

Research and Standards

Meaningful Math provides students with a reason for learning how to solve mathematical word problems. The National Council of Teachers of Mathematics Standards 2000 Project states:

“Problem solving is an integral part of all mathematics learning. In everyday life and in the workplace, being able to solve problems can lead to great advantages Most mathematical concepts can be introduced through problems based on familiar experiences coming from students’ lives or from mathematical contexts.”

The methodology of *Meaningful Math* is rooted firmly in these national standards and in the research regarding teaching mathematics to students with learning differences. For example, Lerner (1993) states that using word story problems that are of interest to students and within their experience is an effective strategy for teaching problem solving and applications to students with learning disabilities.

To meet the needs of students with special needs, the activity sheets in this book present two word problems per page and provide sufficient room for students to work out the answers. Placing only two problems on each page helps students gain confidence in their ability to successfully solve word problems. As Sousa (2001) notes, “Another lesson that research has taught us is that students with special needs are likely to be more successful if taught fewer concepts in more time.”

In order to meet the needs of students with reading difficulties, the word problems in this book are written at a 3.0–3.9 reading level. Waldron (1992) states that “students should never be given work above their current ability level.” The low reading level allows students with varying reading abilities to achieve success in solving math word problems.

Meaningful Math meets both state and national standards (including the NCTM Standards 2000 Project) regarding numbers, operations, and problem solving. As students complete the worksheets in this book, they will:

- Identify and analyze information needed to solve mathematical problems.
- Understand meanings of operations and how different operations affect numbers.
- Build new mathematical knowledge through problem solving.
- Solve problems that arise in mathematics and in other contexts.
- Apply and adapt a variety of appropriate strategies to solve problems.

Lerner, J. W. (1993). *Learning Disabilities: Theories, Diagnosis & Teaching Strategies*. Boston, MA: Houghton Mifflin Company.

National Council of Teachers of Mathematics, Standards 2000 Project Standards for School Mathematics. In *NCTM Standards: Overview of Principles and Standards for School Mathematics*. Retrieved December 1, 2004, from <http://www.nctm.org/standards/standards.htm>

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

Waldron, K. A. (1992). *Teaching Students With Learning Disabilities: Strategies for Success*. San Diego, CA: Singular Publishing Group, Inc.