Preface to the Second Edition

Invitations to explore mathematics abound in the wonderful world of children's books in mathematics. The colorful covers of children's books are designed to entice prospective readers. The contents are written to delight, entertain, and inform. These features are enticements for children to become actively involved in constructing mathematics.

From the simplest to more-complex topics, these books can engage readers in worthwhile tasks. Our analysis of children's books and the ways in which they can be used has revealed a rich resource for developing mathematical power. These books can be appreciated by adults as well as by children and can be used on a one-to-one basis between parent and child, as a classroom exploration for a group of children, or for individual enjoyment. Through sharing these books, adults and children not only will be entertained but will develop confidence in their ability to engage in mathematical tasks involving problem solving and reasoning. And the books present an opportunity for children to communicate about mathematics.

In our work with preservice and in-service elementary school teachers, parents, and others, we have also found that children's literature in mathematics has been a valuable tool for developing positive attitudes toward mathematics as well as for exploring mathematics. The attitude of the reluctant mathematician can be changed through the exploration of quality mathematics books for children. In a highly technological society, developing positive beliefs and dispositions is essential.

The focus on process in mathematics is concurrent with a similar focus in the area of reading. Literature that explores mathematical concepts appears to be a natural tool for attaining goals in both these areas, particularly at the emergent and early reading levels. An awareness of the potential role of quality mathematics books for children led to the compilation of this resource for educators.

In the past decade, children's literature in mathematics has been

popularized. Evidence of this can be found in—

- the number of resources on how to use children's books in the classroom;
- the number of conference sessions having children's literature in the description;
- the number of articles on children's literature in *Teaching Children Mathematics* and the creation of the column "Links to Literature";
- the number of new children's books in mathematics.

Children's books in mathematics are being used more frequently in classrooms. Articles and books that illustrate how to use children's books have provided good models for incorporating literature into the mathematics classroom. A number of these models reflect worthwhile tasks, classroom discourse, and learning environments as described in the *Professional Standards for Teaching Mathematics.* Some teachers report that such resources gave them their start with using literature to support mathematics learning, and they now competently and confidently use new children's books as they become available. These teachers also report that they continue to look for new books to share with their students.

Both the quantity and the quality of children's books in mathematics has changed. There are more books that deal with a greater range of topics as well as more sophisticated topics. Edens's *How Many Bears?* is an excellent example of a book that combines counting, operations, and problem solving with stunning illustrations and a clever format. Pinczes's *One Hundred Hungry Ants* involves divisors of one hundred but can readily be extended to discussions about divisibility, primes, and composites. Scieszka's *Math Curse* delights readers of various ages; some of the mathematics will not be accessible to the young reader, yet the twists and humor of the book can be appreciated by all. These books and others will be read and reread and should motivate children to seek other books and to pursue other topics in mathematics.

Throughout the review process, we noted that children's books in mathematics are dominated in number and quality by the counting book. Faced with more than two hundred counting books, we were forced to examine the possible reasons for this dominance. The importance of beginning reading and the acceptance of counting as the first step toward number sense combine with the search for appropriate rhythmic and predictable text for emergent readers. The combination of familiar counting activities, a simple story line, and appealing illustrations provide children and their parents or teachers with ideal introductions to both mathematics and the reading process. The supply, understandably, responds to the demand. The dominance of the counting book may also

reflect the restricted societal view that mathematics is limited to number and that the exploration of more-complex mathematical concepts is only for the few. Changing these attitudes is a constant challenge. We can only hope that as our readers join us in our journey of discovery, they will contact bookstores and publishers to place their orders for the books that have offered them the most insight into the excitement and challenge that the world of mathematics offers.

The Selection of Books

More than five hundred fifty books are reviewed in this second edition. More than 60 percent of these titles are new. These books are trade books, not workbooks or teacher-resource materials. The 1996–97 and 1997–98 editions of *Children's Books in Print* were the main resources for compiling and updating a book list. Another print source was *Forthcoming Books.* Additionally, recommendations from teachers and other children's-literature enthusiasts were considered.

The books reviewed in the first edition were included in the second edition if they were in print according to *Children's Books in Print.* This choice is arbitrary because the publishing status of books changes daily.

A quandary in book selection was deciding which books had mathematics concepts as a primary emphasis and which books contained mathematics that was incidental. Many books were clearly mathematics-concept books. The line dividing these books from books in which mathematics was incidental was not clearly defined. A number of the latter books can be a springboard to exploring different concepts or a catalyst for integrating different topics. This bibliography contains the books that are primarily mathematics.

A new section titled "Series and Other Resources" was created to accommodate the large number of books that have been issued in series. Because the books in each series have common elements, it is helpful to have all the annotations in one section. Each book in a series was cross-referenced in the appropriate topics for readers who are searching for books that include an explicit topic.

"Incidental Geometry—Quilting" is a new subsection. It was created because of the popularity of using children's literature whose main focus is quilting. Many teachers find these books invaluable in helping students make connections among geometry—in particular, tessellations—history, and quilting.

Some of the quality out-of-print books are listed in the introduction to various subsections. A number of these books can be found in your school or public library; a few may still be found in bookstores. All these titles were recommended or highly recommended in the original edition of *The*

Wonderful World of Mathematics. Some of these books were written by familiar authors. Since some of these books explore topics that are not encountered in other in-print books, we have included them here. A number of these selections were originally published as part of the Thomas Y. Crowell Young Math Books series.

The Crowell Young Math Books are notable for several reasons. Important mathematics topics are represented. A mathematics editor coordinated the series. Both activities and illustrations were carefully designed to involve the reader in exploring and developing concepts. The books are appealing. Often the publisher's recommended grade levels appear to be a mismatch with the curriculum; the books were designed to introduce children to more-sophisticated mathematics rather than simply to arithmetic. They were also designed so that young children have an opportunity to *play* with important mathematical ideas that are studied more formally in later grades. The presentation and quality of some tasks, such as those found in Froman's *Angles Are Easy as Pie* or Srivastava's *Spaces, Shapes, and Sizes,* have not been found in current books. For these reasons, we consider these books to be "classics" in juvenile mathematics literature, and although they are out of print, they should be acknowledged. Some of these books are also highlighted in vignettes from the classroom.

The Format of the Reviews

Each review describes the book's content and accuracy, its illustrations and their appropriateness, and the author's writing style and indicates whether activities for the reader are included. Numerals rather than word names are often used in the annotations to reflect the treatment of numbers in the books. We strived to have annotations that are consistent but at the same time reflect the uniqueness of each book.

In the bibliographical entries, a notation indicates whether the book develops a single concept or multiple concepts. The books are classified as listed in the table of contents. Some books are cross-referenced under more than one category. An overview for each of the five main categories can be found at the beginning of each section. More-detailed descriptions of the types of books are included at the beginning of each subsection. Vignettes in the overview and some subsections give a flavor of how some of the books have been successfully used in classrooms. Situations from elementary school, junior high school, and college classrooms illustrate how students of different ages can enjoy and use the books. By exploring appropriate books in the college classroom, preservice teachers can extend their knowledge about resources, teaching activities, and children's thinking all at the same time.

Each book is rated according to its usefulness in teaching mathematics concepts as highly recommended (★★★), recommended (★★), or acceptable (☆). Books that are not recommended for mathematics concepts have no designation. The grade level (from preschool [PS] to grade 6) of each book as stated in *Children's Books in Print* is included in the bibliographical entry. On the basis of our experiences with children, we questioned some of the recommended grade levels. For these books, our recommendations on grade levels are recorded in parentheses after the publisher's recommendation.

The ISBN number and the cost of the books, if available, are also included in the entries. Because prices fluctuate, the prices cited should be considered estimates. Some of the books are available with paper covers or with reinforced, or library, binding; this information has been recorded next to the appropriate ISBN number.

We hope the format and the information in the reviews will provide a sufficient basis for the intelligent selection of exciting books that will encourage explorations in mathematics for children in school and at home. We wish you happy reading and growth in mathematics prowess.

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