

Thinking Outside the Sandbox: Teaching the Whole Process of Archaeology

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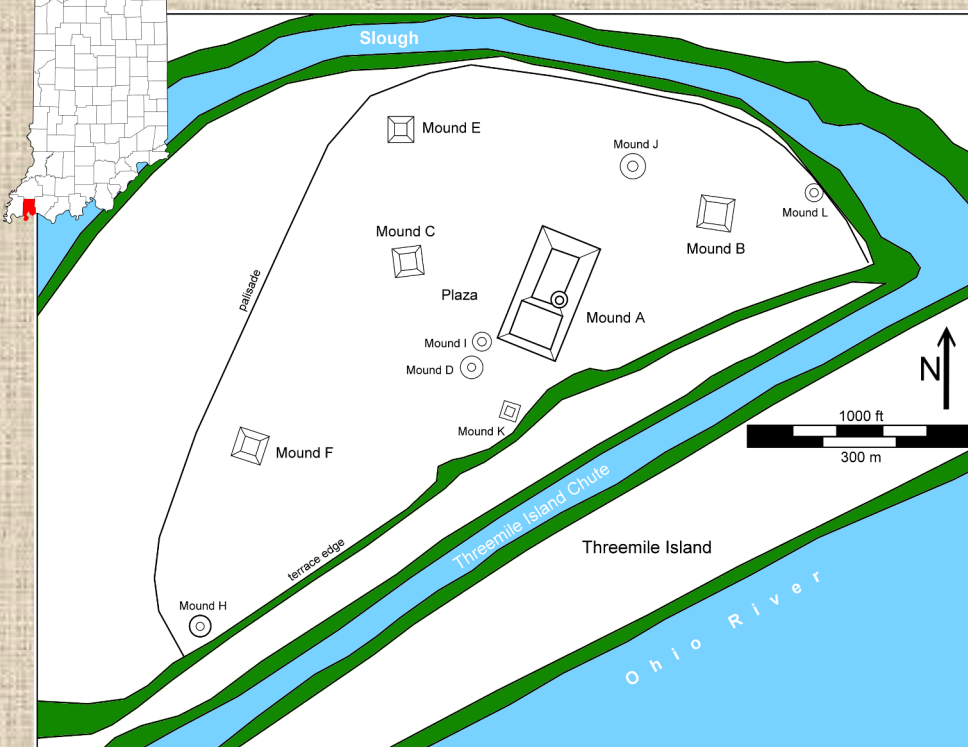
Introduction

Every spring, Angel Mounds State Historic Site in Evansville, Indiana, hosts "Archaeology: Culture Scene Investigation" ("ArchCSI"), a field trip program for area sixth and seventh graders that introduces them to the scientific dimensions of archaeology at a major prehistoric Native American town. In the past, the centerpiece of the field trip was a visit to Indiana University's Glenn A. Black Laboratory of Archaeology's undergraduate field school at Angel Mounds.

However, IU did not sponsor excavations on site in the spring of 2014, so the decision was made to restructure the program around a sandbox excavation. The sandbox excavation, where participants "excavate" a simulated archaeological site under controlled conditions, is a time-honored method of teaching archaeological methods to students. However, it reinforces the widespread misconception

that all that archaeologists do is dig to recover artifacts. To dispel that myth, we simulated several other stages of archaeological research as well.

Students were divided into groups of roughly 20, and each group progressed through the six activities together, moving forward every 20 minutes. The entire program thus lasted two hours. As groups began or finished the program every 20 minutes, they moved to a series of other hand-on activity stations such as flint knapping or atlatl spear throwing.



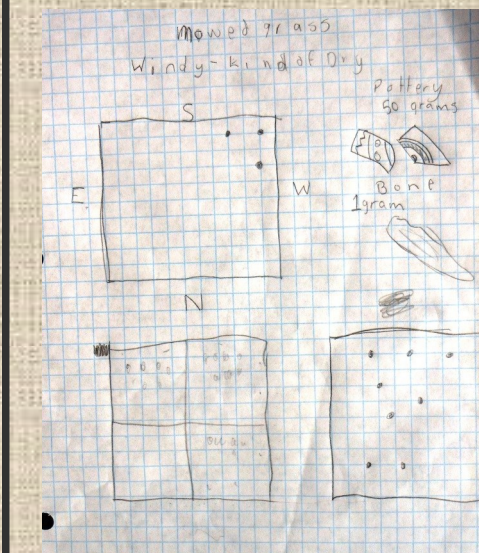
Angel Mounds State Historic Site

1. Site Survey

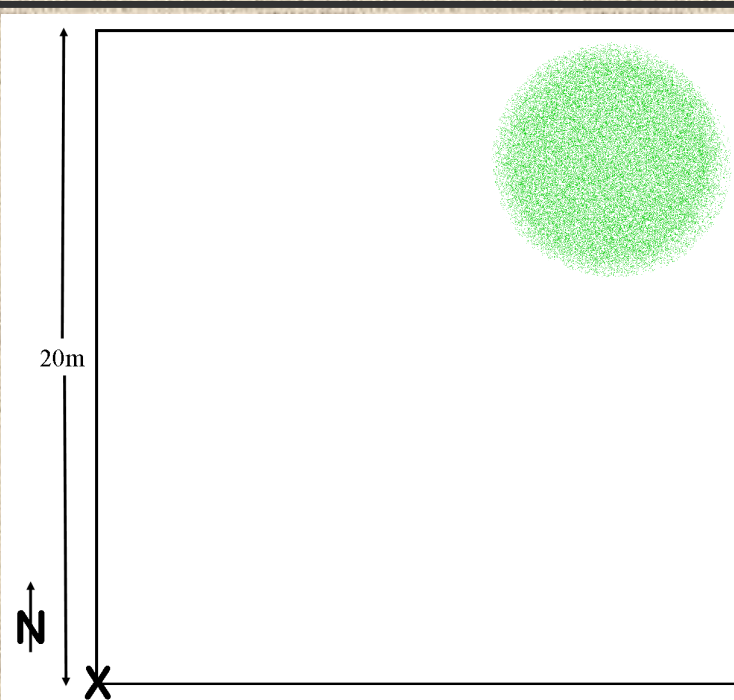
- Goal:** Teach students the methods and techniques for locating archaeological remains.

- Setup:** A 20m x 20m "survey area" was marked off. Near one corner of this area, we scattered a variety of artifact reproductions from Angel Mounds' teaching collection.

- Station Intro:** Staff discussed with students the goals of archaeology, and explained how discovering sites is an essential first step. We discussed how environmental and landscape concerns determined where prehistoric people's lives, and how those same factors can be used to target survey efforts.



Mapping the survey



The "Survey Area"

- Student Activity:** Clipboards and graph paper were distributed, and students drew scale maps of the area. Then, as a group, they walked transects across the square, and mapped where artifacts were located.

2. Surface Collection

- Goal:** Demonstrate how archaeological remains visible from the ground can indicate past activities.

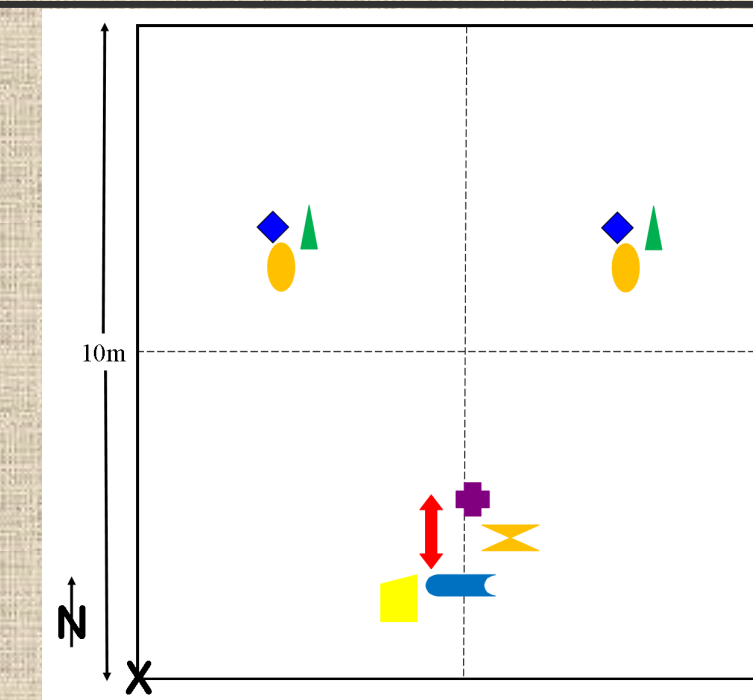
- Setup:** In a new location on the site, a 10m x 10m square had been laid out, subdivided into four 5m x 5m units. Teaching collection artifacts were laid out in three clusters. Two clusters had largely the same sorts of everyday artifacts: stone tools, plainware pottery sherds, charcoal, etc. The third cluster had more exotic artifacts: copper, galena, painted ceramics, etc.



Pin flagging artifacts

- Station Intro:** We divided each tour group into four equal parts and assigned each subgroup a 5m x 5m.

- Student Activity:** Each group of students received a large number of pin flags, and flagged each artifact on the surface of their unit, then mapped what they found. We then discussed the kinds of artifacts they located, and what that might tell us about past activities. The staff member guide led the students to conclude that the first two clusters had been the site of largely similar activities, but something different had happened at the third location.



The Surface Collection

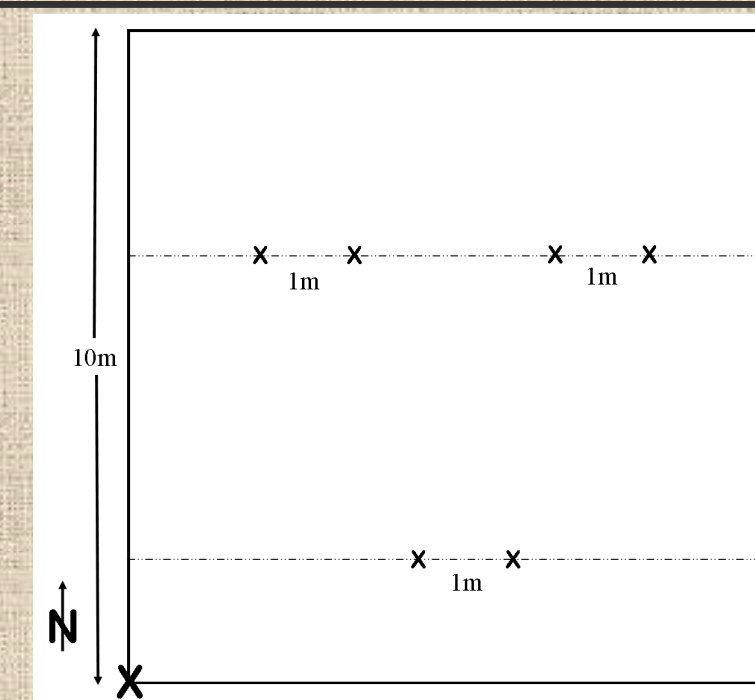
3. Site Layout

- Goal:** Teach how and why archaeological units are placed to obtain certain kinds of data.

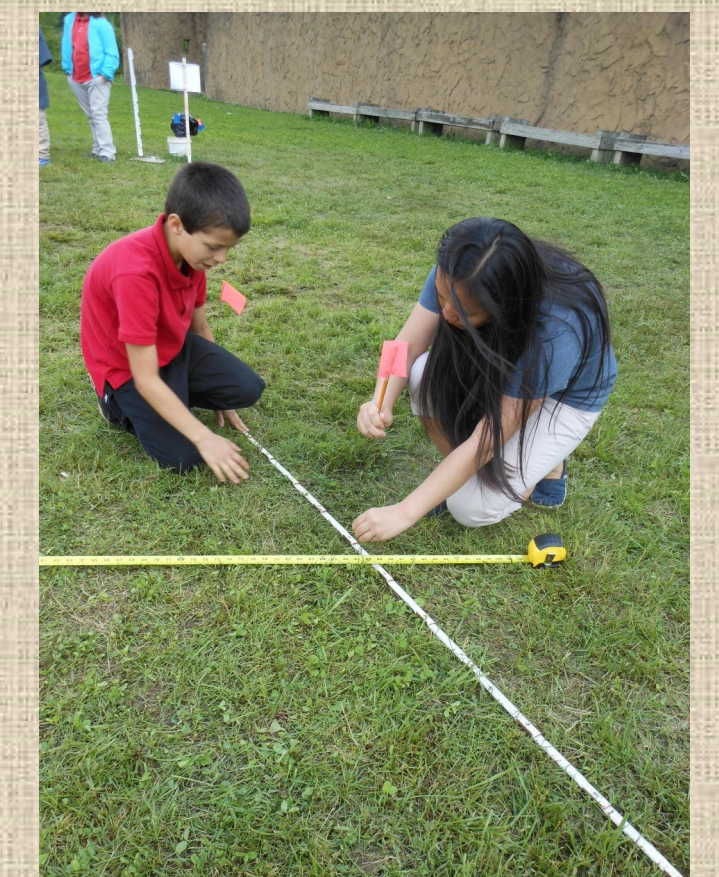
- Setup:** A 10m x 10m unit had been marked out, but without artifacts. Two baselines had been laid out with pin flags, marking points "on grid" from which units could be laid out.

- Station Intro:** Students were reminded that three clusters of artifacts had been "collected" from the surface. However, our "funding" only allowed us the time and resources to excavate two units. Staff members helped the students to recognize that excavating two similar artifact clusters would only provide the same information twice, so the decision was made to excavate one of the two similar units, and the third, different unit.

- Student Activity:** After a demonstration of the Pythagorean Theorem and its relevance, students used tape measures and pin flags to lay out two units on the pre-determined baselines. As before, students were instructed to map their units.

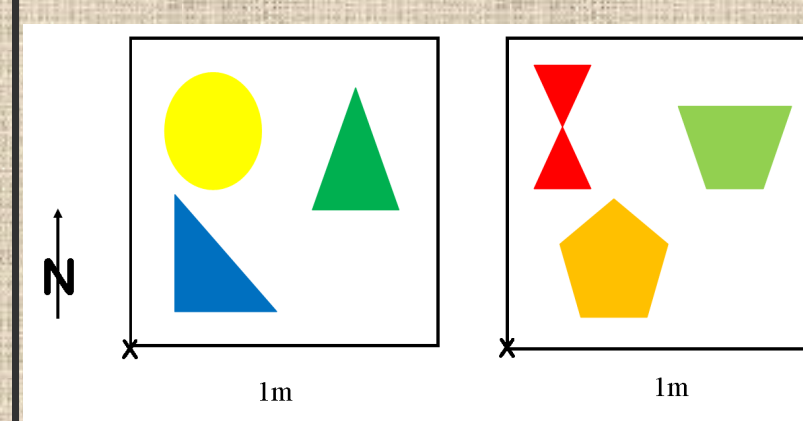


Unit Layout Baselines



Laying out a unit

4. Excavation



Excavation units with different artifact classes

- Goal:** Demonstrate excavation techniques.

- Setup:** The traditional sandbox excavation. Because of the size of our tour groups, we actually used four sandboxes at a time. Two boxes contained teaching collection artifacts that reflected domestic contexts. The other sandboxes contained more exotic, ceremonial artifacts.

- Student Activity:** Students were divided into small groups, and assigned roles such as excavation, screening, and documentation.

- Special Note:** Another tour group would arrive immediately after the last. For that reason, we actually prepared two excavation stations. While students were "excavating" at one station, a staff member was re-burying the artifacts at the other and preparing for the next group.



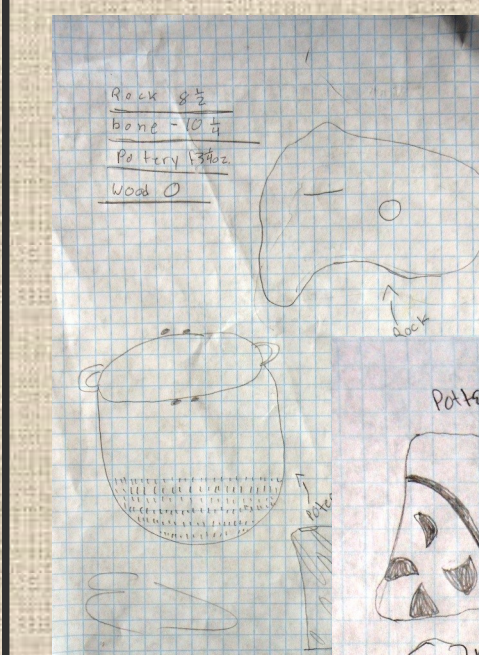
Excavation: The day's highlight!

5. Laboratory Analysis

- Goal:** Show how laboratory analysis can reveal additional information not recorded in the field.

- Setup:** Station five was in the newly reconstructed WPA lab building at Angel. On the lab tables, duplicate artifacts to those just "excavated" had already been laid out.

- Station Intro:** Students were directed to the lab tables with artifacts from the units they'd excavated just before. Staff members explained the importance of careful and complete laboratory processing to provide objective and accurate records.



Student lab records



Lab analysis

- Student Activity:** We then guided the students in sorting, counting, weighing, and otherwise describing the artifacts. Students had access to standard lab equipment, and each group decided which data to record. As always, some students were record keepers.

6. Interpretation and Publication

- Goal:** Build a final interpretation of the "site" and create a plan for that information.

- Student Activity:** In the final activity, each tour group was asked to work together to build an overall interpretation of the "site" they'd investigated. We began by reviewing the steps taken and discussing what each stage of the research taught us about the site. Then, using the details of which artifacts were found where, we helped the students to conclude that this site represented two small domestic spaces next to a third, more ceremonial structure. Every interpretation had to be based on some sort of evidence, and students were encouraged to think about alternative explanations.

Finally, we asked the students what to do with that interpretation. What good was it? This led to a discussion of the importance of publication and education, hopefully emphasizing the point of the past two hours' activities.



Reviewing notes & drawing conclusions

Conclusion

The 2014 ArchCSI activities were intended to emphasize to students that digging is only a small part of archaeological science, while emphasizing the roles of critical thinking, mathematics, record keeping, and other important skills. Following the program, teachers were almost unanimous in expressing their satisfaction, and the sixth and seventh graders also seemed to enjoy the day.

Despite the overall success of the program, there were some lessons learned on our part. First, the activities worked much better with small groups. Group ranged from about 15 to about 30, and smaller groups created less organizational chaos, more participation, and greater learning. With more volunteer staff and supplies, future programs might split students into two paths, with smaller groups going through the same activity at the same time, just at different locations. This, however, would compound the next difficulty.

Teaching collection artifacts did not move from one station to the next, instead staying in place for the next group. Unfortunately, that meant that we needed many more duplicate artifacts than would otherwise be necessary. For example, to have a groundstone axe found on the surface in both of the "domestic" contexts required four axes: two for the survey station, and two for the surface collection station. To have a pot found in "excavation," required three copies: one for each of two sandbox stations and one for the laboratory station. The size of Angel's teaching collection limited what sorts of artifacts students could study.

Even so, the program was a success, as students definitely left at the end of the day with a more complete understanding of archaeological research. We look forward to further refining the program in the future.



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