



HELPING YOUR
CHILDREN
LEARN AND ENJOY
MATHEMATICS

MATH, READING, AND LANGUAGE TOGETHER

All parents know that reading books and talking to young children promotes their language development. But did you know that children's books and "math talk" can also hook them into learning mathematics? When done in the right way, combining math, reading, and language can enrich you and your children's enjoyment of all three subjects at the same time!

COMBINING READING TIME AND MATHEMATICS LEARNING

To get the most learning out of children's books, with or without a math theme, don't just read the words and turn the pages—ask questions! For example, the book, *The Very Hungry Caterpillar* by Eric Carle, is about a caterpillar that eats his way through the book while counting. You and your child would have a great experience if you just read this book from cover to cover, but good stories often provide opportunities for a parent and child to stop and do math together in a comfortable, enjoyable setting.

The story of the *Very Hungry Caterpillar* begins on Monday when the caterpillar ate through one apple, but was still hungry. Here is the first place in the book where you and your children can explore the story AND do some math. Since most books don't ask questions, you have to make up questions that bring out the math. Don't just turn the page; pause and ask your children questions, such as

"How many things do you think the caterpillar will eat on the next page?"

After your child answers one or more questions, turn the page and continue reading. Be careful not to ask too many questions or your child may lose interest in reading the book. On the next page, the story continues when the very hungry caterpillar ate through two pears, but was still hungry. Here you might stop and ask, "Can you count the pears he ate?"

Once your children are comfortable answering your questions, encourage them to make up and ask their own questions that you can answer or help them answer. Keep reading,



Photo by Paul Giganti, Jr.

asking questions, and doing math, as long as your children stay interested. You don't need to stop on every page—it's important to keep moving so your children don't lose the storyline. If your children get tired, put the book down and pick it up at another time; you don't always need to finish a book in one sitting. Since children have favorite books they like to read over and over, you can read a book again and ask new questions! Always keep in mind that the whole idea is to make math and reading a pleasant experience for you and your children.

THE ROLE LANGUAGE PLAYS IN YOUNG CHILDREN'S MATHEMATICS LEARNING

When infants, toddlers, and preschoolers are introduced to new mathematics concepts, it is important that parents talk with their children about what they are seeing, hearing, and doing.

- You can “talk math” to young children even before they utter their first words. We know toddlers understand many mathematics concepts long before they themselves can talk and tell us what they understand. For example, with the concepts of BIG and LITTLE, if you frequently point out things using the words “big” and “little” to describe them to toddlers even before they begin to talk, one day they will point at something new and say, “big!” They can learn the concept of “big” weeks or months before they can speak the word.
- All people, from birth throughout adulthood, are interested in their bodies. Help little children explore the math of their bodies: count their one nose, one mouth, two eyes, two ears, two hands, two feet, two knees, two thumbs, and ten fingers; then have them count yours!
- Ask children a lot of questions and get them to tell you what they are thinking while doing math. By introducing and using simple math words around young children, parents can help children understand the meaning of numbers, shapes, and other mathematics concepts.
- If your children are English learners, use your home language first, then, if possible, repeat the words in English when explaining a math idea. Hearing an idea in two languages will help children understand that different languages can describe the same concept.

MATH & CHILDREN'S LITERATURE

- Anno's Counting Book*, by Mitsumasa Anno
- Bear in a Square*, by Stella Blackstone (also in Spanish)
- The Button Box*, by Margarette S. Reid
- Caps for Sale*, by Esphyr Slobodkina
- Changes, Changes*, by Pat Hutchins
- Color Zoo*, by Lois Ehlert
- Each Orange Had Eight Slices*, by Paul Giganti
- Fish Eyes*, by Lois Ehlert
- Gray Rabbit's Odd One Out*, by Alan Baker
- How Many Feet in the Bed?* by Diane Hamm
- How Many Snails?* by Paul Giganti
- Is It Larger? Is It Smaller?* by Tana Hoban
- The Line Up Book*, Marisabina Russo
- Math in the Bath*, by Sara Atherlay
- More Than One*, Miriam Schlein
- One Hungry Monster*, by Lynn Munsinger
- One Watermelon Seed*, Celia Barker Lottridge
- Over in the Meadow*, Ezra Jack Keats
- A Pig Is Big*, Douglas Florian
- Rooster's Off to See the World*, by Eric Carle
- Rosie's Walk*, by Pat Hutchins (also in Spanish)
- Round Is a Mooncake*, by Roseanne Thong
- Round Trip*, by Ann Jonas
- Shapes and Things*, by Tana Hoban

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