

Introduction

STANDARDS

Research and Standards

Educators agree that reading and creating graphs, tables, and charts are essential skills in many subject areas, not just mathematics. However, whether in reading, math, science, or social studies, students struggle to master these skills. Ozgun-Koca explains, “Although graphs are explicitly taught in mathematics classrooms as an end in themselves, many subject areas such as science and social studies utilize graphs to represent and interpret relationships. So being able to interpret and construct graphical representations is a crucial skill for every student whether they want to pursue science or mathematics related careers. However, many researchers detected that many students lack graphing skills” (2001).

Basic Math Practice: Tables, Graphs, and Charts was designed to promote basic mastery in reading and creating visual representations of mathematical data. By practicing each skill in a variety of formats, students are able to truly master the six kinds of tables, graphs, and charts presented. Jones, Wilson, and Bhojwani note, “Practice activities are essential components of mathematics instructional programs. Students with LD will generally need more practice and practice that is better designed than students without LD, if they are to achieve adequate levels of fluency and retention” (1997).

Each activity sheet includes space for students to write about how they solved a problem or completed a table, graph, or chart. This “journaling” aspect will help students verbalize their own strategies. Clements points out that all learners develop informal learning strategies and that teachers should determine and build on these strategies to develop mathematical concepts and procedures (2000).

Another important aspect of this book is the integration of take-home activities. By applying graphing and charting skills at home, students will be able to see their real-world usefulness. As Sousa states, “Most people learn mathematics best in the context of real-world problems... Students are more comfortable with mathematics when they perceive it as a practical tool and not as an end unto itself” (2001).

This book meets both state and national standards (including the National Council of Teachers of Mathematics Standards 2000 Project) regarding data analysis, representations, and connections. As students complete the activities in this book, they will:

- collect, organize, and display data to help answer questions.
- create and use mathematical representations.
- recognize the appropriate uses of different types of visual representations.
- identify real-world applications for various forms of visual representations.

Clements, D. H. (2000, Summer). Translating lessons from research into mathematics classrooms: Mathematics and special needs students. *International Dyslexia Association: Perspectives*, 26, 31–33.

Jones, E. D., Wilson, R., & Bhojwani, S. (1997, March/April). Mathematics instruction for secondary students with learning disabilities. *Journal of Learning Disabilities*, 30(2), 151–163.

Ozgun-Koca, S. Asli. (2001). *The Graphing Skills of Students in Mathematics and Science Education*. Columbus, OH: ERIC Clearinghouse for Science Mathematics and Environmental Education. (ERIC Document Reproduction Service No. ED464804).

Sousa, D. A. (2001). *How the Special Needs Brain Learns*. Thousand Oaks, CA: Corwin Press, Inc.