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This lesson was created by a teacher participating in the Eisenhower Professional Development Project/Elementary and Secondary Education Act Title II grant entitled *Using Archaeology as an Integrated Gateway to Teacher Professional Development*.

Title: Excavating the Trash

Submitted by: Carol Sparr

I teach all academic subjects to fourth graders. We spend a majority of the year learning about Wisconsin in our Social Studies classes. To motivate and hold the attention of my students, I use many hands-on oriented lessons. In this lesson, our class looked at a day's accumulation of recyclable trash from first through fifth grade classrooms, not knowing which classes it came from. After setting up a collection sheet for data, students removed items from the receptacle and recorded their location on the sheet. Inferences were made as to whom the particular trash belonged. There was opportunity to tap into higher level thinking skills, and brainstorming was fast and furious! The students noticed that penmanship was a good clue as to the age level of the class. It was noted that only the younger students have a milk break, hence the cartons in a certain layer. Students inferred that not all classes were careful to throw only recyclable paper in the receptacle. They questioned what would happen to the pop can, staples, and broken crayons when they got to the recycling center. A student volunteered to call the center to find out. Relating this activity to the work of archaeologists was part of the closure, and the written summary that was assigned was a good indicator telling me if students were able to make inferences. Writing is an area we have been working hard to improve in our district, and "real" writing is the best kind. The completed summaries proved to me that students understood the concept of stratigraphy. They were very proud to have learned the meaning of such a "hard word!"

Grade Level: 4-5

Subjects: Math, science, language arts

Objective:	Students will learn the concept of stratigraphy, and how archaeologists are able to learn about the past by observing the layers of soil they excavate, and the relationship between it and the artifacts they find.
WI Standards:	S9, L4, L6, M4
Materials:	-One receptacle of trash from different classrooms, or parts of the school -One piece of bulletin board paper -Markers -Gloves -Meter stick -Student log sheets
Vocabulary:	Stratigraphy, cross-section diagrams, context
Background:	Archaeologists study the layers or stratigraphy of an area when doing a dig. By carefully recording the position of artifacts they find, they can use the data to make inferences about inhabitants of the past. Preserving context of a site is important as without it the puzzle pieces can not be put together.
Setting the Stage:	Discuss how archaeologists carefully excavate an area from the surface down, noting the depth at which an artifact is found in order to be able to make inferences. Explain the vocabulary words which can be related to the references listed in this lesson. Tell students they will be analyzing trash in a receptacle to see if they can learn anything about the people who discarded it.
Procedure:	<ol style="list-style-type: none"> 1. Using a meter stick, measure the depth and width of the receptacle. Using these measurements draw them on the paper. 2. Divide and mark the paper into 10 cm increments, labeling these also on the paper. 3. Put the meter stick in the receptacle if contents is only paper, or stand it up next to the can if refuse is wet. 4. Remove items as volunteers record their position using words or pictures on the bulletin board paper. Relate position/depth of item to interval drawn on the paper. 5. When all items are removed and recorded, students brainstorm and make inferences concerning which class threw away which trash. 6. Students write individual summaries of their results and inferences on log sheets.
Closure:	Students share individual summaries, and tell how the activity can be related to the work of archaeologists. Vocabulary terms are reviewed and applied to the activity. Ask students what would have happened had someone messed up the layers of trash. Would they have been able to

infer what they did regarding the positions of the trash in the container?
Relate this concept to an archaeologist using context information.

Links: Scientific inquiry, recycling lessons, data collecting

Extensions:

1. Older students could precisely map items creating a grid at a particular level of trash.
2. As a math lesson, students could create graphs showing frequency of items found.
3. Relate a map lesson with cross-section diagrams of land areas.

References:

- Digging and Discovery Wisconsin Archaeology*, chapter 1, "Pathways to the Past".
- Copper Culture Burial Site, Method of Excavation*,
www.rootsweb.com/~wioconto/copperculturecemetery.htm