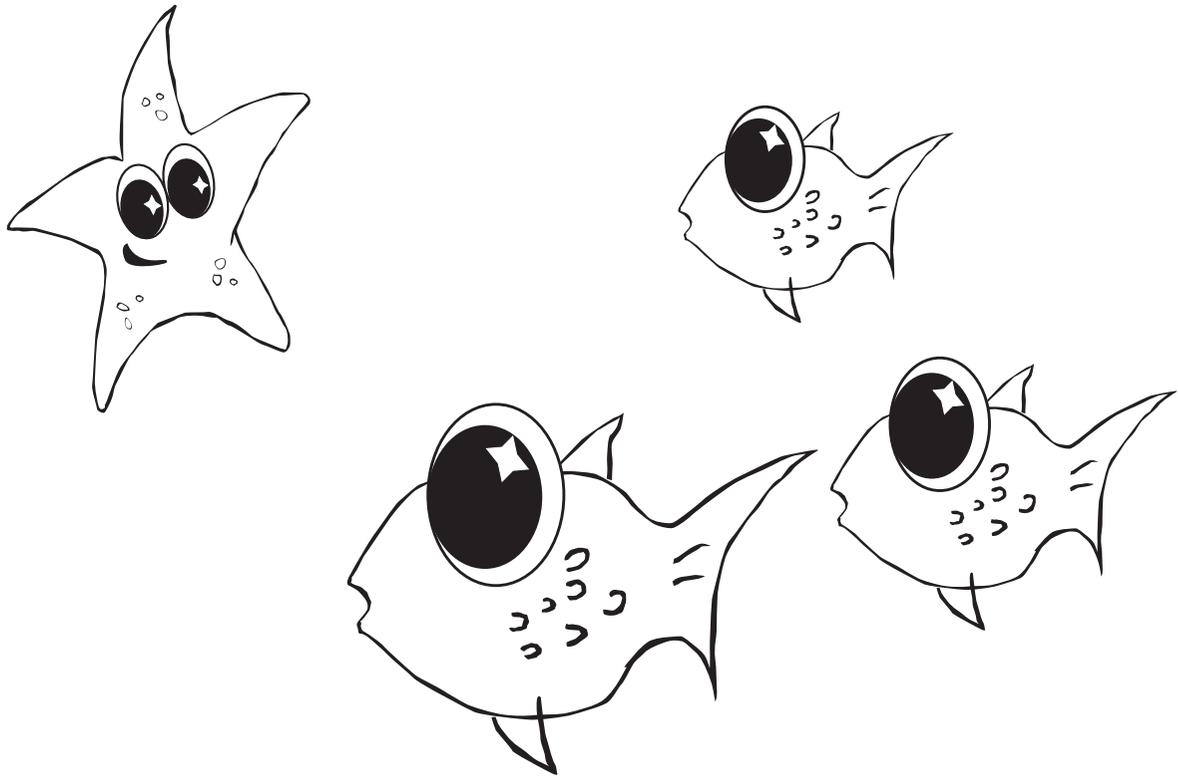


math fun

for Suzuki Families



By Andy J. Felt and George Kung
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Math Fun for Suzuki Families

Part 1: for ages 3–5

Introduction

Part 1 of this book is intended for use by parents who want to give their 3–5 year old child a solid foundation in mathematics. We designed the activities to be, first and foremost, fun. We want you to have fun with your child, while at the same time providing a gift that will last his/her lifetime. Most of the activities are games that you will play with your child.

You should try to arrange it so the child wins more than half the time. In some games, we have made the rules to the child's advantage, but in some, it is up to you. We believe the five to twenty minutes you spend each day doing these activities with your child will become special one-on-one time that you both will look forward to.

Usage

The activities in this book were designed to develop the mathematical skills that most experts believe children should have. The activities should generally be done in the order presented in the book. We suggest that you find a time during each day when you will have twenty minutes to spend with your 3–5 year old. The time commitment is not large, but it should be consistent.

Work each day with your child. Some parents have found it convenient to inject these activities into the middle of an instrument or voice practice. For example, you could alternate between having the child play a song and playing the game for a couple turns. This keeps things lively for the child with respect to both the music practice and the math.

However, be careful not to let Math Fun time take concentration away from the music practice. Our intention is to provide a constructive break when one is needed, not to encourage more frequent or more numerous breaks. One of Dr. Suzuki's goals was to gradually increase the concentration ability of the student. We see Math Fun as a way to help you do this, as a reward for good concentration on the music.

It is important to keep your math time fresh and fun. Therefore, you should vary what you do from day to day. For example, here is a weekly schedule that you might choose:

Sunday: newest activity (the activity that has not yet been mastered)

Monday: previous activity (the activity just before the newest one)

Tuesday: newest activity

Wednesday: choice (any previous activity—the child chooses)

Thursday: newest activity

Friday: choice

Saturday: newest activity

Each child masters skills at different rates. Please be patient. If it seems like the child needs a break from the newest activity, then you may want to review previous activities for a while. Another possibility is to move on to a different new activity, returning to the difficult activity later. Activities that the child found difficult, but now can perform, should be revisited frequently.

The game board

Included in this book is a folded game board, with spaces from -9 to 102. Many of the games in this book use the game board as a simple way to create a race. You and the child will each have a game piece, by which we mean a small object to mark how far the player is along the path. The game piece could be a coin, a button, a small car, or anything.

One of the first activities the child should do is to color and decorate the game board, so as to make it individualized and to generate interest and enthusiasm. S/he can add adventurous areas like a forest, desert or river.

The games played on the game board need not use all the spaces provided. You may start at any convenient space on the board, depending on the game and how much time you have to play. It is intended that the child should usually win, and to that end, many of the games have rules that favor the child. This is not, at first, a good place to teach sportsmanship; you want the child to have fun, win, and look forward to this individual time with you each day.

It has been shown¹ that the simple act of playing games on boards that have numbered spaces improves numerical knowledge in preschool children, and the improvement is longterm.

You will also need

1. Small toys (animals, cars, etc.) or counters, such as coins
2. Paper bag
3. Two six-sided dice
4. A deck of cards
5. Ruler or measuring tape
6. Paper, scissors, glue/glue stick, Popsicle sticks, Elmer's Wood Glue, and small beans
7. Small storage box
8. Mealworms for Exercise 16
9. An opaque cup
10. Pieces of macaroni
11. Cribbage board (optional)

Authors

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George Kung is Professor Emeritus of Mathematical Sciences at the University of Wisconsin – Stevens Point. He received his Ph.D. in Mathematics from the University of Kentucky in 1969, and his M.Ed. in Mathematics Education from Washington State University in 1976.

George spent the 1975–76 school year observing mathematics classes from kindergarten through twelfth grade in the Tacoma School District. He stayed with each class for a nine-week period to observe the teacher and the students. These observations changed the way George taught his own classes thereafter. George’s three sons were also in Suzuki in Stevens Point when they were children.

Motivation

Between them, George and Andy have taught college mathematics for more years than we care to admit. Many times, students have come into our offices and said, “I am just not a math person.” This implies that somehow the student is genetically predisposed to fail at math.

Shinichi Suzuki addressed this topic, saying that every child, given proper instruction, can learn to play a musical instrument. We believe this applies to mathematics as well. Those adults who say they cannot do math have the ability to succeed, but lack confidence because of a lack of success over the years. If we can give a child confidence that s/he can do math, and at the same time give him/her a solid foundation in mathematical skills, we may be able to prevent the negative mathematical self-image that pervades our culture.

Thanks

Many thanks to those who collaborated on this project. Pat D’Ercole gave great advice on Suzuki-related topics, Marge Andersen allowed us to test the activities in her four-year-old kindergarten class, and Allison Bancker gave great feedback from the perspective of a second grade teacher. Thanks also to the UWSP Design Center under the direction of Jillian Noble for the wonderful illustrations and layout.

¹Geetha B. Ramani and Robert S. Siegler, “Promoting Broad and Stable Improvements in Low-Income Children’s Numerical Knowledge Through Playing Number Board Games,” *Child Development*, vol. 79, no. 2, March/April 2008, pp. 375–394.

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The Excellent Race

Concept/skill:

counting up to six

Materials:

game board, two game pieces (could be cars, animals, or anything), six-sided die

Preparation:

none

Directions:

Start with both game pieces at any agreeable location on the board. The child goes first. Each player, in turn, rolls a die and moves his/her game piece forward that many spaces. If the adult rolls a six, s/he must go back six spaces instead of forward. If the child rolls a one, s/he must go back one space instead of forward. When moving, the player must count the number of spaces out loud.

Suggestions and Variations:

When the child rolls the die, try to avoid saying out loud what s/he rolled. If necessary, the child can count the dots on the die. Provide help in counting only if needed to avoid frustration on the part of the child. The idea of this game is just to give the child practice in counting up to six.

A good way to explain the rules is to say that each player has a “backward number,” a number that means that player moves backward. The adult’s backward number is six, and the child’s is one.

If age appropriate, try to get the child to count spaces accurately — not skipping spaces or counting the same space twice. If you use small plastic animals as game pieces, have the animals use their noses to count the spaces and their front paws to mark what space they are on.

2**Catch My Counting Mistake****Concept/skill:**

counting

Materials:

game board, two game pieces (small animals work best for this game), six-sided die

Preparation:

none

Directions:

Tell the child that the animals are learning to count and need a teacher. Start with both game pieces at any agreeable location on the board. The game proceeds as Activity 1 with the following exceptions. There are no backward numbers, so all movement is forward. If one of the players makes a counting mistake and the other player catches it, the other player may move ahead ten spaces. You will want to make mistakes, especially if you get ahead in the race.

Suggestions and Variations:

If you use small animals as game pieces, you can pretend that your animal is the one making the counting mistakes. This is a good opportunity to demonstrate to the child, through his/her pupils, how to accept correction without getting discouraged. When the child is at a higher level, you may want to replace verbal counting with cards that have the numbers on them. Arrange them in an incorrect order or with omissions, and ask the child to catch the mistake.

