

Success Understanding Mathematics (SUM)

Students grades K-6



SUM is designed to increase mathematical achievement of all elementary school children through improved teaching practices.

The program trains teachers to employ such practices as questioning, the use of manipulatives, and the analysis of real-world problems.

Results



Pre- and post-test data and supplementary evidence show that the SUM Program training was effective in influencing teachers to make the instructional changes recommended by the National Council of Teachers of Mathematics (NCTM) Standards.

Student attitude surveys showed that students demonstrated positive attitudes toward mathematics.

The Program

Success Understanding Mathematics (SUM) is based on the belief that children learn best when instructional methods match the ways in which they learn, and on Piaget's research which showed that elementary school children need to manipulate concrete materials to understand math concepts, and on the conviction that self confidence built on success is critically important to students. Students experience **Success** through **Understanding Mathematics**. Program characteristics include:

- A problem-solving approach
- Emphasis on reasoning, number sense, and operation sense
- Use of manipulatives by students to make connections between math concepts, language, and written symbols
- Role of students--investigate, guess, check, reason, discuss
- Role of teacher--pose real-world problems, guide student learning by questioning.

Since 1985 SUM trainers have conducted workshops for 12,300 teachers who were responsible for 340,000 students in 4,350 schools in 44 states, 3 Pacific territories, and Saudi Arabia.

Professional Development

The program may be implemented by a teacher, a school, or a school district. Pre-implementation workshops are conducted over two-three days at the adopter's site. Program training components include teaching methods that can be used with any textbook, program management materials, and support for teachers.

Costs & Funding Options

Training and Implementation costs include a two-day workshop (\$400/day plus expenses), participant materials (\$100/participant), and follow-up technical assistance. Materials include strategy books with suggested lessons and questions for teachers to use with their students, problems for students to use when practicing problem solving strategies, record keeping forms and black line masters. Training is available at the adopter's site. Follow-up workshops are tailored to meet teacher's needs. Ongoing consultant service is provided on site or by telephone.

Learning Standards

Mathematics, Science & Technology: 1) Use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions; 3) understand mathematics and become mathematically confident by communicating and reasoning mathematically, by applying mathematics in real-world settings, and by solving problems through the integrated study of number systems, geometry, algebra, data analysis, probability, and trigonometry.

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