

Project S.T.E.A.M. (Skillful Teachers Excited About Math)

Project Summary

Grade Level: K-5 Content Area: *Mathematics*

The primary objective of this project is to provide the teachers of the Geopolis Public Schools with the power to teach mathematics effectively, an identified area of need in the Geopolis Public School Improvement Plan. With teachers at the throttle, this grant will provide the steam to help our students maneuver the hills and curves in their journey to learn mathematics. Through professional development, teachers will develop strategies to augment their instruction and use technology as a tool to meet the needs of different learners. The strategies and best practices addressed in this project, will firmly couple teacher practice to help students develop a deeper understanding of mathematics and achieve higher standards.

Proposed Impact

This program will create support systems to deepen teachers' content knowledge and pedagogy in the area of the use of technology, thus improving students' performance as measured by the MCAS and other local measures.

Needs Assessment

After examination of our MCAS performance results in math over a three-year span, certain trends appear. The first trend we saw across all elementary schools was a significantly larger percentage of students scoring in the Needs Improvement/Warning category in mathematics compared to their performance in English/Language Arts. The second trend is we are moving our students from the Warning category to the Needs Improvement category but we do not see sufficient movement from Needs Improvement to Proficient and Advanced. Our recent efforts have focused on help for students with Warnings through intense remedial programs. In order to move a larger group of students from the Needs Improvement and Warning categories to Proficient and Advanced, we need to improve overall teaching skills in all classrooms. Our highest performing elementary school shows minimal students at the Warning level but follows the same trends as the others in the Needs Improvement/Warning categories.

Each elementary school has MCAS Task Force Groups (teams of teachers and administrators) analyzing MCAS 2001-2003 results that reveal curricular areas in math as needing attention and identifying the need for improved teaching strategies at each grade level to support the needs of our students in mathematics. These MCAS Task Force Groups have determined goals for mathematics in their School Improvement Plans. District goals reinforce the need for teachers to adopt improvement of teaching and learning in mathematics as well as increasing their comfort level with technology.

The grant would provide the time to share teaching strategies to support colleagues in implementing district initiatives in math. It will provide us with the means to introduce a model in which differentiated learning with technology integration instruction will allow students to achieve a high level of comfort and proficiency with mathematics. The ultimate goal of Professional Development is to enhance the quality of education provided for students through the improvement of instruction.

Conditions and Facilities

Geopolis has several conditions that are in place to support the implementation of this project. One of our strengths has been our continued professional development opportunities both in technology and content areas. The district has been providing extensive professional development opportunities for teachers to review and develop their instructional practice in order to improve student learning. With the implementation of our new math curriculum, *Math Investigations*, the district hired a K-8 math program leader to work with teachers and parents. Training in our new math curriculum, has been an on-going process with our math program leader. Workshops in these areas are leading to the development of K-8 math assessments using rubrics and protocols for looking at students' work. The state standards and our district's math curriculum provide a common language to structure teacher discussion of specific grade-level needs and opportunities. The state and district student technology standards also provide support with core-curriculum learning.

The District has in place key personnel that will enable teachers to maximize the impact on student learning. Instructional Technology Program Manager, program leaders, separate technical support for classrooms and computer labs at individual schools so time can be spent more wisely on integrating instead of troubleshooting. The Instructional Technology Program Manager and the Math Program Leader are able to work directly with classroom teachers, program leaders, and administrators to develop lessons to maximize the impact of technology and to meet the state and district students' technology competencies and math frameworks. Our shift from the "how to" courses to the "implementation" courses has led to the development of a district intranet web support site. This site is for professional development resources and communication with technical support staff. All computer software and hardware are catalogued by location, grade level, and subject areas and includes links to tutorials and curriculum support.

All K-5 teachers have been presenting lessons, that were written by our Instructional Technology Program Manager, in the computer labs on a weekly basis that are aligned with the grade-level competencies addressed in the State's Recommended PreK-12 Instructional Technology Standards.