should read *Basics of Archaeology for Simulated Digs* and the *Shoebox Dig* lesson.

This dig requires schools or property owners to permit a simulated excavation on their land. Time for planning is essential. Someone must prepare the site, including surface cleaning, laying out excavation squares, and neatly digging out compact soil down to about 8 inches (or 20 cm). The bottom is seeded with artifacts and then the soil is put back and compacted (by hand and foot pressure). The side walls of the excavation area must be vertical (see Pitfalls).

A 5'x 2' long excavation site with enough room along the edges for students to stand, sit, or kneel is recommended for 10 students, so that each student will have a square foot—or a minimum of 30 x 30 cm—in which to dig.

An excavator and recorder can work together. The site will require equipment and tools whose cost can add up, so some should ideally be borrowed or re-used over the years.



**Left:** An excavation unit is gridded with string attached to nails. Students discuss their first finds. Note that the soil is not very compact. Students will need to brush the finds carefully as they emerge.

**Right:** Soil is gently shaken on the sieve as it is excavated and small finds are revealed on the screen.

### *Excavation supplies:*

- Cheap flat, pointed mason's trowels (not gardening trowels) for excavating
- Paintbrushes, large and small, for brushing dirt off finds still in the ground
- Containers for excavated dirt
- Small plastic bags to hold the artifacts
- Waterproof black markers to label the bags
- Rulers and measuring tape
- Pencils and clipboards
- Artifacts and/or laminated images of artifacts
- Wheelbarrow, shovel
- Plastic storage bin for tools and to hold finds and records from each square
- Sieve or screen (several square feet) to check for small finds
- Camera (a cell phone is fine, if feasible, for taking pictures of objects and the dig.

### *Examples of artifacts:*

- Fake ancient or real (modern, not ancient!) coins
- Plastic and ceramic dishes and pots
- Plastic and metal tools
- Objects being made (wood, etc.)
- Dried pasta
- Popcorn, fruit pits, bones
- Beads and fake gems

### *Examples of features (non-portable human-made structures)*

- Broken wall of stones or bricks
- Hearth or fire pit of stones (with charcoal or wood inside)
- Shallow pit lined with stones or plaster

*Planning the content of excavation squares*

The teacher can design, or one class can design for another class, the layout and content of the squares to represent either part of one larger area or two different work or habitation areas in roughly the same location. The teacher may leave some objects or pieces that join in different squares so that inferences are most effective if teams share information.

Several objects should be related to tell a story (place them near one another). Parts of a broken artifact, once joined, may help students understand its original function.

- Small beads from a necklace can be arranged in a circle, cherry pits left outside a bowl fallen on its side, olive pits placed inside as well as near a jar for olive oil. A circle of stones with charred wood in the center might represent a camp site, and a group of objects near a fallen shelf might explain the function of a room.

*Inventing the story*

The dig site should be built around a story. The site can be culturally specific or neutral. Simple features can be created from bricks, cement pieces, or stones. Replicas of genuine artifacts can enhance the site and make it more relevant to topics being studied in class, and laminated images of real artifacts may also be substituted. For fun, the teacher can include mystery artifacts to show that finding missing pieces (or explanatory texts) matters.

*Partial excavation*

Once the artifacts and features have been set out as planned, the square is filled back in with dirt, and the dirt is vigorously tamped down. If the dirt excavated from the squares during preparation of the site is too rocky or debris-filled, potting soil is a good substitute. Students may be confused by many small rocks and twigs and spend time recording them.

*Gridding the site*

Once filled in with soil, the site will be divided into grids using nails and string. Set the nails back at least 5 inches from the square's edge since they can loosen. If the string sags or breaks, the string lines should be repaired since they assist in proper drawing and recording.



Students re-tie broken grid string. Recorders hold record sheets on clipboards. An easel with paper permits students to draw an ongoing plan of the whole site.

***An aside: Why not a sand pit? Making context important***

Many would-be excavators have worked with sand or sandy soil. Sand is too fine and slippery to keep objects in place, and most lessons about context are lost as objects move around in the sandy matrix, even during digging. The result is that the relationship of specific objects to one another is lost.

What an archaeologist wants students to learn from an excavation is the important relationship of artifacts in a layer—to each other and related features and to finds in layers above and below. If realistic digging strategies are not a classroom goal for lack of time or materials, the teacher can lay out some “already-excavated finds.” Students can organize the artifacts, see if any broken pieces join, and infer their original contexts (kitchen, work room). (See the AIA lesson *Trash Talks*.)

***Recording is essential***

The teacher should design top plans and record sheets based on the dig goals, the age and number of students, and the number of artifacts. See *Sample Record Sheets* for simple, full-page examples. Photographs at different stages of excavation are standard. Digital recording is too, but many schools will not be able to rely on technology.

***At a minimum, recording supplies are:***

- a record sheet designed by the teacher and requiring (in a simple version) a list of artifacts with notes, or (in a more complex version) a description and sketch of each artifact, and notes. **Young children may report orally rather than record.**
- a top plan or a sheet of graph paper with a square or rectangle already drawn on it to represent the excavation square.

As an alternative or addition to individual top plans, the teacher can set up a stand or table with large sheets of graph paper (an “architect’s top plan”) representing the squares at the site. Teams add finds to the squares as they dig. Since this is not a multi-layer site, if the finds are not too numerous this system can replace individual top plans for each square. Used in addition to top plans, this overview of the site ensures that everyone can follow what is happening across the site as a whole.

**Preparing to dig: Introducing archaeology and the site**

The class learns basic rules and procedures of archaeology. The teacher can explain how this place is known (old records, survey finds, previous excavation, construction work that exposed artifacts) and begin the dig by revealing the finds or an already excavated or exposed area. The artifacts and thus the story of the site can be modified based on available objects, the students’ ages, and the degree of complexity desired.

Students can discuss what they expect to find and generate hypotheses about the site to test as they dig. The teacher should stress how important it is for archaeologists to separate their observations about the site from their inferences and avoid focusing on only one conclusion. Digging provides new evidence.





Students measure and record finds.

### Digging

There are 5–10 students working as a team in a 5' x 2' excavation area, with room for one student per square if there are ten one-foot squares (or approximately 30 x 30-cm squares). Working with larger students will require larger squares or fewer people per square.

Students need to dig carefully and avoid stepping into their squares and onto the artifacts.

Depending on the number and age of the students, the teacher assigns roles or students rotate through them (excavator, top plan draftsman, artifact recorder, artifact bagger, sieve specialist). Each team receives top plans and record sheets. Students dig, draw, record, and sieve finds (showing sieved finds' location less precisely on a plan) and put artifacts into correctly labeled bags.

Although there is not intentional stratigraphy in this one-layer site, objects may overlap or lie at different angles. Even if an object needs to be removed in order to reach another one, students should leave it in place until it has been recorded.

If there are several dig areas, everyone should take turns visiting the whole site, watching the other teams, and seeing finds in place.

### Pitfalls

- Loose soil is messy and easier to remove than the hard soil at a real site (although it should have been compressed as much as possible). Students' clothing can get dirty.
- If two different groups rotate through the same site, cleanup, re-seeding and re-filling the squares will take time and adult assistance. Teams will not all excavate the same finds at the same pace, so giving two different student groups the same experience will require careful handling.

## OUTREACH AND EDUCATION

- While excavating a large square with compact dirt, the side walls (balks) should be kept vertical and strong. (This may happen naturally with hard soil if the square was dug properly by the dig creators.) Students need to stand and sit safely on the edges of the squares and try to avoid dislodging the grid strings. This is a difficulty of a small, if life-sized, dig.
- On a real site, balks allow the excavator to see the stratigraphy. Sometimes the balk, just like the side of a transparent shoebox dig, reveals that the excavator has accidentally dug through or missed a layer. This is not a problem on a single-layer simulated site.



A trowel and brush sit on the edge of a gridded dig square

### Summing up

Students discuss throughout, and at the end, all come together to share their conclusions. A series of questions about the site (designed by the teacher) will allow them to showcase their teamwork and attention to detail. Individual teams may answer some questions while the whole class will answer others. Ideally students will recognize the value of the information they gained from artifacts evaluated in context. They can make educated guesses about the site, the people who lived here, and the information that is still missing.

The teacher, who magically knows the full story of the site, can reveal its history, show how proper digging helped uncover the evidence, and point out that some questions can simply not be answered by what has been excavated. In the real world, a dig usually ends with questions.

### Assessment

It can be difficult to grade an excavation project on results, since it is acceptable for students to make mistakes and learn from them. The teacher can instead assess the care and thoroughness of recording and note students' ability to separate inferences from observations.

**Following up**

Older students may continue their analytical thinking by studying the AIA's *Mystery Cemetery*, drawing conclusions about the site (Map 1 and photographs) and then checking their ideas after further excavation (Map 2).

**Resources**

AIA's *Basics of Archaeology for Simulated Digs*

Coan, J. 1999. *Digging into Archaeology: Hands-On, Minds- On Unit Study*. Pacific Grove: Critical Thinking Books & Software.

Cochran, J. 1999. *Archaeology: Digging Deeper to Learn About the Past*. Nashville: Incentives Publications, Inc.

McIntosh, J. 2000. *Archeology*. London: Dorling Kindersley Ltd.

Moloney, N. 1997. *The Young Oxford Book of Archaeology*. Oxford: Oxford University Press.

White, J.R. 2005. *Hands-On Archaeology: Real-Life Activities for Kids* (Grades 4–10). Waco, TX: Prufrock Press.

**Online**

AIA and *Archaeology Magazine's* Interactive Digs:

<https://www.interactivedigs.com/>