

## **Bibliography for the Mathematics Preparation of Middle School Teachers**

Mathematics preparation of middle school teachers was the focus of two meetings held in the summer of 1997. The first was a meeting between U.S. Department of Education (ED) staff and the Mathematical Association of America's (MAA) Committee on the Mathematical Education of Teachers (COMET), and the other, a meeting of mathematicians, mathematics educators and teachers, was co-sponsored by ED, National Science Foundation (NSF), and the National Aeronautics and Space Administration (NASA). Participants in both meetings called for the various mathematics communities to work together to provide standards or guidelines for the undergraduate mathematics preparation of teachers.

One immediate outcome of this effort is a suggested bibliography of recommended readings that could be used to support the undergraduate mathematics preparation of teachers.

We hope the resources presented below are helpful to all persons who are concerned about and who are in a position to help improve the mathematical preparation of middle school teachers. If you have any comments or suggestions, please contact Joe Teresa, Project Manager, at [Joe.Teresa@ed.gov](mailto:Joe.Teresa@ed.gov).

# Recommended Readings for Faculty and Students

## Geometry & Visualization

Banchoff, Thomas F. 1996. *Beyond the Third Dimension: Geometry, Computer Graphics, and Higher Dimensions*. New York, NY: Scientific American Library.

Emmer, Michele. 1993. *The Visual Mind: Art and Mathematics*. Cambridge, MA: MIT Press, 1993.

Ferguson, Claire. 1994. *Helaman Ferguson: Mathematics in Stone and Bronze*. Erie, PA: Meridian Creative Group.

Fischer, Gerd. 1986. *Mathematical Models from the Collections of Universities and Museums*. Wiesbaden, DRG: Friedrich Vieweg & Sohn, 1986.

Francis, George K. A. 1987. *Topological Picturebook*, New York, NY: Springer-Verlag.

Geddes, Dorothy, et al. *Geometry in the Middle Grades: Addenda Series, Grades 5-8*. Reston, VA: National Council of Teachers of Mathematics, 1992.

Hildebrandt, Stephan. *Mathematics and Optimal Form*. New York NY: Scientific American Library, 1995.

Loeb Arthur L. 1991. *Concepts & Images: Visual Mathematics*. Boston, MA: Birkhäuser.

Loeb, Arthur L. 1976. *Space Structures: Their Harmony and Counterpoint*. Reading, MA: Addison-Wesley.

Rucker, Rudy. 1984. *The Fourth Dimension: Toward a Geometry of Higher Reality*. Boston, MA: Houghton Mifflin.

Schattschneider, Doris S. 1995. *Visions of Symmetry: Notebooks, Periodic Drawings & Related Work of M. C. Escher*. New York, NY: W. H. Freeman.

Weeks, Jeffrey R. 1985. *The Shape of Space: How To Visualize Surfaces*. New York, NY: Marcel Dekker.

## Symmetry & Patterns

Grunbaum, Branko and Shephard, G.S., 1987. *Tilings and Patterns*. New York, NY: W. H. Freeman.

Hildebrandt, Stefan and Tromba, Anthony. 1996. *The Parsimonious Universe: Shape and Form in the Natural World*. New York, NY: Copernicus.

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Stevens, Peter S. 1974. *Patterns in Nature*. Boston, MA: Little, Brown & Co.

Thompson, D'Arcy. 1942. *On Growth and Form*, (2 vols.) Cambridge, England: Cambridge University Press. (Abridged Edition, 1966).

## Data Presentation & Analysis

Brook, Hassard, and Richard J. et al. 1986. *The Fascination of Statistics*. New York, NY: Marcel Dekker.

Burrill, Gail, et al. 1992. *Data Analysis and Statistics Across the Curriculum*. Reston, VA: National Council of Teachers of Mathematics.

Campbell, Stephen K. 1974. *Flaws and Fallacies in Statistical Thinking*. Englewood Cliffs, NJ: Prentice-Hall.

Gonick, Larry and Smith, Woolcott. 1993. *The Cartoon Guide to Statistics*. New York, NY: HarperCollins.

Huff, Darrell. 1993. *How to Lie with Statistics*. New York, NY: W.W. Norton & Co., 3.

Landwehr, James and Watkins, Ann. 1986. *Exploring Data*. Palo Alto, CA: Dale Seymour Publishers.

Moore, David S. 1995. *Statistics: Concepts and Controversies*, Third Edition. New York, NY: W. H. Freeman.

Peterson, Ivars. 1998. *The Jungles of Randomness*. New York, NY: John Wiley.

Tanur, Judith M., et al. 1989. *Statistics: A Guide to the Unknown*, Third Edition. Laguna Hills, CA: Wadsworth.

Tufte, Edward R. 1990. *Envisioning Information*. Cheshire, CT: Graphics Press.

Tufte, Edward R. 1983. *The Visual Display of Quantitative Information*. Cheshire, CT: Graphics Press.

Zawjenskii, Judith S. et al. 1991. *Dealing with Data and Chance: Addenda Series, Grades 5-8*. Reston, VA: National Council of Teachers of Mathematics.

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## Practical Mathematics

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Bolt, Brian. *Mathematics Meets Technology*. New York, N.Y: Cambridge University Press.

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Wattenberg, Frank 1990. *Personal Mathematics and Computing: Tools for the Liberal Arts*. Cambridge, MA: MIT Press.

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## Snapshots & Vignettes

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