

Fort Huachuca Schools Receives Grant to Enhance District-Wide Science, Technology Engineering and Mathematics Program

The Fort Huachuca Accommodation School District is one of twenty- seven school districts serving military families recently awarded the Department of Defense Educational Activity (DoDEA) Grant. The district will receive \$1,215,000 over 3 years beginning July 7, 2011 to fund the project entitled, “Catapulting Learning into the 21st Century”. The grant was written by Superintendent, Dr. Ronda L. Frueauff with assistance from Technology Integration Specialist, Mrs. Valerie Quarto and is based on the comprehensive concept paper Dr. Frueauff wrote delineating the Science, Technology, Engineering and Mathematics (STEM) program for the new middle school complex and a proposed small specialized high school for Fort Huachuca Schools.

The grant will provide financial support for the district-wide Science, Technology, Engineering and Mathematics Project (STEM). The major focus of the grant is to place technology integration specialists at each school in the district. These specialists will support the staff in acquiring instructional design and delivery methods that result in the integration of technology into all content curricula at the infusion level as measured by the Arizona Technology Integration Matrix. The technology integration specialists will provide professional development for the district staff in Intel Teach programs: Projects Based Approaches, Assessment in 21st Century Classrooms, Transforming Learning with One to One and AZ Teach 21. This job-embedded professional development component provides teachers and instructional support staff with the necessary support for radically changing day to day instruction.

The grant will utilize mathematics and science K-8 to enrich student and staff technological skills and to enhance the rigor of science and mathematics expectations for all students in the district. The K-4 elementary component for science will be Discovery Education Science and the 5-8 grades will utilize the Jason Project for enriched science content. The success of the students will be measured using AIMS scores annually and Star Enterprise scores and reports as pre- and post tests for the project. The grant will be evaluated on an ongoing basis by an external evaluator, Mrs. Maria Duttera, education consultant. A major component of the grant will be to prepare students and staff at Colonel Smith Middle School for the opening of the new state of the art technology-based middle school with a curricular emphasis in Science, Technology, Engineering and Mathematics in August of 2012. This school is one of a kind and is the first net-zero school in Arizona and one of only 14 in the United States.

The grant funds will be used to purchase I-Pad 2 tablets for each student enrolled in the middle school. The tablets will be utilized as instructional resources for students; as well as, a tool for enriching and enhancing the learning process for each student. The initial year, the 2011-2012 school year, of the grant will allow for a pilot of the I Pad 2 tablet with 150 students. In the 2012-2013 school year, pending a successful pilot, the tablet will be purchased for all middle school students and assigned to them just as the district assigns any other instructional resource.

The impetus for the school design and the proposal for this grant is the established need for schools to create better learning opportunities for students in mathematics and science as evidenced by the following excerpts from the concept paper written by Dr. Ronda L. Frueauff.

The results of the 2009 National Assessment of Educational Progress (NAEP) for science were released January 25, 2011. The report shows that only 34% of fourth-graders, 30% of eighth-graders, and 21% of twelfth-graders were shown to be proficient in science.

According to a study in the March 2010 International Journal of Science Education, sixty-five per cent of scientists and science graduate students said their interest in science began before middle school. In the past seven years of the 21st century, the number of people entering science and engineering jobs grew at the smallest rate since the National Science Foundation began tracking the data in the 1950s. Twenty-five percent of all college-educated workers in science and engineering jobs in 2003 were born abroad.

A child starting school today won't leave until 2024, by which point, who knows what technology will be commonplace? Schooling must become more flexible and therefore more engaging and interesting. Classrooms worldwide remain largely traditional, and technology is usually prescriptive. It is clear that bold action is required to improve science, technology, engineering and mathematics (STEM) education if we are to maintain our place of prominence in the global economy.

The vision for this grant proposal and the new middle school complex was strengthened by research from the National Science Foundation, the Science Foundation of Arizona, the 21st Century Partnership, the International Society of Technology, the Science and Technology Network, the National Academies, the Arizona K-12 Center and the National Assessment of Education Progress. The governing board of the Fort Huachuca Schools is purposeful in its pursuit of research-based, technologically-enhanced, rigorous educational programs for the students attending the school district. Through the financial assistance this grant will provide for the district, more highly engaging and technologically advanced programs will be created for the nearly 1,000 K-8 military dependents served by the school district.