ARTICLES FROM PRACTITIONER-ORIENTED JOURNALS


ABSTRACT: A standards-based approach to mathematics involves using story problems to allow students to investigate a solution. This approach emphasizes an understanding of concepts and processes and assumes mastery of basic computation skills. This article will encourage teachers to continue teaching standards-based mathematics and to take advantage of available training to produce students who are better prepared in mathematics and who enjoy the process.


ABSTRACT: Part of a special issue on teaching and learning the concepts of data and chance in the middle school. An activity that involves students comparing data sets by using data about 37 brands of peanut butter and their quality ratings is presented. The testing of the peanut butter, the graphing of the data, the determination of outliers, and the extension of the data analysis are discussed.


ABSTRACT: This article describes how two middle school teachers incorporated algebraic thinking into their textbook-based geometry lessons. One teacher embedded algebraic concepts within an existing textbook lesson while the other teacher elicited algebraic thinking by extending a textbook lesson.


ABSTRACT: Describes a way to introduce and use mathematical language as an alternative to using vocabulary lists to introduce students to mathematical language in mathematics classrooms. Draws on multiple representations and student language.


**ABSTRACT**: The writer examines the role that mathematical definitions can play in the middle grades math classroom, focusing on the concept of angle as it was introduced to sixth-grade students.


**ABSTRACT**: Through professional development activities involving action research, middle-grades teachers at this author's school learned how to honor students' prior knowledge and experience by finding out about their K-5 computational development. Rather than complaining about what their students did not know, they learned to appreciate results from their K-5 instruction. These results seem to indicate more conceptual understanding, a strong number sense, and increased computational flexibility than they had seen in the past. In this article, the author shares the data and the process that middle-grades teachers undertook to learn about their students. She describes how middle-grades teachers used the Connected Mathematics Project (CMP) for mathematics instruction. Overall, the process of learning about the computational knowledge that students bring to middle school has highlighted the importance of flexibility.


**ABSTRACT**: This article introduces prediction as a useful tool to promote mathematical reasoning. First, the article addresses prediction expectations in state standards and gives examples. It also provides a classroom example and activities to illustrate what prediction can look like and how it can serve as a building block for the development of students' reasoning abilities. Second, the article suggests some ideas to teachers that promote reasoning when prediction is incorporated into mathematics lessons. (Contains 1 table and 3 figures.)


**ABSTRACT**: The writers describe a weeklong series of lessons with their sixth graders that used bicycle racing as both a motivator and a context for thinking about rate of change and the shapes of graphs.


**ABSTRACT**: Part of a special section on mathematics teaching and learning. Suggestions for implementing reform programs such as Connected Mathematics Project in the middle grades are provided. The advantages and disadvantages of such research-based reform programs are also discussed.

ABSTRACT: Proportional reasoning has long been a problem for students because of the complexity of thinking that it requires. Miller and Fey discuss some new approaches to developing students' proportional reasoning concepts and skills.


ABSTRACT: Since 1990, the January issue of "Teaching Pre K-8" has highlighted a school visit by the president of the National Council of Teachers of Mathematics. This article discusses Cathy Seeley's visit to a 6th grade classroom at the J. E. Pearce Middle School in Austin, Texas, where she participated in a math activity from the Connected Mathematics Project, a complete middle school mathematics curriculum for grades 6, 7, and 8. Funded by the National Science Foundation between 1991 and 1997, the program includes eight units for each grade, "built around mathematical problems that help students develop understanding of important concepts and skills in number, geometry, measurement, algebra, probability and statistics."

ABSTRACT: Reinhart discusses teaching mathematics to middle school students. To help students engage in real learning, Reinhart asks good questions, allows students to struggle, and places the responsibility for learning directly on their shoulders.


ABSTRACT: The teaching of mathematics continues to move away from a sole focus on correctness and a finished product to include a focus on process, context, and understanding. Writing tasks can be ideal tools for supporting student expression of ideas as a learning activity.


ABSTRACT: Examines 8th grade units from the Connected Mathematics Project (CMP). Identifies differences in older and newer conceptions, fundamental objects of study, typical problems, and typical solution methods in algebra. Also discusses where the issue of what is new in algebra is relevant to many other innovative middle school curricula.

ABSTRACT: A coin-flipping activity is meant to show students that a small number of trials may produce a wide variation in results.


