

GOOD YEAR BOOKS

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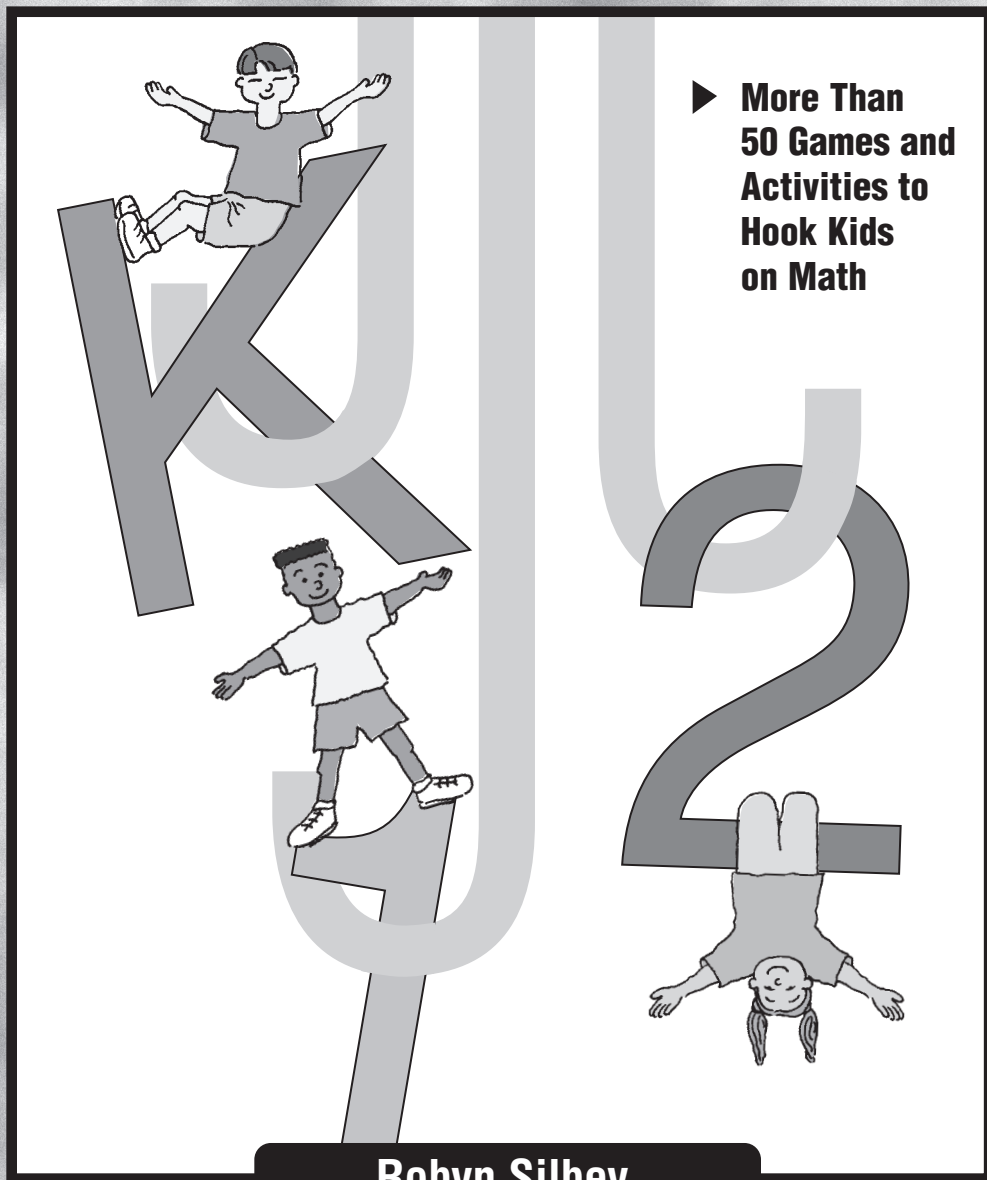
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Math Hooks 1



**Good Year Books
Culver City, California**

**To Marc and Carrie,
with love**

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Preface

Most parents are already active participants in their children’s reading or language arts education. They read to their children, and have their children read to them. They write letters and thank-you notes. They read street signs and cereal boxes. But when it comes to playing a part in their children’s math education, most parents draw a blank.

With *Math Hooks 1*, parents and children will be hooked into a math education. Most of the activities in this book require little or no preparation. Some require nothing more than an awareness of everyday math problems that surround us.

Do you realize you are using math when you . . .

-
- *Calculate how much money you need to put into the parking meter when you go shopping?*

 - *Change a recipe to accommodate more or fewer people than the recipe calls for?*

 - *Decide when to leave the house to run a series of errands?*

If math opportunities are discussed as they arise, children will begin to value math as a necessity for living. Understanding that math concepts are needed for everyday living will motivate your child to learn the concepts presented in school.

Math Hooks 1 presents opportunities to learn mathematics in fun, realistic, and casual ways. Some activities are experiential in nature—they can be completed during a ride in the car or a hunt through a junk drawer. Other activities are games that can be played with a parent or other partner(s). All activities are designed to engage children in critical thinking and mindful discussion while they are having fun at the same time.

Enjoy the activities that follow. Make mathematics your child’s favorite subject!

Robyn Silbey

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Introduction

Mathematics education at home should be an educationally and emotionally satisfying experience. Research shows that parents must be involved in order for their children to live up to their full potential in mathematics. Showing an interest in mathematics at home helps children in many ways:

It establishes a partnership between parents and teachers for the benefit of the child.

Parent involvement enhances children's understanding and boosts their achievement. A strong commitment at home sends a clear message to a child: Learning mathematics is important.

It reinforces how crucial mathematics is in the child's overall success. Mathematics is presented and taught differently today than it was two decades ago. Mathematics in today's classrooms opens the doors to the outside world. It involves real-life applications and experiences, especially highlighting those at home.

It enables children to achieve their maximum potential. A school's mathematics program actively involves children as they explore, investigate, question, predict, and analyze. Children are learning how to be critical thinkers, problem solvers, and decision makers. By encouraging children to use the same thought processes and skills at home, the most important concepts and skills learned in the classroom are being reinforced.

What Parents Can Do to Hook Children into Mathematics at Home

Complete the activities described in this book that are appropriate for your child's ability level. *Math Hooks 1* provides you with virtually everything you need to maximize your child's potential in mathematics in school and at home.

Here are a few additional helpful hints.

Ask questions. Your child’s responses to questions will give you an idea of what he or she knows, where gaps in understanding may lie, and how you can help clarify misconceptions he or she may have. Questions should be open-ended so that there is a wide range of correct responses. Be sure to give your child plenty of time to answer your questions. Your child may need to think, visualize objects he or she has used in the past, recall a lesson taught in school, or think about how best to respond to your inquiry. Many of the entries in this book include questions specific to the activity. Following are some questions that can be asked with almost any math activity you can do with your child.

- *What are you thinking?*
- *What are you trying to find out?*
- *What do you already know?*
- *What is the first step in solving the problem?*
- *How did you know that?*
- *Is that always true? Why?*
- *Why did you choose the operation (or the numbers) you did to solve the problem?*
- *Does this make sense?*
- *Can you think of another way to solve the problem?*
- *Show me the steps you used to find the answer.*
- *How could you check the answer to make sure it makes sense?*
- *Do you see a pattern? If so, describe it.*

A simple open-ended request such as, “Tell me what you know about the coins you are holding” yields a much more comprehensive and revealing response than several questions such as, “How much is this coin worth?” and “How many pennies make a nickel?” *Remember: Questioning can be an effective diagnostic tool and can also serve as a good conversation starter.*

Our Nation's Goals in Mathematics

Most children in the United States are taught within the guidelines of a national program designed to improve children's understanding of mathematics. The Standards set forth by the National Council of Teachers of Mathematics suggest that:

-
- *Children will be engaged in discovering mathematics. Math Hooks 1 activities involve children in games and activities that will help them discover patterns, concepts, and new ideas.*

 - *Children will see mathematics in daily life activities and experiences. In Math Hooks 1, children are asked to integrate mathematics topics with every other aspect of their lives. They will see that they live math every moment of every day.*

 - *Children will explore and develop an understanding of mathematics concepts using materials they can touch and feel. With your help, children will be using authentic manipulatives as they use Math Hooks activities to explore mathematics in their real world.*

 - *Children will have the opportunity to explore, investigate, estimate, question, predict, and test their ideas about mathematics concepts. The Math Hooks activities involve probing, open-ended questions and a wide variety of approaches.*

 - *Parents and teachers will guide children's learning, rather than insist on how it should be done. Most Math Hooks activities include an extensive communication component. Parents and children will be able to discuss and compare solution strategies, or talk about conceptual understanding, observations, and predictions based on their experiences.*

 - *Children will communicate ideas about mathematics using appropriate terms. Children should be able to discuss their solution strategies, describe their measurement techniques and tools, and convey their decision-making processes. A glossary is included so that you can enable children to use accurate terms in appropriate contexts. This glossary contains terms that children will hear in the course of their formal mathematics education. It is recommended that parents use the same mathematically correct terminology at home that is used in the classroom.*
-

Money, Time and Fractions

- *Identify and show values of coins*
 - *Count simple coin collections*
 - *Tell time*
 - *Use a calendar*
 - *Explore parts of wholes*
 - *Show and name simple fractions*
-

Geometry and Measurement

- *Identify, sort, and describe shapes*
 - *Name shapes and their parts*
 - *Explore measurements of length, capacity, and weight*
 - *Choose the correct tool to measure length, capacity, or weight*
 - *Estimate measurements*
-

Data

- *Read simple tables and graphs*
 - *Organize data into simple tables and graphs*
 - *Sort and compare everyday objects*
 - *Copy and continue patterns*
 - *Create original patterns*
-

Math Hooks 1 is organized by categories so that as your child is focusing on a topic at school, it can be effectively discussed and reinforced at home. Modify the activities to meet the needs of your child. Encourage your child to “take risks” by accepting responses that may not be correct, but that offer a clear vision of his or her thought processes. Guide your child to think and discover. Help your child find the importance of mathematics in his or her daily life.

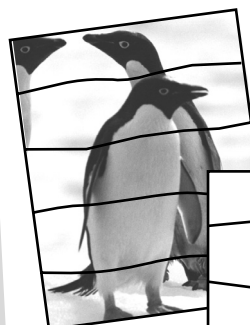


**Numeration
and Number
Sense**

Ordered Picture Puzzles

This activity provides a fun way to explore ordering amounts or numbers. Your child can check his or her own work by putting the puzzles back together after making them.

(Grades K-1)



Magazine picture pasted on cardboard.



Categories: Numeration, Number Sense

Vocabulary: Order

Format: Activity

What you need: Magazines, glue, cardboard, scissors, straightedge, pencil

What to do:

- 1 Have your child cut out a picture from a magazine. The picture should be about the size of a sheet of notebook paper.
- 2 Ask your child to glue the picture to a piece of cardboard.
- 3 Help your child use a straightedge to draw lines about two inches thick widthwise across the back of the cardboard or poster paper.
- 4 Have your child make one dot or a "1" in the top space, two dots or a "2" in the second space, and so on until every section has dots or numerals in increasing amounts.
- 5 Have your child cut along the lines, then place the picture puzzle strips in a pile and mix.
- 6 The puzzle is ready to reassemble. Your child can use the dots or numerals to order the pieces from top to bottom. If the pieces are ordered correctly, your child can turn over the pieces to see the picture as it originally appeared in the magazine.