

P R E F A C E

On September 12, 2006, the National Council of Teachers of Mathematics released *Curriculum Focal Points for Prekindergarten through Grade 8 Mathematics: A Quest for Coherence* to encourage discussions at the national, state, and district levels on the importance of designing a coherent elementary mathematics curriculum focusing on the important mathematical ideas at each grade level. The natural question that followed the release of *Curriculum Focal Points* was “How do we translate this view of a focused curriculum into the classroom?”

Focus in Grade 8, one in a series of grade-level publications, is designed to support teachers, supervisors, and coordinators as they begin the discussion of a more focused curriculum across and within prekindergarten through grade 8, as presented in *Curriculum Focal Points. Focus in Grade 8*, in conjunction with the *Focus in Grade 6* (NCTM 2010) and *Focus in Grade 7* (NCTM 2010) books, will provide a strong foundation for mathematics in a focused curriculum across grades 6 through 8. Important mathematics to prepare students for grade 8 is addressed in the publications *Focus in Grade 6* and *Focus in Grade 7*. Additionally, teacher educators should find *Focus in Grade 8* useful as a vehicle for exploring with their preservice teachers the mathematical ideas and curriculum issues related to the suggested grade 8 Curriculum Focal Points.

The contributors to, and reviewers of, these publications, all active leaders in mathematics education and professional development, guided the creation of this grade-level book as a framework for lesson-study experiences in which teachers deepen their understanding of the mathematical ideas they will be teaching. This book describes and illustrates instructional progressions for the mathematical concepts and skills of each grade 8 Curriculum Focal Point, including powerful representational supports for teaching and learning that can facilitate understanding, stimulate productive discussions about mathematical thinking, and provide a foundation for fluency with the core ideas. Because these instructional progressions cut across grades, you will see the progressions in each grade accompanied by summaries of progressions before and after that grade that connect to Focal Points and Connections in previous and following grades.

Whether you are working with your colleagues or individually, we hope you will find the discussions of the instructional progressions, representations, problems, and lines of reasoning valuable as you plan activities and discussions for your students and as you strive to help your students achieve the depth of understanding of important mathematical concepts necessary for their future success.

—Jane F. Schielack
Series Advisor

PREFACE TO CURRICULUM FOCAL POINTS FOR PREKINDERGARTEN THROUGH GRADE 8 MATHEMATICS

To address the need for a prototypical, coherent, grade-level-specific mathematics curriculum linked to *Principles and Standards for School Mathematics* (NCTM 2000), the National Council of Teachers of Mathematics asked a team of mathematicians, mathematics educators, and school-based educators to identify three or four focal points in mathematics for each grade level, prekindergarten through grade 8. The writing team—consisting of at least one university-level mathematics educator or mathematician and one pre-K–8 classroom practitioner from each of the three grade bands (pre-K–grade 2, grades 3–5, and grades 6–8)—worked together to create a set of focal points that could serve as areas of emphasis for each grade level and be used as an outline for an articulated pre-K–8 mathematics curriculum. The members of the writing team based their decisions on recommendations from *Principles and Standards*, examinations of multiple curricula from several states and countries, and reviews of a wide array of researchers’ and experts’ writings on the subject.

We appreciate the contributions of all who have made this document possible.

On behalf of the Board of Directors,

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