



Tips for Read-Alouds in Math





Table of Contents

Table of Contents 2

Adapted from Building Blocks 3

Highly Suggested Books 7

 Number 9

Groups, Collections, and Specific Numbers..... 16

 Snow White and the Seven Dwarfs..... 16

Comparing Number 17

Ordinal Numbers 17

The “Plus One” Pattern 18

Adding, Subtracting, and Composing Numbers..... 18

Large Numbers 19

Fractions..... 20

Geometry 20

Spatial Concepts and Positional Terms..... 20

Shapes..... 21

Shape Composition 24

 Measuring Size 25

 Length 25

 Area, Volume, and Weight..... 25

 Time 26

 Patterning 26

 Classifying and Graphing..... 27

Prepared by the Marsico Institute for Early Learning and Literacy

Morgridge College of Education, University of Denver

1999 East Evans Avenue, Suite 160

Denver, Colorado 80208

© 2018 Marsico Institute for Early Learning and Literacy and learningtrajectories.org

ALL RIGHTS RESERVED



Adapted from Building Blocks

Pause & Ponder:

- *How do your students currently interact with texts, the teacher, and other children during classroom read-alouds? How might those ways of interacting affect children's construction of mathematical ideas?*

Children construct ideas about mathematics through participating in everyday routines and through interactions with caring adults. Shared book reading is an activity that helps children relate how mathematics can fit into their own lives. However, reading books to children out loud is *not* sufficient for accelerating mathematics vocabulary development and comprehension – the *way* we share books with children matters. Children must be actively involved in asking and answering questions as well as making predictions or inferences if we want to strengthen children's capacities for mathematical thinking and reasoning.

The recommendations you find here are based on a systematic review of studies conducted by researchers and the wisdom of practitioners.

Recommendation 1: BOOK SELECTION

Pause & Ponder: Take a look at the books available in your classroom and school library.

- *Are there any books in your classroom or library where a mathematical topic or idea is part or central to the plot of the narrative?*
- *Are there any biographies of scientists or mathematicians?*
- *Are there any informational/expository books or manuals?*
- *Are there any books that you and the children are fond of that you could mathematize and revisit?*

Reading aloud can introduce children to books and types of literature – poetry, short stories, biographies – that children and families might not discover on their own. Be intentional about the book you select to share, as the type of text and genre of book you select influences the responses and reactions of your children (Price, van Kleeck, & Huberty, 2009).

The plot of books will not always contain explicit mathematical content. In such instances, you can *mathematize* parts of the story. Mathematizing, simply stated, is to treat a subject or problem in mathematical terms. In other words, it is the process of viewing and expressing an event, problem, or relationship through a mathematical lens.



Books (and book reading) can be mathematized in three ways. In *text-dependent books*, the story plot or ideas cannot advance without an understanding of the mathematics. Mathematics may not be a central aspect of the plot in *idea-enhancing books*, but they do offer opportunities for children to deepen their understanding of a particular mathematical idea or concept. Finally, *illustration-exploring books* contain pictures that lend themselves to the exploration of mathematical concepts (whether the text highlights or mentions them).

Also consider using non-fiction, or expository books. Such books contain text structure, visual design features, linguistic features, abstract concepts, and vocabulary that differentiates them from storybooks (Price, van Kleeck, & Huberty, 2009).

Resources

Hitz, A., & Smith, A. (2013). Mathematizing read-alouds in three easy steps. *The Reading Teacher*, 67(2), pp. 103-108.

- The authors describe their process for how teachers can mathematize book reading through three steps. They also offer an example using an instance of reading aloud *The Hungry Caterpillar*.

Recommendation 2: QUALITY OF INTERACTIONS

Pause & Ponder:

- *What is typically the focus of discussion during read-alouds in your classroom? To what degree do you focus on asking analytic questions?*
- *What mathematics do I need to know (and perhaps revisit) to support and scaffold children's learning?*

High quality shared book reading experiences is characterized by the back-and-forth rhythm of how adult and child fit into the others actions and needs. We recommend that adults focus their attention on the *emotional* quality of shared book reading. Warm, affectionate interactions with adults in the context of shared book reading can be associated with love of books and motivation to read, as well as early language and literacy outcomes (e.g., Bingham, 2007; Cline & Edwards, 2012; Sonnenschein & Munsterman, 2002). Emotionally responsive adult behaviors include:

- (a) warmth and sensitivity to the child's cues and interests (e.g., joint attention on where the child is pointing);
- (b) adult use of strategies to increase child enjoyment (e.g., such as reading with expression); and
- (c) adult involvement and enjoyment, evidenced by smiling, laughter, and book-related talk.

Instructional behaviors include pointing to pictures, labeling, asking questions, and offering additional information (see Fletcher & Reese, 2005 for a review). Extra-textual talk (conversation that goes beyond



reading the text to engage the child) benefits children’s learning, especially if that talk moves beyond simply labeling pictures and elicits children to make predictions about story plot and character motivation, and other conversations that inspire higher-order thinking and reasoning (e.g., “What would you do if you were in that situation?”).

Research suggests three kinds of extra-textual talk is used with young children: (1) Print-related comments and questions, (2) Content-based comments and questions, and (3) Praise and feedback. Print- and content-related extra-textual talk has varying levels of cognitive demand. Table 1 contains the type of comments and questions that can be used in the context of shared book reading along with an example. The comments or questions at the top of the table and increases in cognitive demand.

Table 1
Examples of Extra-Textual Talk of Varying Levels of Cognitive Demand

Questions and Comments about Print and Reading Conventions	
Print Conventions	<i>“Do you see the numbers?”</i>
Reading Conventions	<i>“As we read from left to right, the numbers get larger.”</i>
Questions and Comments about Mathematics Content	
Summarizing	
Explanation	
Hypotheses	
Making Inferences and Predictions	
Praise and Feedback	

Recommendation 3: FOCUS IN ON VOCABULARY

Pause & Ponder:

- *How do you introduce and talk about new words in stories?*
- *When do you introduce and talk about new words? Prior to the story? The middle? The end?*
- *What are some of the mathematical ideas or language you hear in class every day? In what way can this language be connected to formal mathematical concepts you are reading about?*

Reading aloud introduces the language of books, which differs from language that children hear in everyday conversation and dialogue in television, video games, and movies. The language found in books is more descriptive and will typically contain more formal grammatical structures. Two read-aloud practices that support vocabulary development is to (1) define new words while reading, as well as (2) encourage children to use these words and phrases when answering questions or while discussing characters or events in the story. Thus, interactive read alouds offer opportunities to enhance the *breadth* (volume of known words) and *depth* (how well words are known) of functional vocabulary (Lennox, 2013). To “know” what a word means is also to have a keen sense of how that word is situated



within a broader network of concepts as well as how a word's meaning can vary (Neuman & Dwyer, 2009).

A good starting point is to identify the words children will need to make meaning of to make sense of the story. Once you have identified these words, be sure to define and talk about the target word in multiple ways. Consider providing repeated exposure to those words, and engage children in back-and-forth conversations that can help to consolidate their understanding of the target word(s).

Commenting on the meaning of words or asking children what he/she thinks the word means are both beneficial (Blewitt & Langan, 2016). Defining the words before, during, or after reading the story is also beneficial (Jimenez & Saylor, 2017). What matters for vocabulary development during one-on-one interactive book reading sessions is adult verbal responsiveness: verbal replies to children's actions or speech that are *prompt* (immediate), *contingent* (connected to the behavior or actions of the child), and *appropriate* (positively connected to the child's actions or behavior) (Tamis-LeMonda, Cristofaro, Rodriguez, & Bornstein, 2006).

Recommendation 4: EXTENDING THE MATHEMATICAL CONVERSATION BEYOND SHARED READING EXPERIENCES

Pause & Ponder:

- *What are some of the ways that I can make children's thinking about the mathematics in the story visible?*
- *What are some of the activities I can do so that children have opportunities to practice using the mathematics vocabulary from the story?*

Giving children time and space to process the content of the story, develop tools to understand the content on their own terms, or experience it in a new way can consolidate understanding or yield new insight. Here are some ideas on how to extend mathematical experiences beyond shared reading time.

- Retell or dramatize the story with props or manipulatives.
 - Acting out the story with friends and props/manipulatives serves to make abstract ideas and relationships concrete.
 - Larson & Rumsey (2017) provides an example of how manipulatives can be meaningfully integrated into book reading.
- Read several books on the topic (and make them available in the classroom library).
- Make thematic objects available for free play/exploration.
 - Provides an opportunity for children to act on what they know or understand, and perhaps elaborate upon that understanding.
- Have children write their own story.
 - Writing as well as drawing – letters, numerals, and shapes – are an object of knowledge (before it conveys knowledge). To understand this “object,” children must deconstruct and reconstruct the rules of the system.



Suggested Books for Early Childhood Mathematics: From the *Building Blocks* Project

Books are a wonderful way to engage children in mathematics. This *Appendix* gives suggestions for reading books and for using them to introduce and develop mathematical ideas. This list is organized into several sections, as described below.

Highly Suggested Books

- 1) *One Was Johnny: A Counting Book*, by Maurice Sendak. (HarperCollins Publishers, 1962/1990).
A wonderful counting book that is also a good story. Johnny becomes increasingly frustrated as more characters interrupt his reading. His solution? Count backwards!
- 2) *The Shape of Things*, by Dayle Ann Dodds (Candlewick Press, 1994). A particularly well-liked book that includes a variety of (not just “typical”) examples of shapes and combining shapes.
- 3) *I Spy Two Eyes: Numbers in Art*. Devised and selected by Lucy Micklethwait (New York: Harper Trophy, reprinted October 1998). Numbers and counting in real works of art.
- 4) *The Very Hungry Caterpillar*, by Eric Carle. (Putnam Publishing Group, 1969). The classic story involving counting, in simple lines, the numbers 1 to 5.
- 5) *Too Many Eggs*, by M. Christina Butler (Boston: David Godine, 1988). A book about a bear that did not know how to count.
- 6) *Blueberries for Sal*, by Robert McCloskey (New York: Puffin Books, 1948/1976). We use this for an introduction to counting sounds.
- 7) *The Right Number of Elephants*, by Jeff Sheppard, illustrated by Felicia Bond (New York: Harper Collins Juvenile Books, reprinted June 1992). A funny counting book, with the right number of elephants for various situations (e.g., shade at the beach). Proceeds backward from 10.
- 8) *Miss Spider’s Tea Party* by David Kirk (Scholastic, 1994). Read *Miss Spider’s Tea Party*, then re-read the “six” page to re-introduce these activities. Have six children sit at a table (real or pretend) and have other children place just enough plates, napkins, etc. Challenge them to figure out how many they need before they start putting them around the table. Discuss how they knew it was just the right number.
- 9) *Three Tales of Three*, by Marilyn Helmer, illustrated by Chris Jackson (Goldilocks and the Three Bears, The Three Billy Goats Gruff, The Three Little Pigs). (Niagara Falls, NY: Kids Can Press: One-Upon-A-Time, 2000). (Any version of these stories will be fine!)



- 10) *Rooster's Off to See the World*, by Eric Carle (Aladdin Library, reprinted June 1999). This is good for counting and also emphasizes the “plus one” pattern.
- 11) *Albert's Alphabet*, by Leslie Tryon, Aladdin Library, Sept. 1994). Albert must find ways to construct the alphabet out of blocks and whatever other materials he can find.
- 12) *Changes, Changes*, by Pat Hutchins (Random House, UK distribution, 1992). When a fire burns down a block building, two toy people rebuild part of the house into a fire engine. More transformations occur until the original house is rebuilt. Good for transformations and shape composition.
- 13) *Over in the Meadow* by J. Langstaff & F. Rojankovsky (Harcourt, 1957). Verbal counting from 1 to 10 using the traditional poem or song. Also, *Over in the Meadow* by Olive A. Wadsworth, illustrated by Mark Maki Rae (New York: Viking Kestrel, 1985).
- 14) *1 Hunter*, by Pat Hutchins (New York: William Morrow, reprinted Sept. 1986). This counting book features a “clueless” hunter who is eventually chased by up to 10 animals. Count each collection that the hunter does not see. Later, for addition, ask, “How many animals chased him in all?”
- 15) *Harold and the Purple Crayon*, by Crockett Johnson (Harper Collins: Juvenile Books, May 1981). Harold draws paths with his crayon, creating adventures.
- 16) *10 Minutes Till Bedtime*, by Peggy Rathmann (New York: Putnam Publishing Group JUV, board edition Sept. 2001). During the countdown to bedtime, an ever-growing family of hamsters arrives and complicates preparations. Can you use numerals to identify the same hamster from one page to the next? You may recognize characters from the author's other books.
- 17) *Hippos Go Berserk!*, by Sandra Boynton (New York: Little Simon, 2000). Hippos keep coming to a party until there are so many that they go “berserk.” Then they leave. Act out the story and create your own adding and subtracting problems.
- 18) *Shapes in transportation*, by Jennifer Rozines Roy and Gregory Roy (New York: Marshall Cavendish/Benchmark).
- 19) *One is a Snail, Ten is a Crab*, by April Pulley Sayre and Jeff Sayre, illustrated by Randy Cecil (Cambridge, MA: Candlewick Press, 2003).



Number

- 1) *A Million Dots*, by Andrew Clements, illustrated by Mike Reed (New York: Simon & Schuster, 2006). An interesting book about "big numbers." Like other books, this book shows a million. However, the dots are the background to pictures that illustrate information relating to the cumulative number of dots. For example, dot number 238,857 is circled, and we are told that it is 238,857 miles from the earth to the moon. Thus, a sense of larger and larger numbers is simultaneously developed via the dots and scientific information.
- 2) *City 1 2 3*, by Zoran Milich (Toronto, ON: Kids Can Press, 2005). In one way, a "typical" counting book with pages that go from 1 to 10, featuring numerals and things to count. This book features both numerals and items to count that occur very naturally in the scene.
- 3) *1 Hunter*, by Pat Hutchins (New York: William Morrow, reprinted Sept. 1986). This counting book features a "clueless" hunter who is eventually chased by up to 10 animals. Count each collection that the hunter does not see. Later, for addition, ask, "How many animals chased him in all?"
- 4) *10 Bears in my Bed: A Goodnight Countdown*, by Stan Mack. (New York: Random House Sept 1974). A variation on the "rollover" counting song.
- 5) *10 Minutes Till Bedtime*, by Peggy Rathmann (New York: Putnam Publishing Group JUV, board edition Sept. 2001). During the countdown to bedtime, an ever-growing family of hamsters arrives and complicates preparations. Can you use numerals to identify the same hamster from one page to the next? You may recognize characters from the author's other books.
- 6) *100th Day Worries*, by Jessica Worries and Cuyler Margery, illustrated by Arthur Howard. (New York: Simon & Schuster, 2000). Jessica worries about what collection of 100 things she can bring in to celebrate the 100th day of school.
- 7) *26 Letters and 99 Cents*, by Tana Hoban (New York: Harper Trophy, reprint Aug. 1995). Counting to 99, including making the number more than one way with coins.
- 8) *A Cache of Jewels and Other Collective Nouns*, by Ruth Heller (New York: Puffin Feb. 1998).
- 9) *Animal Orchestra: A Counting Book*, by Scott Gustafson (Greenwich Pr Ltd, Aug. 1996). This is a simple counting book featuring animals playing instruments.



- 10) *Anno's Counting Book*, by Mitsumasa Anno (New York: Harper Trophy, reprint Oct. 1986). This picture book features the numbers from 1 to 12, represented by numerals and illustration of manipulatives.
- 11) *Anno's Math Games II*, by Mitsumasa Anno (New York: Philomel Books, 1989).
- 12) *Bat Jamboree*, by Kathi Appelt, illustrated by Melissa Sweet (Harper Trophy, reprint Sept. 1998). Counting from 1 to 10 and back again with "performing" bats.
- 13) *Blue's Felt Friends*, by Angela C. Santomero, illustrated by Traci Paige Johnson. (New York: Simon & Schuster, board edition, July 1998). Count the shapes.
- 14) *Blueberries for Sal*, by Robert McCloskey (New York: Puffin Books, 1948/1976). This can be used as an introduction to counting sounds and rhythmic patterns.
- 15) *Brian Wildsmith's 1, 2, 3's*, by Brian Wildsmith. (Millbrook Pr Trade, Sept. 1995). Counting geometric shapes.
- 16) *Count and See*, by Tana Hoban (New York: Simon & Schuster JUV, Apr. 1972). A simple counting book with great photographs.
- 17) *Count-a-saurus*, by Nancy Blumenthal, illustrated by Robert Jay Kaufman (New York: Simon & Schuster, Mar. 1989). This book includes counting dinosaurs to 10 and accurate dinosaur information.
- 18) *Sorting (Math Counts)*, by Henry Pluckrose (Chicago: Children's Press, 1995). Counting all kinds of objects. Setting the table. Counting different units, such as *pairs* of gloves or missing items. Zero. Counting and keeping track.
- 19) *Counting Cranes*, by Mary Beth Owens (Boston: Little, Brown, 1993). Children count illustrations of the whooping crane from 1 to 15, learning that at one time there were only 15 whooping cranes left in the world and that this population is increasing.
- 20) *Counting Penguins*, by C. W. Howe (Harper & Row, 1983). The pictures in this counting book invite discussion of the ideas that a number coming later in the count sequence represents a larger quantity.
- 21) *Counting Wildflowers*, by Bruce McMillan (New York: William Morrow, 1986). ISBN 0-688-02859-4. Count the beautiful flowers and compare the "tens format" number representation with the "tens and fives" formats the activity uses. Also, use this to talk about "keeping track" strategies, as some of the flowers are, naturally, in unordered arrangements.



- 22) *Each Orange Had 8 Slices*, by Paul Giganti Jr., illustrated by Donald Crews (New York: Harper Trophy, reprint Apr. 1999). Use these multiplication situations for skip counting.
- 23) *Feast for 10*, by Cathryn Falwell (New York: Clarion Books, 1995). An African-American family goes grocery shopping, counting items, then counting to 10 again in preparing the food to be eaten.
- 24) *Fiesta (English and Spanish)*, by Ginger Fodlesong (RAYO, board edition, Mar. 2003). Teaches counting and vocabulary in Spanish and English.
- 25) *Fish Eyes: A Book You Can Count On*, by Lois Ehlert (San Diego, CA: Harcourt Brace & Co., 2001). Counting fish, but also “plus me (the narrator fish) makes...” $N + 1$. Good for beginning counting on.
- 26) *Five Little Ducks*, illustrates by Pamela Paprone. (New York: North-South Books, 1997).
- 27) *Five Little Monkeys Jumping on the Bed*, by Eileen Christelow. (New York: Houghton Mifflin Co., board edition Mar. 1998).
- 28) *Frog Counts to Ten*, by John Liebler. (Brookfield, CT: The Millbrook Press, 1004).
- 29) *From One to One Hundred*, by Teri Sloat (Scott Fresman (Pearson K-12), reprint May 1995)).
“You can find as many of these objects [printed on the bottom] in the picture as the number of the page” from 1 to 100!
- 30) *Hippos Go Berserk!*, by Sandra Boynton (New York: Little Simon, 2000). Hippos keep coming to a party until there are so many that they go “berserk.” Then they leave. Act out the story and create your own adding and subtracting problems.
- 31) *How Many Are in This Old Car?*, by Colin and Jacqui Hawkins (New York: Harper Trophy, 1994). One after another gets in, counting up to 10, with lots of rhyming.
- 32) *How Many Snails?*, by Paul Giganti Jr., illustrated by Donald Crews (New York: Harper Trophy, 1994). Counting things, including different subcategories of things, such as different colors of flowers in the meadow. Each page in this book is filled with pictures of snails, books, dogs, toys, or cupcakes. Children are asked to classify the objects by attributes listed on each page and to count the result. Counting only some of the objects is an important skill.
- 33) *How many, How Many, How Many*, by Rick Walton, illustrated by Cynthia Jabar (Cambridge, MA: Candlewick Press, 1993). Counting with nursery tales and other traditions, with a surprise challenge at the end.



- 34) *I Can Count the Petals of a Flower*, by John and Stacey Wahl (Reston, VA: NCTM, 1985).
- 35) *I Spy Two Eyes: Number in Art*, devised and selected by Lucy Micklethwait (New York: Harper Trophy, 1998). Numbers and counting in real works of art.
- 36) *Let's Count It Out, Jesse Bear*, by Nancy White Carlstron, illustrated by Bruce Degen (Aladdin Library, 2001). Counting to 20.
- 37) *Little 1*, by Ann and Paul Rand (Harry N. Abram, reissued 1991). Little numeral "1" is lonely, "Go away" say a pair of pears, "2 is company, but 2 plus 1 is 3, and that would be a crowd." Good for introducing counting on.
- 38) *Little Rabbit's First Number Book*, by Alan Baker (New York: Kingfisher Books, 1998) and *Grau Rabbit's 1, 2, 3*, by Alan Baker (New York: Kingfisher Books, 1999). Simple counting to 10.
- 39) *Lunch*, by Denise Fleming (Henry Holt & Co, 1998).
- 40) *Max's Dragon Shirt*, by Rosemary Wells (New York: Puffin, reissue 2000). Max wants to spend his money on a dragon shirt rather than on the pants he was supposed to buy, and he does not have enough money for both.
- 41) *Miss Bindergarten Celebrates the 100th Day of Kindergarten*, by Joseph Slate, illustrated by Ashley Wolff. (Puffin, 2003). Read this on that special day.
- 42) *Miss Spider's Tea Party*, by David Kirk (Scholastic, 1994). Read *Miss Spider's Tea Party*, then re-read the "six" page to re-introduce these activities. Have six children sit at a table (real or pretend) and have other children place just enough plates, napkins, etc. Challenge them to figure out how many they need before they start putting them around the table. Discuss how they knew it was just the right number.
- 43) *Moja means one*, by Muriel Feelings, illustrated by Tom Feelings (New York, the Dial Press, 1971).
- 44) *Mouse Count*, by Ellen Stoll Walsh (San Diego: Red Wagon Books, board edition 1995). A snake captures ten mice to eat...but they escape! It seems a bit too realistic, with a snake counting mice to eat, but it ends well, and children love it.
- 45) *Mouse Mess*, by Linnea Asplind Riley (Scholastic, 1997).
- 46) *My Love for You: All Year Round*, by Susan L. Roth (Dial Books for Young Readers, 2003). My love for you is, for example, bigger than 3 elephants! For the youngest child.



- 47) *My Steps* by Sally Derby, illustrated by Adjoa J. Burrowes (Lee & Low Books, 1996). A child tells about her front steps, her favorite place to play. She engages in different activities for different seasons. Concepts of ordinal numbers, ordering, season, and more. It's a good introduction to the *Building Blocks* "Build Stairs" activity.
- 48) *My Visit to the Dinosaurs*, by Aliko (New York: Harper Trophy, 1969/1985). This is not a counting book but does have age-appropriate information about dinosaurs including many mathematical facts.
- 49) *Numbears: A Counting Book*, by Kathleen Hague, illustrated by Michael Hague (New York: Henry Holt and Company, 1999).
- 50) *Numbler*, by Suse MacDonald and Bill Oakes (Dial Books, 1988).
- 51) *On the Stairs*, by Julie Hofstrand Larios, illustrated by Mary Hofstrand Cornish (Asheville, NC: Front Street, 1999). Numbers steps with ordinal and cardinal numbers. It's a good introduction to the *Building Blocks* "Build Stairs" activity.
- 52) *One Cow Coughs: A Counting Book for the Sick and Miserable*, by Christine Loomis, illustrated by Pat Bypold (New York: Ticonderoga and Fields Books/ Houghton Mifflin, 1994).
- 53) *One Duck Stuck*, by Phyllis Root, illustrated by Jane Chapman (Candlewick Press, 2001).
- 54) *One Hungry Monster: A Counting Book in Rhyme*, by Susan Heyboer O'Keefe, illustrated by Lynn Munsinger (Boston: Little, Brown and Company, 2001). A rhyming book presents the difficulties of a boy with an increasing number of increasingly hungry (and ill-behaved) monsters.
- 55) *One is a Snail, Ten is a Crab*, by April Pulley Sayre and Jeff Sayre, illustrated by Randy Cecil (Cambridge, MA: Candlewick Press, 2003).
- 56) *One Lonely Seahorse*, by Saxton Freymann and Joost Elffers (New York: Arthur A. Levine Books/Scholastic, 2000). A counting book including illustrations of sea animals created with food items.
- 57) *One Potato: A Counting Book of Potato Prints*, by Diana Pomeroy (Voyagers, 2000). A counting book of potato prints. Counting to 10, then by 10's to 100.
- 58) *One Tortoise, Ten Wallabies: A Wildlife Counting Book*, by Jakki Wood (New York: Simon & Schuster, 1994).



- 59) *One Was Johnny: A Counting Book*, by Maurice Sendak. (HarperCollins Publishers, 1962/1990).
A wonderful counting book that is also a good story. Johnny becomes increasingly frustrated as more characters interrupt his reading. His solution? Count backwards!
- 60) *One, Two, Three, Count With Me*, by Catherine and Laurence Anhold (Puffin, 1996). Counting up to 100.
- 20) *Over in the Meadow* by J. Langstaff & F. Rojankovsky (Harcour, 1957). Verbal counting from 1 to 10 using the traditional poem or song.
- 21) *Over on the Farm*, by Christopher Gunson (New York: Scholastic, 1997).
- 22) *Rooster's Off to See the World*, by Eric Carle (Simon & Schuster JUV, reissue Aug. 1991). This is good for counting and emphasizes the "plus one" pattern.
- 23) *Shape Space*, by Cathryn Falwell (Beacon Press, 1992).
- 24) *Six Sandy Sheep*, by Judith Ross Enderle, illustrated by John O'Brien (Honesdale, PA, Boyds Mill Press, 1997). See also *Six Snowy Sheep*. Simple counting backward from 6.
- 25) *Ten Black Dots*, by Donald Crews (Harper Trophy, Sept. 1995). Simple counting to 10, showing the dots in a context. It also illustrates circles.
- 26) *Ten Cats and Their Tales*, by M. Lehman (Hole and Co., 1982).
- 27) *Ten Go Tango*, by Arthur Dorros (New York: Harper Collins, 2000).
- 28) *Ten Little Rabbits*, by Virginia Grossman, illustrated by Sylvia Long (San Francisco: Chronicle, 1998). Ten rabbits in authentic Native American blankets from five different tribes. The patterns woven into the blankets are labeled with the name of the corresponding tribe and information about its cultural traditions.
- 29) *Ten Sly Piranhas*, by William Wise, illustrated by Victoria Chess (New York, Dial Books for Young Readers, 1993). Subtitled, "*A Counting Story in Reverse (A Fable of Wickedness and Worse!)*," this book involves counting backward, as piranhas eat each other. Perhaps not for the weak!
- 30) *Ten, Nine, Eight*, by Molly Bang (New York: Greenwillow, 1998). Children count backward as they get ready for bed.
- 31) *The Count Counts Scary Things*, by Stephanie St. Pierre, illustrated by Richard Walz (Bt. Bound, Oct. 1999).
- 32) *The Icky Bug Counting Book*, by Jerry Pallotta (Waterown, MA: Charlesbridge, 1992). From 0 to 26, this counting book features different bugs and provides scientific information about them.



- 33) *The M&M's Brand Chocolate Candies Counting Book*, by Barbara Barbieri McGrath (Watertown, MA: Charlesbridge Publishing, 1997). Counting, adding, and subtracting with the famous candy.
- 34) *The Midnight Farm*, by Reeve Lindbergh, illustrated by Susan Jeffers (E. P. Dutton, 1987). A more subtle counting book, most appropriate if you're trying to get young children to rest!
- 35) *The Right Number of Elephants*, by Jeff Sheppard, illustrated by Felicia Bond (New York: Harpercollins Juvenile Books, 1992). Funny, counting book, with the right number of elephants for various situations (e.g., shade at the beach). Proceeds backward from 10.
- 36) *The Silly Story of Goldie Locks and the Three Squares*, by Grace Maccarone, illustrated by Anne Kennedy (New York: Cartwheel Books, 1996).
- 37) *The Three Little Javelinas*, by Susan Lowell, illustrated by Jim Harris (Flagstaff, AZ: Rising Moon, 2003). This version of "The Three Little Pigs" is published in English and Spanish. It uses wonderful vocabulary to describe the building materials the javelinas use to construct their houses, and they don't use bricks, sticks, or straw! Use the illustrations to talk about the materials these javelinas use, and how they compare to the materials with which the children are familiar.
- 38) *The Three Little Pigs*, by James Marshall (E. P. Dutton, 1989). This popular version of this famous tale uses specific vocabulary for describing the pig's houses. Use it to start a discussion of the words you use to describe the building materials and structures in your classroom.
- 39) *The Very Hungry Caterpillar*, by Eric Carle. (Putnam Publishing Group, 1969). The classic story involving counting, in simple lines, the numbers 1 to 5.
- 40) *Three Tales of Three*, by Marilyn Helmer, illustrated by Chris Jackson (Goldilocks and the Three Bears, The Three Billy Goats Gruff, The Three Little Pigs). (Niagara Falls, NY: Kids Can Press: One-Upon-A-Time, 2000).
- 41) *Too Many Eggs*, by M. Christina Butler, illustrated by Meg Rutherford (Boston: David Godine, 1994). This book features a bear who initially cannot count.
- 42) *Two Ways to Count to Ten*, by Ruby Dee, illustrated by Susan Meddaugh. (New York: Henry Holt and Company, 1990). A Liberian folktale in which a clever animal wins by counting by 2's.
- 43) *Uno, Dos, Tres (English/Spanish)*, by Pat Mora, illustrated by Barbara Laralee (Houghton Mifflin, 2000).



- 44) *Up to Ten and Down Again*, by L. C. Ernst (William Morrow and Company, Inc., 1995). Practice forward and backward counting and keeping track of which objects have been counted in a picnic setting.

Groups, Collections, and Specific Numbers

Note: See also all the books in Number that deal with “three” (bears, pigs, etc.).

- 1) *How Many Twos*, by Judy Hindley, illustrated by Steve Bland (Doubleday, New York, 1991). How many twos (eyes, ears, tusks) on various animals? How many threes in a 3-ring circus? Continues up to 10.
- 2) *More Than One*, by Miriam Schlein, illustrated by Donald Crews (New York: Greenwillow, 1996). Learn about groups and the numbers in them. “Can one be more than 1?” Yes, as we see: One pair of shoes is two shoes, one week is seven days, and so on.
- 3) *What Comes in 2’s, 3’s, and 4’s?*, by Suzanne Aker, illustrated by Berni Karlin. (Aladdin Library, 1992). Except for illustrating a triangle with a slice of pizza, a good mathematics book.

Other books on specific numbers:

Two by Two by Barbara Reid

Four Famished Foxes and Fosdyke by Pamela Duncan Edwards

Five Ugly Monsters by Tedd Arnold

Five Little Monkeys Jumping on the Bed by Eileen Christelow

Five Little Ducks by Pamela Paparone

Six-Dinner Sid by Inga Moore

Snow White and the Seven Dwarfs

8 O’Cluck by Jill Creighton

Ten Black Dots by Donald Crews (see above)



Feast for 10 by Cathryn Falwell

Ten Cats Have Hats by Jean Marzollo

10 for Dinner by Jo Ellen Bogart

4) *Math-terpieces*, by Greg Tang, illustrated by Greg Paprocki (New York: Scholastic, 2003).

Arithmetic based on the paintings of famous artists. For 5-year-olds and a bit older, these are arithmetic puzzles. For 9-10+ year-olds, combinatorics come into play.

Comparing Number

- 1) *Just Enough Carrots*, by Stuart J. Murphy, illustrated by Frank Remkiewicz (Scott Foresman, 1997). Comparing amounts of carrots in bunches. It also includes worms and peanuts, which the bunny wants fewer of! Then he finds that his other bough those because elephant and bird are coming over for lunch.

Ordinal Numbers

- 1) *Henry the Fourth*, by Stuart J. Murphy, illustrated by Scott Nash (HarperCollins Publishers, 1999). Henry has a dog show, and various dogs are brought on 1st, 2nd, etc. Then, Henry, the 4th won't come out, but finally does.
- 2) *Learning to Read* series includes student books with simple and repetitive text. It includes a teacher resource guide with activities to go with each story. Titles include "Barney Bear Gets Dressed" (activities around discrete math, logical thinking, and problem-solving), "I See Patterns" (activities around patterns, connecting math to the real world, and shapes and math vocabulary such as horizontal, vertical, and diagonal).
- 3) *Seven Eggs*, by Meredith Hooper (London, England, Harper Festival, 1992). From Monday to Sunday, eggs named in ordinal order hatch.



The “Plus One” Pattern

Note: Most counting books can be used to focus on the “plus one” pattern; these are especially good.

- 1) *A Farmer’s Dozen*, by S. J. Russell (Harper & Row, 1982). A farmer starts out alone and through additions (e.g., marriage, the birth of a child, the adoption of a stray dog) ends up with a dozen people and animals. It introduces the term “dozen” and emphasizes the pattern of “one more.”
- 2) *Fish Eyes: A Book You Can Count On*, by Lois Ehlert (San Diego, CA: Harcourt Brace & Co., 2001). Counting fish, but also “plus me (the narrator fish) makes...” $N + 1$. Good for beginning counting on.
- 3) *Rooster’s Off to See the World*, by Eric Carle (Aladdin Library, reprinted June 1999). This is good for counting and also emphasizes the “plus one” pattern.
- 4) *One is a Snail, Ten is a Crab*, by April Pulley Sayre and Jeff Sayre, illustrated by Randy Cecil (Cambridge, MA: Candlewick Press, 2003).

Adding, Subtracting, and Composing Numbers

- 1) *The Grapes of Math*, by Greg Tang, illustrated by Harry Briggs (New York: Scholastic, 2001). This engaging book promotes the intelligent use of counting strategies and arithmetic.
- 2) *12 Ways to Get to 11*, by Eve Marriam, illustrated by Bernie Karlin (New York: Simon & Schuster, 1996).
- 3) *Anno’s Counting House*, by Mitsumasa Anno (Putnam Pub Group JUV, 1982). In it, 10 little people move from one house to another. With each page, the author invites you and the children to find out how many children are in each house, or how many are shown through the windows or not shown (not in a window). See the “Note to Readers” in the front of the book.
- 4) *Little 1*, by Ann and Paul Rand (Harry N. Abram, reissued 1991). Little numeral “1” is lonely, “Go away” say a pair of pears, “2 is company, but 2 plus 1 is 3, and that would be a crowd.” Good for introducing counting on.
- 5) *Mission: Addition*, by Loreen Leedy (New York: Holiday House, 1998). Ms. Prime introduces addition to her class.



- 6) *Take Away Monsters*, by Colin Hawkins (Toronto, Canada: Piccadilly Press, 1984). Originated and published in Great Britain by Piccadilly Press. Pull-out book with good action and numeric sentences both changing.
- 7) *Ten Sly Piranhas*, by William Wise, illustrated by Victoria Chess (New York, Dial Books for Young Readers, 1993). Subtitled, “*A Counting Story in Reverse (A Fable of Wickedness and Worse!)*,” this book involves counting backward, as piranhas eat each other. So it may be used to introduce subtraction, as could other books that count backward.

Large Numbers

- 1) *100th Day Worries*, by Jessica Worries and Cuyler Margery, illustrated by Arthur Howard. (New York: Simon & Schuster, 2000). Jessica worries about what collection of 100 things she can bring in to celebrate the 100th day of school.
- 2) *A Million Fish...More or Less*, by Patricia C. McKiassack, illustrated by Dena Schutzer (Random House Children’s Books, 1996). Telling tall tales in the bayou. Ask your class how much room a million fish would take up. How many wagons would be needed to haul them? How much would they weigh? How large would a 500-pound turkey be? And so forth.
- 3) *Counting on Frank*, by Rod Clement (Gareth Stevens Publishing, 1991). A fun introduction to large numbers and number and measurement estimation. For example, an average ball-point pen draws a line seven thousand feet long across the wall (and Dad!) before the ink runs out. Suitable for older and more advanced children.
- 4) *From One to One Hundred*, by Teri Sloat (Scott Foresman (Pearson K-12), reprint May 1995)). “You can find as many of these objects [printed on the bottom] in the picture as the number of the page” from 1 to 100!
- 5) *How Much is a Million?*, by David M. Schwartz, illustrated by Steven Kellogg (Harper Trophy, 1993). Different ways to understand a million.
- 6) *Millions of Cats*, by Wanda Gag (New York: Puffin, 1996)
- 7) *Miss Bindergarten Celebrates the 100th Day of Kindergarten*, by Joseph Slate, illustrated by Ashley Wolff. (New York: Puffin, 2003). Read this on that special day.



Fractions

- 1) *Eating Fractions*, by Bruce McMillan (New York: Scholastic, 1991). Simple fractions are illustrated with a healthy emphasis on the whole! Good, simple book of halves, thirds, fourths with pictures of food. For even the youngest children.
- 2) *Giraffe and a Half*, by Shel Silverstein (New York: HarperCollins, 1975). This book introduces measuring the length and measuring half of a given length.

Geometry

Spatial Concepts and Positional Terms

- 1) *Becca Backward, Becca Frontward: A Book of Concept Pairs*, by Bruce McMillan (New York: William Morrow, 1986). Top/bottom, near/far, and other concept pairs are illustrated in photographs of Becca.
- 2) *Left of Right?*, by Karl Rehm and Kay Koike. (Clarion Books, 1994). Simple, repetitive practice of identifying if an object is on the right or left side of the page.
- 3) *Over, Under, & Through and Other Spatial Concepts*, by Tana Hoban (New York: Aladdin Library, 1987). Photographs illustrate spatial terminology.
- 4) *Rosie's Walk*, by Pat Hutchins (Scott Foresman, 1971). Rosie goes for a walk but doesn't realize that a fox is after her. Still, she seems to do just fine! Emphasizes spatial locations (over, under, past, etc.) and can be used to introduce a navigation walk. Talk about the cover. What is going on? What do you think is going to happen next?
- 5) *The Secret Birthday Message*, by Eric Carle (New York: HarperCollins Juvenile Books, Sept. 1991). Children read a map to find a birthday surprise.
- 6) *The Tree House*, by Roberta Brown and Sue Carey, illustrated by Doug Cushman (New York: Scholastic, 1994). A good introduction to relational terms, on a walk to a tree house.



Shapes

- 1) *A Kiss is Round*, by Blossom Budney (William Morrow, May 1977).
- 2) *Albert's Alphabet* (New York: Atheneum, L. Tryon, 1991). Albert must find ways to construct the alphabet out of blocks and whatever other materials he can find.
- 3) *Anno's Math Games II*, by Mitsumasa Anno (Paper Star, reprint Sept. 1997).
- 4) *Apes Find Shapes*, by Jane Belk Moncure (Children's Press, 1988).
- 5) *Baby Bop Discovers Shapes*, by Stephen White, illustrated by Larry Daste (Lyrick board edition, Dec. 1993).
- 6) *Bear in a Square*, by Stella Blackstone, illustrated by Debbie Harter (Kingfisher Chambers, Sept. 1999). Simple shapes.
- 7) *Building a House*, by Byron Barton (Bt. Bound, Oct 1999). Find shapes in buildings.
- 8) *Buildings that Changed the World*, by Klaus Reichold, Bernard Graf, and Christopher Wynne (Prestel USA, 1999).
- 9) *Circles, Triangles, and Squares*, by Tana Hoban (Simon & Schuster, 1974). Photographs of these shapes in the world. Mixes 3-dimensional and 2-dimensional shapes; take care to distinguish between these.
- 10) *Frog and Toad Are Friends*, by Arnold Lobel (Scholastic, 1970). The adventurous Frog and cautious Toad talk about moths of the year and attributes of objects' shapes, among other things.
- 11) *Harold and the Purple Crayon*, by Crockett Johnson (Harper Collins: Juvenile Books, May 1981). Harold draws paths with his crayon, creating adventures.
- 12) *If You Look Around You*, by Fulvio Testa (New York: E. P. Button, 1987).
- 13) *Into the Sky*, by Ryan Ann Hunter, illustrated by Edward Miller and Elizabeth G. Macalaster (Holiday House, 1998).
- 14) *Learning to Read* series includes student books with simple and repetitive text. It includes a teacher resource guide with activities to go with each story. Titles include "Barney Bear Gets Dressed" (activities around discrete math, logical thinking, and problem-solving), "The Costume Parade" (activities around ordinal numbers and logic), and "I See Patterns" (activities around patterns, connecting math to the real world, shapes and math vocabulary such as horizontal, vertical, and diagonal).



- 15) *Let's learn Shapes with Shapely*, by S. Keller and I. Goldberg (Great Neck, NY: Creative Adaptations for Learning, Inc., 1997). A wonderful book for blind or visually impaired students.
- 16) *Manhattan Skyscrapers*, by Norman McGrath, photography by Eric Peter Nash (New York: Princeton Architectural Press, 1999).
- 17) *My Very First Book of Shapes*, by Eric Carle (Harper Festival, May 1991). This is difficult to find. Use DLM Math's *Shape Flip Book* as a substitute. A small boy who likes the shape of things notices all the circles he encounters in his environment and learns to recognize squares, cubes, and rectangles.
- 18) *Round Things Everywhere*, by Seymour Reit (New York: McGraw-Hill, 1969). Photographs of a boy discovering round shapes in his environment.
- 19) *Sea Shapes*, by Suse MacDonald (New York: Voyager Books, 1998).
- 20) *Seven Blind Mice*, by Ed Young (Scholastic Inc., May 1999).
- 21) *Shape*, by Henry Pluckrose (Chicago: Children's Press, 1995). Begins with feeling the book (a square) and comparing it to many shapes in the environment.
- 22) *Shape Flip Book*, by Douglas H. Clements and Julie Sarama, illustrated by Brenda Stynres (SRA/McGraw-Hill, 2003). See the BLM Math software disk. Match shape to objects in the world.
- 23) *Shape Space*, by Cathryn Falwell (Beacon Press, 1992). A girl makes objects of various shapes.
- 24) *Shapes and Things*, by Tana Hoban (Simon & Schuster, 1991). Common objects placed on photograph paper, thus showing silhouettes.
- 25) *Shapes in Nature*, by Judy Feldman (Chicago: Children's Press, 1991). Shows shapes in nature and the shape that is the abstraction above it.
- 26) *Shapes, Shapes, Shapes*, by Tana Hoban (Bt. Bound, July 2003).
- 27) *So Many Circles, So Many Squares*, by Tana Hoban (New York, Greenwillow Books, 1998). Photographs of these shapes in the world. Mixes 3-dimensional and 2-dimensional shapes; take care to distinguish between these.
- 28) *Ten Black Dots*, by Donald Crews (Harper Trophy, Sept. 1995). Simple counting to 10, showing the dots in a context. It also illustrates circles.
- 45) *The Greedy Triangle*, by Marilyn Burns, illustrated by Gordon Silveria (New York: Scholastic, Inc., 1995). A more sophisticated book about a shape that wants more sides.



- 46) *The Shape of Things*, by Dayle Ann Dodds, illustrated by Julie Lacome (Candlewick Press, 1994).
A particularly well-liked book that includes a variety of (not just “typical”) examples of shapes and combining shapes.
- 47) *The Silly Story of Goldie Locks and the Three Squares*, by Grace Maccarone, illustrated by Anne Kennedy (New York: Cartwheel Books, 1996).
- 48) *The Village of Round and Square Houses*, by Ann Grifalconi (Boston: Little, Brown, 1986). The book sounds fanciful, but is a true story of the village of Tos in Central Africa, in which men live in square houses and women live in round houses. You can discuss the shapes and even compare two building designs for their strengths and weaknesses.
- 49) *The Wing on a Flea: A Book About Shapes*, by Ed Emberly (Boston: Little, Brown and Company, reissue May 1988). A triangle is the wing on a flea, a beak on a bird, a fin on a fishtail, and so on.
- 50) *There’s a Square: A Book About Shapes*, by Mary Serfozo, illustrated by David A. Carter (Cartwheel Books, Feb. 1996).
- 51) *Up Goes the Skyscraper!*, by Gail Gibbons (Simon & Schuster, 1986). This book tells the story of building a skyscraper through drawings and brief text. It introduces machines and the jobs of the designers and the construction crew.
- 52) *What is Square?*, by Rebecca K. Dotlich (Harper Festival, 1999). Bright photographs of square objects.
- 53) *What’s the Shape?: Big Book*, by R. W. Alley, illustrated by Judy Nayer, edited by Linette Ellis (Newbridge Educational Publishing, Jun. 1997).
- 54) *Shapes in transportation*, by Jennifer Rozines Roy and Gregory Roy (New York: Marshall Cavendish/Benchmark).



Shape Composition

- 1) *A Pair of Socks*, by Stuart J. Murphy, illustrated by Lois Ehlert (Bt. Bound, Oct. 1999).
- 2) *Architecture: Shapes*, by Michael Crosbie and Steve Rosenthal (John Wiley & Sons, Jun. 1995).
Shapes are shown next to photographs of architectural elements.
- 3) *Building a House*, by Byron Barton (Bt. Bound, Oct. 1999). This book covers each step of the house-building process, from digging the hole for the foundation to the moment the family moves in. The pictures and simple language make this book accessible to the youngest children.
- 4) *Changes, Changes*, by Pat Hutchins (Random House, UK distribution, 1992). When a fire burns down a block building, two toy people rebuild part of the house into a fire engine. More transformations occur until the original house is rebuilt. Good for transformations and shape composition.
- 5) *Grandfather Tang's Story*, by Ann Tompert, illustrated by Robert Andrew Parker (Dragonfly, reprint 1997). An introduction to tangram puzzles.
- 6) *Lottie's New Beach Towel*, by Petra Mahers (Bt. Bound, 2001). Lottie gets a new beach towel but doesn't recognize how handy it will be! She uses it to walk across hot sand (and uses a pattern to do so) and solves science and mathematics problems throughout the story.
- 7) *Make a Bigger Puddle, Make a Smaller Worm* (two separate, but similar books), by Marion Walter (New York: M. Evans, 1972). Children can solve problems by placing mirrors on simple pictures. These creative books introduce reflection and symmetry.
- 8) *Picture Pie 2: A Drawing Book and Stencil*, by Ed Emberley (Boston, Little, Brown, and Company, 1996). A good book for combining shapes to make pictures. Others by the same author are also good.
- 9) *The Shape of Things*, by Dayle Ann Dodds (Candlewick Press, 1994). A particularly well-liked book that includes a variety of (not just "typical") examples of shapes and combining shapes.
- 10) *Up Goes the Skyscraper!*, by Gail Gibbons (Simon & Schuster, 1986). This book tells the story of building a skyscraper through drawings and brief text. It introduces machines and the jobs of the designers and the construction crew.



Measuring Size

- 1) *Is it Larger? Is it Smaller?*, by Tana Hoban (William Morrow, 1985). Photographs with no words.
- 2) *Little, Big, Bigger*, by Beth Clure and Helen Rumsey, illustrated by Jacques Rupp (Glendale, CA: Bowmar, 1968). Turn each page and see the shapes increase in size.
- 3) *The Very Grouchy Ladybug*, by Eric Carle (Distribooks Intl., 2002). Includes time and relative size concepts as the grouchy ladybug learns some manners.

Length

- 1) *Giraffe and a Half*, by Shel Silverstein (New York: HarperCollins, 1975). This book introduces measuring the length and measuring half of a given length.
- 2) *How Big is a Foot?*, by Rolf Myller (Atheneum, 1962). The King wants to give the Queen a bed for her birthday but doesn't know how big the bed should be. The King and the Apprentice both use the feet to determine the length of the bed, but...they have different sizes of feet.
- 3) *Inch by Inch*, by Leo Lionni (New York: Astor-Honor, Inc., 1962). An inchworm convinces a hungry robin not to eat him by saying that he is useful because he measures things. (Available in Spanish).
- 4) *Short Train, Long Train*, by Frank Asch (Scholastic Press, 1992). This book shows long/short concept through different pictures—only one train—others are nose, dog, tail, walkway, car.

Area, Volume, and Weight

- 1) *Mighty Maddie* by Stuart J. Murphy, illustrated by Bernice Lum (New York: HarperCollins, 2004). Madeline has a birthday party in 2 hours, but there are toys everywhere. Dad carries the heavy things (even if they are small, like a full piggy bank), Maddie the light things (even if they are large, like a pillow).
- 2) *How Many Bugs in a Box?*, by David Carter (New York: Little Simon, 1988). A pop-up counting book which could also be used to introduce estimation and measurement of area and capacity.
- 3) *Just a Little Bit*, by Ann Tompert, illustrated by Lynn Munsinger (Boston: Houghton Mifflin, 1993). An elephant can't seem to get enough animal friends on the other side of the seesaw. This could be used to introduce weights on balances.



Time

- 1) *Chicken Soup with Rice*, by Maurice Sendak (New York: Scholastic Books, 1986). A tape is available as well.
- 2) *Clocks and More Clocks*, by Pat Hutchins (Simon & Schuster, Mar. 1994). Mr. Higgins keeps buying more clocks to ensure that the ones he has are right because it takes him a while to run from one to the next.
- 3) *Frog and Toad Are Friends*, by Arnold Lobel (Scholastic, 1970). The adventurous Frog and cautious Toad talk about moths of the year and attributes of objects' shapes, among other things.
- 4) *House for Hermit Crab*, by Eric Carle (Simon & Schuster, 1991).
- 5) *One Monday Morning*, by Uri Shelevitz (Demco Media, 1986). A boy gets an imaginary visit from the royal dignitaries from a deck of cards...more each day of the week.
- 6) *Time to...*, Bruce McMillan (New York: Lothrop, Less & Shepard Books, 1989). A simple introduction to time, the way it should be done in the classroom.
- 7) *Today is Monday*, by Eric Carle (Puffin, 1997). The classic song, illustrated. Available in big book format.
- 8) *When This Box is Full*, by Patricia Lillie, illustrated by Donald Crews (New York: Greenwillow Books, 1993). A box is filled with memorabilia through the months.

Patterning

- 1) *Bein' With You This Way*, by W. Nikola-Lisa, illustrated by Michael Bryant (Lee and Low Books, 1995). This book contains complex rhythmic patterns and emphasizes diversity. It includes different parts of the body and how they are different from one person to another. Repeat it again and again, having children join in when they can. Then act out the rhythmic patterns and represent these patterns in other ways. (Also available in Spanish: *La Alegría de Ser Tú y Yo*).
- 2) *I See Patterns*, by Linda Benton, illustrated by John Peck (Cypress, CA: Creative Teaching Press, 1995). Visually clear patterns in photographs of objects in the world.
- 3) *Learning to Read* series includes student books with simple and repetitive text. It includes a teacher resource guide with activities to go with each story. Titles include "Barney Bear Gets



Dressed” (activities around discrete math, logical thinking, and problem-solving), “I See Patterns” (activities around patterns, connecting math to the real world, and shapes and math vocabulary such as horizontal, vertical, and diagonal).

- 4) *Mr. Noisy’s Book of Patterns*, by Rozanne Lanczak Williams, illustrated by Kathleen Hunne (Cyprus, CA: Creative Teaching Press, 1996). Mr. Noisy does everything in auditory patterns.

Classifying and Graphing

- 1) *A Cache of Jewels and Other Collective Nouns*, by Ruth Heller (New York: Puffin Feb. 1998).
- 2) *Hannah’s Collections*, by Marthe Jocelyn (New York: Dutton Children’s Books, 2000). Hannah has to figure out which of her many collections to take to school. A marvelous book about collections, with a new mathematics idea, from classification to arithmetic, on every page. It is a nice introduction to “guess my rule” games.
- 3) *How Many Snails?*, by Paul Giganti Jr., illustrated by Donald Crews (New York: Harper Trophy, 1994). Counting things, including different subcategories of things, such as different colors of flowers in the meadow. Each page in this book is filled with pictures of snails, books, dogs, toys, or cupcakes. Children are asked to classify the objects by attributes listed on each page and to count the result. Counting only some of the objects is an important skill.
- 4) *More Than One*, by Tana Hoban (William Morrow, 1981). Not much mathematics, but an illustration of collective nouns.
- 5) *Sorting All Sorts of Socks*, by Betsy Franco (Mountain View, CA: Creative Publications, 1997). This book introduces many ways to classify socks, with a sense of humor.