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Math in the City: Modeling ground water cycles based on local data. Preliminary report.

Math in the City is a project-based course for undergraduate students designed to investigate real-world applications in the local community. The current project is centered around modeling the effect of ground water usage on the natural water cycle, using data on well levels in eastern Nebraska. The topic is timely, given the recent drought and concerns about water usage in the midwest. In order to put the data in context and interpret the results, participants in the class are collaborating with an employee at the local Natural Resources District, a Nebraska government agency that handles natural resources management. This talk will cover the design and implementation of such a course as well as results from the recent project. (Received September 09, 2013)