

Designated Mathematics Leaders at All Levels: A Position Statement of the National Council of Supervisors of Mathematics (NCSM)

If we are to realize the dream of improved mathematics achievement for all students, there must be greater attention given to the K–12 mathematics program. The National Council of Supervisors of Mathematics (NCSM) strongly recommends that this attention include provisions for strong mathematics leadership at both district and local school levels.

There is a national call today for our citizens to be better prepared mathematically to meet the needs of a society where the international language of communications is mathematics. This call must be answered with change – change in the mathematics taught, in the way it is taught, and in the support available to those who teach it. Designated mathematics leaders are needed at every level to orchestrate the required changes. Local school mathematics team leaders and lead teachers, working collaboratively with district supervisors and directors, will be a powerful team. This team will change the focus of local mathematics programs from mathematics as computations to technology supported programs, focusing on mathematics as problem solving, as communications, as reasoning, and as making connections.

The value of qualified mathematics leadership has been demonstrated by the National Council of Teachers of Mathematics and its affiliates, including the NCSM, through the development and dissemination of the Curriculum and Evaluation Standards for School

Mathematics and the Professional Standards for Teaching Mathematics. The content of these documents provides marching orders for designated mathematics leaders as they guide the transition necessary to implement high quality mathematics instructional programs for all students.

Mathematics teachers, the expected deliverers of standard-based mathematics education, need the support of designated leaders as they attempt to grapple with the changes in mathematics education along with the many other changes in education that are impacting their lives. These teachers are expected to produce students who meet the new definition of numeracy. This is to be accomplished in schools that have been impacted by reform efforts such as local control, local rather than centrally-developed curriculum, site-based management, student-centered instruction, and increased parental control – to name a few. The support of mathematics leaders is necessary for teachers who, in this atmosphere, must produce mathematics instruction that: expects all students to master quality mathematics; delivers application-driven, technology-enhanced instruction; uses alternative assessment strategies; and implements inquiry-based instruction, which is culturally-relevant and historically accurate. Requiring classroom teachers to take responsibility for such instructional reform is to expect

them to operate at a level at which many of them are not prepared and often, do not have the skills. The assistance of designated mathematics leaders is critical if teachers are to acquire the knowledge, skills, and competencies necessary to perform the myriad of tasks related to this challenge. School systems cannot afford to end up with restructured, site-base managed, student-centered, culturally aware schools where students are not prepared mathematically for the world they are facing.

Changes in mathematics instruction and other changes in education are occurring concurrently. Designated mathematics leadership will assist in insuring that the needed changes in mathematics education are not sacrificed for the other mandates placed upon educators today. School districts whose organizational structure includes designated mathematics leaders can have the assurance that mathematics reform is integrated into school reform. Through designated teams of mathematics specialists at both the central and local school levels, mathematics support becomes an integral part of school reform, giving school districts the organizational capacity to support teacher's efforts to fulfill their newly defined roles. In such an environment mathematics reform and school reform become synonymous.

Mathematics leaders are essential for raising the level of mathematical knowledge and pedagogical competence of the staff; for coordinating mathematics instructional efforts within buildings, districts, and systems; and for helping to assure the implementation of comprehensive, high-quality programs. These leaders must be recognized and utilized as valuable resources for curriculum design and content, methodology, evaluation strategies, and for effecting change in mathematics instruction.

As mathematics leaders support teachers, teams of leaders should cooperatively support each other's efforts as they address concerns and promote excellence in mathematics education for all students. These leaders must be visionaries, knowledgeable about subject matter, aware of research and developments in the teaching and learning of mathematics, have good communication skills, and the ability to work well with others. They must have high expectations for all students; be thoroughly prepared in the teaching and learning of mathematics by diverse groups; and be knowledgeable about the essentials for the development and delivery of high quality mathematics instruction.

Mathematics leaders will serve as principal advocates for the needed changes in the teaching of mathematics. Such persons will provide leadership in matters concerning curriculum, appropriate materials, student assessment, professional development, and procedural duties.

More specifically, mathematics leaders should perform or assist in any, or all, of the following tasks.

1) Curriculum Design and Content

- Coordinate programs at all levels under their supervision and develop a consistent emphasis on sound educational practices.
- Provide assistance for teachers in understanding the NCTM Curriculum and Evaluation Standards for School Mathematics and in designing instructional

programs that meet these Standards.

- Provide guidance in the revision of curriculum content to be consistent with the NCTM Standards.

2) Methodology and Materials

- Assist teachers in understanding the NCTM Professional Standards for Teaching Mathematics and in designing instructional methodologies that meet these Standards.
- Develop and promote models for integration of current technology into mathematics curricula and instruction at all levels.
- Foster the development and implementation of effective teaching material and strategies.
- Recommend programs and materials that have been judged effective.

3) Assessment

- Assist teachers in understanding the NCTM Standards for Assessing Mathematics and in designing assessment practices that meet these Standards.
- Provide guidance for improving curriculum and instruction through appropriate program evaluation.

4) Other Functions

- Work with staff in determining needs and priorities for professional development.

- Demonstrate a knowledge of research in mathematics education and help teachers translate the results of research into effective teaching strategies.
- Exert leadership within local, state/provincial, and national professional associations for mathematics and mathematics education.
- Motivate teachers and others to strive for continued professional growth.
- Represent teachers' needs and concerns to administrators and professional agencies and actively facilitate opportunities for improving mathematics teaching.
- Establish communication links between elementary schools, middle schools, secondary schools, and post secondary schools.
- Communicate to administrations, school boards, teachers, parents, students, and communities the vital importance of mathematics.
- Establish and support forums and dialogue among groups having an influence on the shape and direction of school mathematics programs.
- Promote professional excellence in mathematics teaching.

The National Council of Supervisors of Mathematics, therefore, advocates that school districts and local schools identify and designate mathematics leaders to provide ongoing leadership and assistance in planning,

implementing, and evaluating a comprehensive mathematics program. Mathematics leaders should be available as a resource to all staff in the areas of curriculum design, professional development, teaching methodology, classroom management, selection of materials, and student assessment.

If we are to empower teachers and place them on the cutting edge of reform in mathematics education, we must support their efforts to become professionally involved and knowledgeable of current developments in mathematics education.

Designated mathematics leadership is critical to the success of this endeavor.

NCSM welcomes your input into this important document. Comments and suggestions should be sent to:

*Dorothy S. Strong
2820 Paris Road
Olympia Fields, Illinois 60461
Fax: (312) 535-7931*
