



Science and Math Service Learning Projects that were implemented in a K-12 setting.

Project Title: Preventing West Nile Spread
Community Issue: Educating locals about mosquitoes
Grade Level: 7-12
Number of Visits: 3-5

Middle school and university students work together to educate the community on the seriousness of West Nile. From their initial research they discovered that there is no cure, but that members of the community, if educated, could help prevent its spread. The students created a brochure titled "Back Yard Checklist" for eliminating mosquitoes, which was distributed to houses in their neighborhoods. Other students tested the water near their school for West Nile and reported the results to the Central District Health Dept. Others created a PowerPoint presentation used to educate the students in their school. Finally, a collaboration with the local cable company resulted in a public service video documenting the students' research, actions, and recommendations.

Project Title: Girl's Day in the Lab
Community Issue: Getting girls interested in science
Grade Level: 7-12
Number of Visits: 2

University students help to encourage female participation in the predominantly male sciences by annually sponsoring a "Girl's day in the Lab". In the spring, female university students host a contingent of girls from area middle and high schools for a day of hands-on science experiments and presentations. Female students lead the day's events. For a follow-up, university students conduct a reflection and evaluation with the middle and high school students to celebrate successes.

Project Title: The Toy Factory
Community Issue: Science concepts in Elementary School
Grade Level: 3-6
Number of Visits: 3

University students demonstrated the five models of simple machine functions to elementary students. They then ask assistance of the university students to design and build a toy or game which utilizes one principle of simple machinery. Each student presented his/her toy to the class and had the university students play with the toy while they explained the concepts of simple machinery used in their toy.

Project Title: Got Math?
Community Issue: Real world math connections
Grade Level: Middle School
Number of Visits: 2

College students in an Analytic Inquiry course conduct a 2-day service-learning project on exponents with area middle school students. They developed a car loan project where on the first visit, they teach 7th graders about exponents. On the second visit they have the 7th graders bring in a picture of their dream car and the price to purchase it. Together they go through an exponent exercise to find out how much their dream car will cost to pay it off. The college students then write a reflection paper which has shown that the project has enhanced their own understanding of exponents by teaching the concept to younger students.

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Project Title: Youth-Run Internet Service
Community Issue: Providing internet to Community
Grade Level: 9-12
Number of Visits: 3-5

When the Internet service provider in a rural town decided to leave the community, students at the nearby college collaborated with area high school students to take over the operations. Using the two schools' computer programming and accounting students, the community of 450 was provided with service. This also included the senior center where students were able to assist the seniors with their computer needs. Students also were able to offer wireless service to local businesses. On their final visit, the college students evaluated their project with the high school students and were able to assess their success.

Additional Project Ideas:

- Survey and Statistical analysis for public interest groups
- Environmental modeling
- Operations research
- Running math contests for K-12
- Financial or cost-benefit analysis for non-profits
- Lottery design for fund raising for nonprofit
- Scheduling support

Websites for More Lesson Ideas:

- <http://www.pbs.org/teachers/math/>
- <http://www.pbs.org/teachers/sciencetech/>
- <http://www.thirteen.org/edonline/ntti/resources/lessons/index.html>
- [http://www.servicelearning.org/filemanager/download/176/1328-MathQGfinal 4printing.pdf](http://www.servicelearning.org/filemanager/download/176/1328-MathQGfinal%204printing.pdf)
- <http://www.sde.idaho.gov/ContentStandards/default.asp>