

Citation metadata

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Date: Mar. 2003
From: Teaching Children Mathematics(Vol. 9, Issue 7)
Publisher: National Council of Teachers of Mathematics, Inc.
Document Type: Article
Length: 2,814 words

Main content

Article Preview :

Discourse in mathematics instruction has received considerable attention since the Standards were first published (NCTM 1989, 1991, 2000); however, prompting mathematical discussions and creating an environment that fosters discourse are challenging tasks for teachers (Corwin 1996). Moreover, students who are not used to talking about mathematics may be uncomfortable with or reluctant to participate in discussions. Discourse in mathematics involves expressing and justifying mathematical thinking and ideas. The primary purposes of facilitating discourse are to help students become aware of others' perspectives and strategies, and to clarify and expand students' own thinking and approaches (NCTM 2000).

Children's literature involving mathematics creates a natural context for talking about mathematics (see Hellwig, Monroe, and Jacobs [20001; Moyer [2000a, 2000b]). Because teachers and students are accustomed to using books for discussion in other subjects, such as social studies and language arts, using literature in mathematics might help teachers who are just beginning to incorporate mathematics discussions in instruction to create an environment that promotes discourse. Moreover, teachers who already use discourse in mathematics find that literature offers another opportunity for students to make meaning and build connections between mathematics and their lives (Austin 1998; Moyer 2000a).

To explain how literature can serve as a fertile ground for fostering discourse communities in mathematics, we offer four examples of books to read aloud with a class and use in mathematical discussions. Although any of these books could be used to develop a mathematics activity, we are focusing on the mathematics discussions that might emanate from using such books in instruction. We have selected recent titles from various grade levels in order to expose readers to newer, high-quality literature for teaching and learning mathematics.

A Pig is Big

Summary

Florian (2000) wrote *A Pig Is Big* in rhyme and painted simple watercolor illustrations that appeal to young children. The book begins with the question "What's big?" On the next page, we find an answer to the question: a pig. The story continues with each page asking for something that is bigger. For example, after asking, "What's bigger than a cow?" Florian writes:

A car. It's bigger than a cow by far. Inside a car a cow can squeeze And drive a pig to town with ease.

The story builds to bigger and bigger things and ends with the universe as the "biggest thing of all. Compared to it all things seem small." We recommend this book for prekindergarten through first grade.

Standards addressed and review of the book

This book incorporates the Measurement Standard in an enjoyable rhyming story and uses an appropriate approach for children. The story invites the reader to compare and order the size of objects and understand that size is a relative property; for example, a pig may be big, but it is small compared to the universe. Throughout the book, Florian exposes children to measurement terms such as wide, dimensions, miles, feet, magnitude, and girth. Although children may be unfamiliar with some of these words, they still can appreciate the story....

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