

MATHEMATICS TEACHER REFERENCE BOOKS

A Research Companion to Principles and Standards for School Mathematics, National Council of Teachers of Mathematics (ISBN 0-87353-537-5), is a resource guide based on research about the nature of mathematics, student learning, instructional practice, assessment practice, and teacher development.

About Teaching Mathematics, by Marilyn Burns, Math Solutions Publications, (ISBN 0-941355-25-X), is a book about teaching for understanding that engages students actively in their mathematics learning. The book provides teachers with the direction and assistance needed to implement instruction that develops students' mathematical confidence and competence. It helps teachers to examine how children learn mathematics, develops a positive attitude toward and an interest in mathematics, teaches mathematics with problem solving as the primary focus and helps establish a classroom environment that supports children's learning of mathematics.

Adding It Up—Helping Children Learn Mathematics, National Academy Press (ISBN 0-309-06995-5), is a book divided into topics that constitute the mathematics curriculum from pre-kindergarten to eighth grade. Some of the topics are: Looking at Mathematics and Learning; the State of School Mathematics in the U.S.; the Strands of Mathematical Proficiency; and Developing Proficiency with Whole Numbers, Other Numbers and Beyond Numbers. Another topic is Developing Proficiency in Teaching Mathematics. The National Academy of Sciences, the National Academy of Engineering, the Institute of Medicine and the National Research Council have supported this book.

Classroom Instruction That Works, by Robert Marzano, Debra Pickering and Jane Pollock, Association for Supervision and Curriculum Development, (ISBN 0-87120-504-1), examines decades of research findings to distill the results into nine broad teaching strategies that have positive effects on student learning. The authors provide statistical effect sizes and show how these translate into percentile gains for students, for each strategy. Each chapter presents extended classroom examples of teachers and students in action; models of successful instruction; and many "frames", rubrics, organizers, and charts to help teachers plan and implement the strategies.

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Elementary and Middle School Mathematics, Teaching Developmentally, by John A. Van De Walle, Pearson, Allyn and Bacon (ISBN 0-205-38689-X), is a textbook describing the fundamental core of effective teaching of mathematics that combines an understanding of how children learn, how to promote that learning by teaching through problem solving, and how to plan for and assess that learning on a daily basis. Chapters provide perspectives on trends in mathematics education and the process of doing mathematics and develop the core ideas of learning, teaching, assessment, and planning. It also discusses additional perspectives on mathematics for special children and the role of technology are also discussed.

Knowing and Teaching Elementary Mathematics, (ISBN 0-8058-2908-3). Liping Ma, a professor at the University of California, Berkeley, conducted a study that compares mathematical understanding among U.S. and Chinese elementary school teachers as it relates to classroom teaching practices. She accounted for the differences in content knowledge and understanding between U.S. and Chinese elementary teachers and inquired into the sources for those differences.

Principles and Standards for School Mathematics, National Council of Teachers of Mathematics (ISBN 0-87353-480-8), is a resource guide for all mathematics educators of students in pre-kindergarten through 12. The recommendations are grounded in the belief that all students should learn important mathematical concepts and processes with understanding. This is an excellent resource for mathematics discussions with a community of learners.

Teaching Children Who Struggle with Mathematics, by Helene Sherman, Lloyd Richardson, and George Yard, Pearson, (ISBN 0-13-098463-9), dedicates itself to addressing the cognitive needs of children in grades 1-6 who underachieve in mathematics and is designed to help teachers assess these students' individual abilities and characteristics as well as choose appropriate and effective strategies. The book is rich with case studies of underachieving math students and assorted examples of how teachers can assess and differentiate instruction for these students.