

ALL UNIVERSITY OUTREACH SCIENCE CHALLENGE FOR HIGH SCHOOL STUDENTS

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The Science Challenge is a program in which University professors collaborate with high school educators to help provide a more enriching environment for high school students. The Science Challenge consists of two major components. The first component consists of problem solving. The second component is a selection of challenging physical puzzles. The high school teachers gain insight into what will be required from their students once they reach university level education. They have access to materials for their students which normally they would not have. The students gain from the experience, also. The exposure to college level science courses, use of internet tools and exposure to Michigan State University are among these.

There are two CAPA problem sets. The first set is basic mathematical skills which are perceived as common deficiencies in the incoming freshman class here at MSU and those math skills the high school instructors see as deficiencies. The second problem set focuses on the particular science. This year Biology was added to list of sciences in addition to Chemistry and Physics. The physical puzzles are presented to the students in a "hands-on" fashion. The high school teacher demonstrates the puzzles initially, then let the students experiment with them as needed. The students are allowed to use any reference $\{\backslash$ it except their teacher $\}$ in seeking the solution to the puzzle. The students are then required to work in groups to write a short essay describing the solution to the puzzle. Samples of physical puzzles used this year are:

- 1.) Levitron
- 2.) Nuclear force model
- 3.) Supersaturated NaAc solution
- 4.) Grass grown on a turntable
- 5.) Curie point of magnetism

This year there were 700 students and 13 teachers from high schools in Michigan and Ohio.

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