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Developing Basic Mathematics Skills Through the use of African-American Children's Literature

Lorraine Moses Stewart

According to Farris (1993), quality children's literature, especially picture books, can be very helpful in teaching social studies concepts to elementary and middle school students. Children's literature can also be instrumental when teaching mathematical concepts.

Several African-American picture books have been discussed in previous issues of *Teaching Children Mathematics* in reference to quilting and recognizing patterns. For example, Smith (1995) explains Courtini Wright's *Jumping the Broom* (1994) and how it was used in a third grade classroom to connect problem-solving and patterns with social studies. In a later issue, Smith (1995) explores patchwork quilts and mathematics through the use of Valerie Flournoy's *The Patchwork Quilt*, (1985) Deborah Hopkinson's *Sweet Clara and the Freedom Quilt*, (1993) and Faith Ringgold's *Aunt Harriet's Underground Railroad in the Sky* (1992).

The main emphasis of these articles is solving problems by examining quilt patterns. There are many other mathematical skills that can be taught using African-American literature that need to be addressed. The focus of

this article is to discuss some of those books and how they can be used to teach elementary students. Some of the first mathematical skills elementary students are taught are rote counting, counting to identify how many, and reading and writing numerals and number words 0 to 10. *Feast for 10, Majo Means One: Swahili Counting Book, One Smiling Grandma* and *Ten, Nine, Eight*, are excellent books for enforcing these basic mathematical skills.

Each of these books focus on counting to 10 even though they use different approaches. For example, Cathryn Falwell's *Feast for 10* (1993) is an excellent counting book that tells the story of an African-American family who shop, prepare, and share a meal together. It not only counts from 1 to 10, but also counts backwards from 10 to 1. In addition, it has both the numeral and the number word on each page. The numbers and colors are bright and bold; therefore, likely to be eye catching for young children.

This book also provides an interdisciplinary perspective regarding healthful eating through some of the foods shown such as "five kinds of beans" and "six bunches of the greens." A family's unity and working together is also shown throughout the story as the family grocery shop, cook, set the table, and sit down to eat together.

Molly Bang's *Ten, Nine, Eight* (1983) and Ann Marie Linden's *One Smiling Grandma* (1992) are similar to *Feast for Ten* in that they both count to 10. Yet, unlike *Feast for Ten*, neither of the aforementioned two books count both forward and backwards. *Ten, Nine, Eight* counts backwards from 10 to 1 while *One Smiling Grandma* only counts forward from 1 to 10.

Ten, Nine, Eight is a great bedtime story for teachers to recommend to parents. It is the story of a little girl and her father preparing for bed. It is also a Caldecott Honor book.

One Smiling Grandma is a Caribbean story that not only uses number words to count to 10, but each number word teaches something about life in the Caribbean. For example, "Seven conch shells I find on the beach" shows a little girl lying on the beach listening to the conch shell's ocean sound. This approach is very much like that of *Moja Means One: Swahili Counting Book* by Muriel Feelings (1971). It too teaches about culture through counting, but focuses on the African instead of Caribbean culture. It also presents each number written in the Swahili African language. This enables students to learn about and compare Swahili to English.

Dinner at Aunt Connie's House by Faith Ringgold (1993) can also be used to teach counting. In this story, Cassie and her cousin Lonnie find Aunt Connie's twelve talking pictures of African-American women leaders in her attic. Obviously, it would be very important for the teacher to help early elementary students understand that "No" pictures do not talk, but "Yes" these are real people and real stories. Once that point has been made clear, several mathematical concepts such as addition and subtraction can be explored through problem solving. For example, "If Cassie removed two of Aunt Connie's pictures from the attic and Lonnie removed one, how many would she have left?" Further research could be done on each of the women to integrate a social studies perspective. Upper grade elementary students could complete research projects on the twelve women to enhance their knowledge of contributions African-American women have made to America.

The *Village of Round and Square Houses* by Ann Grifalconi (1987) is an African folktale that can be used to teach likenesses and differences in figures. This folktale of how houses came to be round and square can add mystery and fun to basic mathematical shapes. Students could make their own villages of round and square houses of different sizes then discuss and compare their differences.

Recognizing and telling the value of different coins is another mathematical skill young children are taught that can be reinforced through the use of African-American picture books. *The Hundred Penny Box* by Sharon Bell Mathias (1986) and Angela Shelf Medearis' *Picking Peas for a Penny* (1990) are both ideal books to use to discuss pennies. Emphasis could be placed on concepts such as how many pennies does it take to make a dollar, how many pennies will be left if 10 are removed from the box of 100, and what is the value of a penny. A comparison can also be done of the value of a penny now and the value years ago.

Making reasonable estimates of "how many" is a mathematical skill that can be taught through the use of African-American literature also. Lenny Hort's book *How Many Stars in the Sky?* and Patricia McKissack's *A Million Fish ... More or Less* (1992) are both books that emphasize estimating. Students could be given other items to guess "how many" such as a jar of marbles or peas. They could also have a long term project of collecting one million bottle tops or pennies in one given location in the school to show what one million actually looks like.

Other suggested uses

In addition to suggestions (Smith, 1995) discussed as to how to use *The Patchwork Quilt* to teach patterns, this book can also be used to explore intergenerational ties and family

history. It is a story of a family who learns to appreciate its history by finishing a quilt started by their grandmother, who is too ill to complete it. As the family members look at the completed quilt, they are able to reflect on the previous year because it was made of various cloth pieces from clothing they wore during the year. Additionally, Anne Shelby's *We Keep a Store* (1990) would be appropriate when discussing family businesses and working together. This is the story of a family who owns and operates a community store. Students could be taught about supply and demand, buying and selling, and basic counting through the use of this story.

African-American literature has a great deal to offer as an enhancement to the elementary curriculum. It provides many colorful stories that can be infused into the elementary curriculum and provide meaning and diversity while teaching mathematics and other subjects.

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NCTE Names Orbis Pictus Award Winner

The selection committee for the 1997 Orbis Pictus Award for Outstanding Nonfiction for Children has announced its winner. It is *Leonardo da Vinci*, written by Diane Stanley, published in 1996 by William Morrow and Company. The award is presented by the National Council of Teachers of English. Also named were three 1997 Orbis Pictus Honor Books: *Full Steam Ahead: The Race to Build a Transcontinental Railroad*, written by Rhoda Blumberg, published in 1996 by National Geographic Society; *The Life and Death of Crazy Horse*, written by Russell Freedman, drawings by Amos Bad Heart Bull, published in 1996 by Holiday House; and *One World, Many Religions*, written by Mary Pope Osborne, published in 1996 by Alfred A. Knopf.

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