

## **EXECUTIVE SUMMARY—BUILDING THE CASE: MATHEMATICS SPECIALIST**

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### VIRGINIA MATHEMATICS AND SCIENCE COALITION TASK FORCE

Given the increasing demands for all students to learn higher levels of mathematics and our agenda for improving the mathematics performance of all students, it is essential that schools have personnel prepared to address these challenges. Every child in Virginia must have excellent mathematics instruction to acquire an understanding of concepts, to gain fluency in procedures, and to become effective problem solvers. Experts in teaching and learning mathematics are also needed in the assessment and diagnosis of children who struggle with mathematics, and to serve as resources in planning and implementing interventions.

A number of national reports call for the placement of Mathematics Specialists in schools. A Mathematics Specialist is a teacher in the elementary or middle school who has interest and special preparation in mathematics content, scientifically based research in the teaching and learning of mathematics, diagnostic and assessment methods, and leadership skills. School-based Mathematics Specialists serve as resources in professional development, instructing children with learning difficulties, curriculum development, mentoring of new teachers, and community education.

The Task Force found school divisions in Virginia whose teachers and students are benefiting greatly from the multiple learning opportunities that Mathematics Specialists can bring into the school and the classroom. The Mathematics Specialist, working with the building-level administrator, can assume the responsibility for coordinating and providing leadership for the schoolwide mathematics program.

Mathematics Specialists can assume multiple leadership roles in schools, depending on the needs of the student population and teachers. Some Specialists work primarily in teaching roles with students in either pullout programs or in co-teaching situations. Others work providing job-embedded staff development for teachers. An additional essential role of the Specialist is supporting the work of the classroom teacher, and in developing a high quality, research-based mathematics program that ensures the success of all children in learning mathematics.

The Specialist role requires a comprehensive and rigorous preparation. Mathematics Specialists require deep knowledge of how children learn mathematics, of the use of various

assessments in diagnosing student difficulties in learning mathematics, and of designing instruction for diverse learners. Individuals in Specialist positions require graduate level preparation including significant coursework on school mathematics. The validity of the position of Mathematics Specialists will require that Specialists hold an appropriate educational endorsement.

Programs to prepare Mathematics Specialists must include appropriate school mathematics content and model pedagogy essential for teaching that content. Collaborative efforts among colleges of education, colleges of arts and sciences, local school divisions, and the Virginia Department of Education are needed to bring about the appropriate preparation of Mathematics Specialists.