

About This Book

Navigating through Algebra in Grades 3-5 is the second of four grade-band books that demonstrate how some of the fundamental ideas of algebra can be introduced, developed, and extended. The introduction to this book is an overview of the development of algebraic reasoning from prekindergarten through grade 12. Each of the three chapters that follow the introduction focuses on an important idea of algebra. Chapter 1 deals with patterns, chapter 2 deals with variables and equations, and chapter 3 examines functions. The last chapter summarizes the major ideas addressed and gives a brief overview of the concepts to be presented in subsequent grades.

Each chapter begins with a discussion of a basic idea of algebra, which is followed by student activities that introduce, and promote familiarity with, the idea. For each activity, the recommended grade level is identified and the goals to be achieved, the prerequisite skills and knowledge, and the materials necessary for conducting the activity are presented. Some of the activities require blackline masters, which are signaled by an icon and identified in the materials list and can be found in the appendix. They can also be printed from the CD-ROM that accompanies the book. The CD, also signaled by an icon, contains three applets for students to manipulate and resources for professional development.

All the activities have the same format. Each consists of three sections: “Engage,” “Explore,” and “Extend.” The “Engage” section presents tasks designed to capture students’ interests. “Explore” presents the core investigation that all students should be able to do. “Extend” suggests additional activities for students who demonstrate continued interest and want to do some challenging mathematics. Margin notes include teaching tips, anticipated student responses to some of the questions or activities, references to some of the resources included on the CD-ROM that accompanies this book, and quotations from *Principles and Standards for School Mathematics* (National Council of Teachers of Mathematics [NCTM] 2000). The assessment ideas for each activity suggest strategies for evaluating students, offer insights about students’ performance, and suggest ways to modify the activities for students who are experiencing difficulty or who need enrichment. Finally, ideas are offered for connecting the activity to related instructional topics.

A cautionary note: This book is not intended to be a complete curriculum for algebraic reasoning in this grade band. It presents, rather, a collection of activities that should be used in conjunction with other instructional materials.

Key to Icons



Principles and Standards



Blackline Master



CD-ROM

Three different icons appear in the book, as shown in the key. One alerts readers to material quoted from *Principles and Standards for School Mathematics*, another points them to supplementary materials on the CD-ROM that accompanies the book, and a third signals the blackline masters and indicates their locations in the appendix.