

nuclear winter. Each topic is introduced with a lesson in the chemistry involved and then supplies data supporting the various views of the scientists researching these topics. With each topic there are the pros and cons; for example, to reduce the effects of acid rain, do we abolish the use of low-grade coal, even if it means wiping out the jobs of thousands of miners? No one is quite sure how badly affected the ozone layer is, and the greenhouse effect has its good and bad points. The most speculative of the chapters is "Nuclear Winter" but is backed by data from volcanoes and other events that have the same type of energy outlay.

The final chapter wraps up the whole picture. It is one that is extremely complex and suggests a solution that will take the cooperation of all nations and people. This book presents the facts that make the reader realize the severity of the problems at hand. I would recommend it for any high school student wanting a brief overview of environmental issues. It provides an excellent launching point for any research paper. Each chapter also suggests topics that students might further explore. This book is a welcome addition to the plethora of materials that are now available on environmental issues.

Dani Meyers

■ MATHEMATICS AND GENDER

Edited by Elizabeth Fennema and Gilah C. Leder. 224 pp. \$17.95. Teachers College Press, 1990. ISBN 0-8077-3001-7.

This research document is a compilation of numerous American and Australian studies that have examined the possible reasons why males and females learn different kinds and amounts of mathematics. The editors' basic belief is that there should be equal justice for

males and females in mathematics education. The fact that there exists legal equity in education does not, in itself, guarantee nor achieve such justice, they point out.

Providing equal opportunity to elect math studies does not achieve equity. The research proves that there are clear differences by sex with regard to selection of math courses in secondary schools, and that beyond secondary school the discrepancy between the numbers of males and females selecting advanced mathematics preparation is even greater.

In addition to the research reports, the book also elucidates the interactions between internal beliefs and external influences, and how these factors affect mathematics achievement.

Commencing with a discussion of equity in education, the book proceeds to an overview of the nature of gender differences in math education and achievement. Manifestations of gender differences follow, including spatial skills, internal influences, and motivational attributes. Classroom studies include the role of the teacher, a perspective on teacher/student interactions, and teachers' beliefs that affect gender differences in achievement. All studies are fully documented and clearly presented.

The authors conclude that many of the studies do, in fact, raise more questions than they answer, and that the complexity of the problems warrants additional research. Despite the fact that most of the important variables have been identified and that the problem has diminished somewhat in recent years, gender differences still do exist, and they still prohibit females from taking their rightful place in society.

This most interesting work is certainly must reading for any researcher of math education. It should be required reading for prospective teachers preparing for a career in math education,

and I highly recommended it for all math teachers seeking guidance on effective change in the classroom.

Arnold Friedman

AUDIOVISUALS

■ GUIDEPOSTS FOR A SUSTAINABLE FUTURE: TOOLS FOR ENVIRONMENTAL RECOVERY KIT

by Mike Nickerson. 23 min. Price unknown. Bakavi School of Permaculture, 1990. ISBN 0-0-9694228-1-4.

Environmental education, ecological concepts, and a humanities-orientated issues approach to teaching science are ideas that have come of age. The Canadian-developed videotape and background book kit, *Guideposts For a Sustainable Future*, is a valuable addition to the limited teaching materials available. By taking a global view of many varied problems our world is facing, the author attempts to encourage answers from within the videotape viewers themselves. Questions include: "What comes to mind when you think about the relationship between yourself and the environment?" and "What concerns do you have about the way humanity lives on this planet?" Of importance is the question that helps students understand our concerns today: "Why are we hearing so much about environmental problems now, when they were hardly known 20 or 30 years ago?"

Explaining exponential growth in a simple and easily understood manner is one example of the effectiveness of this tape. Discussions following the viewing of the tape should examine where the effort must come to address environmental concerns and bring the topic to each individual.

"When we dump into the environment, we dump into ourselves" is a