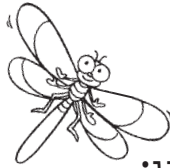




Math Experiences for Young Learners

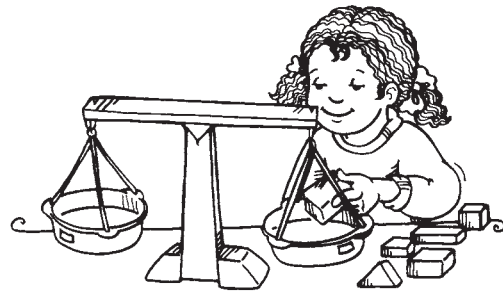
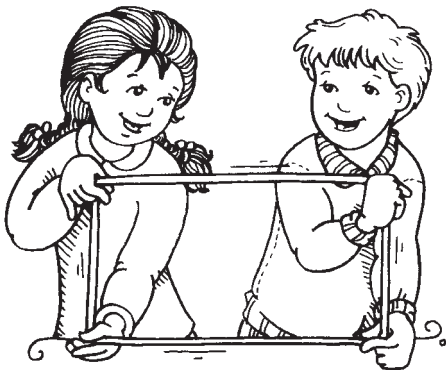


Developmental Activities on Numbers and Counting, Shapes,
Order and Position of Objects, Patterns, and Measurement



by Marilee Woodfield

illustrated by Janet Armbrust



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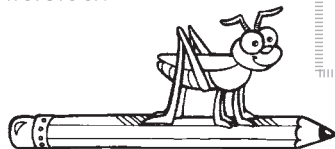
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Making Little Books

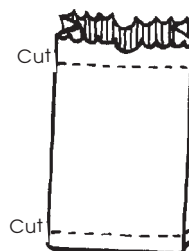
Whether stapling a couple of pieces of together or creating a fanciful bound volume, children love making their own books. The following ideas for different kinds of little books are easy to make and children will love them. Be sure to have on hand various little books (common mini-books, shape books, paper bag books, and bound books) so that children can use them during those times when they are interested in "writing" their own math stories or recording some of their math ideas.



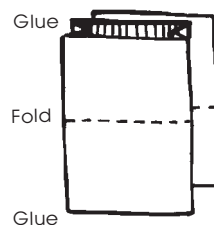
Paper Bag Book—This book can be large or small, depending on the size of the paper bags.

1. Open up two paper bags and cut off the bottom of each one. Also, trim off the tops to make clean edges. (See diagram A.)
2. Flatten each bag. Glue the bottom and top openings closed to make flat pages. (See diagram B.) Alternatively, the edges of the bags can be left open to create pockets that can hold an "About the Author" card, illustrations that slide out from inside the pockets, etc.
3. Stack the two bags on top of one another and then fold them in half the short way. Staple along the fold.
4. Glue 6 in. (15 cm) pieces of ribbon to the front and back flaps. (See diagram C.) Tie the ribbons together to keep the little book closed.

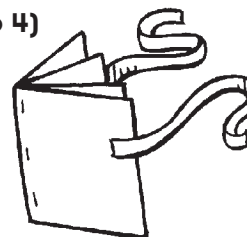
A (Step 1)



B (Steps 2 and 3)



C (Step 4)





Making Little Books

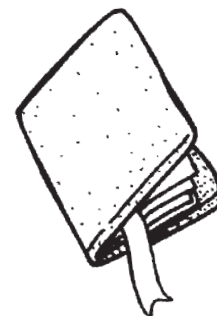
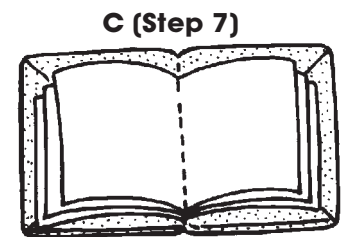
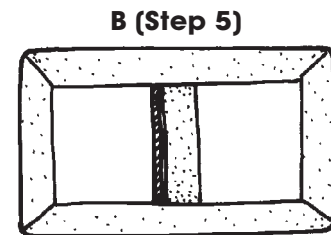
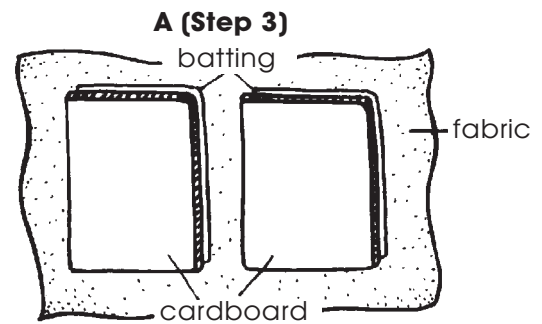
Shaped Book—Any common shape can be turned into a shaped book.

1. Make one copy of the shape you wish to use.
2. Stack four or five blank pages behind the shape. Staple (or secure with a metal brad) through all layers of paper.
3. Cut through all thicknesses of paper along the outline of the shape to give the book a recognizable shape. (See illustration on right.)



Bound Book—Produce a real, bound book covered with fabric by following the steps below.

1. Cut two pieces of cardboard that are slightly larger than your book-page size.
2. Cut two pieces of quilt batting the same size as the cardboard. Glue one to each piece of cardboard.
3. Lay a piece of fabric facedown on the table. Place the two pieces of cardboard, batting side down, side by side on the fabric. Leave a small gap about $\frac{1}{8}$ in. (3 mm) between the cardboard pieces. (See diagram A.)
4. Cut the fabric 1 in. (25 mm) longer and wider than the edges of the cardboard pieces.
5. Stretch the fabric over the cardboard edges and secure with hot glue. (See diagram B.)
6. Make a stack of several sheets of paper. Fold the stack in half to make a guide for stitching the pages to the cover (as directed in step 7). If necessary, trim so that the pages are smaller than the cardboard book cover.
7. Lay the pages on top of the cardboard cover. Carefully stitch down the middle of the papers and the cover with a sewing machine. Be sure to use craft thread and a long stitch. (See diagram C.)
8. Glue the first page of the book to the inside front cover and the last page to the inside back cover to hide the ragged edges of the fabric. Add a ribbon bookmark if desired.





Lining Up with Math Fun

While Lining Up . . .

Children can find their places by playing math games. The following are some activity suggestions:

Patterns—As children line up, have them create patterns with common attributes: the clothes they are wearing, the color of their hair, or other characteristics. Begin with simple ABAB patterns, such as “boy, girl, boy, girl.” When appropriate, increase the difficulty of the task, such as creating an AAB pattern like, “sneakers, sneakers, boots.” If interested, use props, such as colored cards or attribute blocks, that children can hold to build the desired pattern.

Sorting and Classifying—At first, use one attribute, such as color of shirt, tie shoes, or whether or not they are wearing socks to indicate whose turn it is to line up.

When appropriate, incorporate a second characteristic to increase the difficulty, such as children who are wearing both socks and red shirts, etc.

Sequential or Ordinal—Have children line up by height—tallest to shortest or shortest to tallest. You might use ordinal numbers as children line up if you are working with a small group. For example, say, “Danny line up first. Shekira line up second.” Alternatively, have children say the number that is *one more* or *one less* than the number you call out. For example, if Ryan is given the number “five,” ask him to tell you the number that is one more than five as he takes his place in line.

Identifying Shapes—Create shape cards or shape necklaces and have children line up according to the shapes they are holding.

Identifying Numbers—Number cards can be used in the same way as the shape cards above. One game idea might include having children clap their hands the corresponding number of times as written on their cards. Alternatively, choose a child to be the line leader who rolls a die and asks the

corresponding number of children to line up at a time.

Puzzles—During a transition time, give each child a piece of a selected jigsaw puzzle. Then, as children line up, each one places the given piece in its proper place to complete the puzzle. The activity is finished when all of the children have lined up.

“Picto-line”—Take a digital photograph of each child. Have the line leader “shuffle” the photographs like cards and then invite children to line up in the order of the photos.

While Waiting in Line . . .

Children might spend the time playing number games. Ideas include the following:

- Count up to 10 (or another number) and then back to 0.
- Count by 2s or 5s.
- Hold up a number of fingers behind your back and have children take turns guessing how many fingers are extended. If needed, offer clues to help them guess the number.
- Have children guess a “mystery” number. For example, say, “I am thinking of a number that is one more than . . .” or “I am thinking of a number that is one less than . . .” (*Mental comparison activities can be very challenging for children. Encourage them to use their fingers to figure out the mystery number.*)
- Count up and stop at a predetermined number. Have children call out the next number in order.
- Say a number (1–10) and have children hold up the corresponding number of fingers. Increase the speed as children master the skill.
- Chant a favorite finger play or action rhyme. See page 13 for some suggestions.