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## Matrix revolutions

### Seymour Middle students dig in for Cornell study



Justin Hart (back left) points out items of interest in sediment matrix taken from the Hyde Park mastodon excavation site by Cornell University to the 8th grade science students of Marian White (back right) at Seymour Middle School in conjunction with the University of Tennessee's GK-12 Program. Photo by David Grimes

*By David Grimes*

It's not often that middle school students can use their own skills to contribute to a scientific study. But thanks to the University of Tennessee's GK-12 Program, 8th grade science classes at Seymour Middle School are doing just that.

Justin Hart and Sara Dean, both students of geography at UT and GK-12 Fellows, have been guiding Seymour Middle School students through the process of analyzing sediment recovered from a mastodon excavation site in New York's Hyde Park area.

The science being done at Seymour Middle School will be used as part of a Cornell University study on the Hyde Park mastodon site, believed to date back to 11,500 BC.

The students search through the sediment, referred to as "matrix", gleaming evidence of plant and animal life from a bygone

age. Their finds are cataloged and sent back for further study.

The 8th graders have already found perfect tiny shells and parts of plant matter in the matrix, taken from the soil around where scientist have excavated the bones of a mastodon. Their work will help scientists better understand the environment in which the mastodon lived and died.

The students are making the most of their opportunity to do real science. Marian White, 8th grade science teacher at Seymour Middle School, who along with Michelle Ballard serves as the school's hosts for the GK-12 Program, told the Times that the level of interest in science careers has been raised by the experience, and students are inquiring about the courses required in higher education to pursue further study.

"They really look forward to it," White said. "Justin always has something to share with them."

White also hopes that the hands-on experience will result in higher science grades and increase TCAP scores at the school.

"If you make learning fun," she said, "you naturally learn more."

The GK-12 Program is a three-year grant which has dedicated nearly \$2 million dollars to stimulate the science curriculum at Seymour Middle School and six other schools in Knox, Sevier, Blount and Jefferson counties. Dr. Sally Horn, professor of geography who has been at UT since 1987, helps to administer the program as a principal investigator, along with Dr. Lynn Champion.

Ten graduate students from UT's geography and earth and planetary sciences departments, known as GK-12 Fellows, each spend ten hours per week working with a specific set of teachers and classes in each school, as well as an additional five in preparation for the classes.

The GK-12 Program is funded by the National Science Foundation, and totals \$1.97 million over the next three school years. Other area schools in the UT version of the program include Northview Middle School in Sevier County, Halls and Holston Middle Schools in Knox County, Carpenter's and Heritage Middle Schools in Blount County, and Jefferson Middle School in Jefferson County.

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