

About This Book

Navigating through Data Analysis and Probability in Prekindergarten–Grade 2 demonstrates how some fundamental ideas of data analysis and probability can be introduced, developed, and extended. The introduction to the book is an overview of the development of data and probability concepts from prekindergarten through grade 12, and the three chapters that follow it focus on important ideas of data and probability in prekindergarten through grade 2. Chapter 1 deals with data collection, organization, and display; chapter 2 suggests strategies for posing questions and displaying and analyzing data; and chapter 3 introduces simple probability.

Each chapter begins with a discussion of the foundational ideas and the expectations for students' accomplishment by the end of grade 2. This discussion is followed by student activities that introduce and promote familiarity with the essential ideas. At the beginning of each activity, the recommended grade levels are identified and a summary of the activity is presented. The goals to be achieved, the prerequisite knowledge, and the materials necessary for conducting the activities are specified. Some of the activities have 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 applets for students to manipulate and resources for professional development.

All 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” provides additional activities for students who demonstrate continued interest and want to do some challenging mathematics. Throughout the activities, questions are posed to stimulate students to think more deeply about the mathematical ideas. After some questions, possible responses are shown in parentheses. Margin notes include teaching tips, copies of blackline masters, and quotations from *Principles and Standards for School Mathematics* (National Council of Teachers of Mathematics 2000). The discussion section of each activity identifies connections with the process strands and other content strands in the curriculum, offers insights about students' performance, and suggests ways to modify the activities for students who are experiencing difficulty or who are in need of enrichment. Although grade levels are recommended, most of the activities can be modified for use by students at other levels in the pre-K–grade 2 band. In order to make the modifications that will most enhance students' learning, teachers are urged to observe students' performance by taking note of the appropriateness of their mathematical vocabulary, the clarity of their explanations, the robustness of the rationale for their solutions, and the complexity of their creations.

A cautionary note: This book is not intended to be a complete curriculum for data and probability in this grade band. It should, rather, be used in conjunction with other instructional materials.

Key to Icons



Principles and Standards



CD-ROM



Blackline Master

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.