

A Letter to Readers

Dear Parents, Teachers, and Caregivers,

How can I help my child learn math without the anxiety that so often accompanies this subject? Parents of all backgrounds—those whose knowledge of math is small and those who use it daily in their work—share this concern. *What if I never liked math or didn't do well in it myself?* This book is intended to help you develop a positive relationship with your child by offering useful approaches to this subject and including activities that make math a source of fun. Many family pastimes can include math in a natural way while they build your child's foundation in math. By starting in your child's infancy with topics you know well, and becoming comfortable with including math in your conversations, you can develop a bond with your child that will allow you to continue to explore mathematical ideas and support your child's learning throughout the grade-school years.

Children are constantly trying to make sense of the world around them. They make observations, generalize, and ask questions. They use their natural abilities and intelligence to develop methods of solving problems of many kinds, including math. When they are asked to learn a subject without understanding it, they easily become overwhelmed and frustrated. Unfortunately, math is often taught in a manner that does not make sense to them, and they soon feel helpless and stupid. They do not realize that it is the manner of teaching and not the subject itself that is the problem.

Children's educational success and future careers depend in large part on their ability to do well on standardized tests that include math. Many parents feel inadequate in their own knowledge of math. Even those who do know the math find that the pressure of tests causes tension. Parents hope their children will have a better experience than they did, but don't know how to assist them.

Learning math involves learning its three components: **conventions**, **concepts**, and **skills**. **Conventions** are the generally agreed-upon aspects of math that must be memorized.

These include the symbols we use to represent the numbers (0, 1, 2, 3, . . .) and those for arithmetic operations (+, −, ×, ÷). Many people find concepts and skills difficult to separate. An example is the **concept** of addition—knowing that adding means putting two groups together and finding out how many are in the joined group. A young child may grasp this concept. When asked to add four and three, a five-year-old might count out four objects, count out three, then put the objects together and count starting from one again in order to find the total. Although this child understands well the **concept** of addition, it will be several years before she or he develops the **skills** needed to add 378 and 835: memorization of basic number facts and a practical and reliable method of adding large numbers. When lessons focus only on skills without addressing the concepts involved, many children feel lost and lose interest. When children understand what they are doing and why, they feel successful, even powerful, and are eager to do more math.

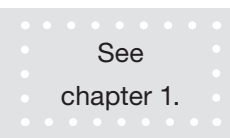
So what can you do? This book will show you how to give your child a basic understanding of math and the foundation necessary to do well in this important subject—and even enjoy it. The book is designed so that it does not have to be read in order. If your child already knows how to count, you might want to jump to a later chapter.

As you try the activities, there are some important things to keep in mind:

- Be your child's champion, not tester. Avoid putting her or him on the spot, but do notice what errors are made and work on them.
- If you forget to do math for a while, don't overdo it when you remember.
- Knowing a lot of math is not necessary—you can learn with your child.
- Watching and listening are more important than explaining or telling what to do.

If you are having fun and don't get upset by mistakes, your child will be happy to participate. All children are eager for parents' time and attention, so give it . . . with math.

—Frances Stern



Whenever a term that was defined in an earlier chapter is used, the reference is given in a margin note.



Margin notes with this icon indicate activities that are illustrated by videos at www.nctm.org/more4u.



Margin notes with this symbol accompany illustrations with a version in the back of the book (and also at More4U) suitable for copying or cutting out for making materials to use with your children.