M333L - BIBLIOGRAPHY FOR TOPICS – SPRING 2003

Abstract symmetry in mathematics and physics

- Bunch, Bryan, Reality's Mirror QC 174.17 S9 86 PMA
- Guillen, Michael, Bridges to Infinity,1983, pp.73-80
- Hauptmann, Herbert A., "The Role of Symmetry in Mathematical Discovery", Symmetry v.1, 1990 27-28
- Polya, How to Solve It
- Rosen, Joe, "Symmetry, Analogy, Science", Symmetry, v.1, 1990
- Zee, A., Fearful Symmetry

Applications of geometric transformations in computer graphics

- Smart, Modern Geometry

The arbelos

- Bankoff, Leon, "Are the twin circles of Archimedes really twins?", Mathematics magazine, v. 47, no. 4, September 1974, pp. 214-218
- Bankoff, Leon, "The golden arbelos", Scripta Mathematica, v. 21, no1, March 1955, pp.70-76
- Gaba, M.G., "On a generalization of the arbelos,", the American mathematical Monthly, v. 47, January 1940, pp.19-24
- Gardner, Martin, "Mathematical Games", Scientific American, Jan 1979, vol 240, 18-28
- Posamentier, Alfred and Gordon Sheridan, Investigations in Geometry, Addison-Wesley, 1982

Billiards

- Bender, et al, Billiard Ball Problems on Unusual Tables, COMAP
- Carroll, Lewis, Circular Billiards
- DeTemple, Jack and Duanene Robertson, The Calc Handbook, pp. 197-201 (billiards on conics)
- Mizerak, Steve, Inside Billiards
- Olivastro, Dominic, Hall of Mirrors, Science, v. 32 no. 1, Jan-Feb 1992, pp.54-56
- Pardon, George Frederick, Billiards; Its Theory and Practice
- Schoenberg, Isaac J., Mathematical Time Exposures
- Wells, David, Hidden Connections, Double Meanings, pp. 126 – 128

Cavalieri's Principle

- Eves, Howard, Two Surprising theorems on Cavalieri Congruence, the College Mathematics Journal, march, 1991

Chinese Geometry

- Chinese mathematics : a concise history. / Li, Yen, 1892-1963. / Oxford Oxfords# 1987 QA 27 C5 L4713 1987 PCL Stacks
- Swetz, Frank, The Volume of a Sphere: A Chinese Derivation, Mathematics Teacher, February, 1995, 142 - 145

Collinearity of points and Concurrency of lines

- Posamentier, Alfred and Gordon Sheridan, Investigations in Geometry, Addison-Wesley, 1982

Congruence conditions for triangles

- Beran, Davis, SSA and the Steiner-Lehmus theorem, Mathematics teacher, May 1992, 380-383

Conic Sections

- Broman, Arne and Lars Broman, Museum Exhibits for the Conics, Mathematics Magazine, vol 67, June, 1994, pp. 206 – 209
- Dawson, John W. Jr., Displaying the Conics: Three alternatives to computer graphics, Primus, vol.1, no.1, March, 1991
- Downs, J. W., Practical Conic Sections, Dale Seymour, 1993
- Drunker, Daniel, Reflection Properties of Curves and Surfaces, Mathematics Magazine, June 1992
- Land, Frank, The Language of Mathematics, Doubleday, 1963, pp. 147 – 159 ,206 – 214
- Schupp, H, Applications and Geometry, in M. Niss et al, ed., Teaching of Mathematical Modeling and Applications, Ellis Hoorwood, 1991, pp. 220-229 QA401 T433 PMA
- F. Van Maanen, Seventeenth century instruments for drawing conic sections, Mathematical Gazette 76:476 (1992) 222-230
- Worksheet from the San Francisco Exploratorium, Sourcebook, Urban Mathematics Collaboratives, 1990, SB-12
- De Temple, Duane, A Direct Derivation of the Equations of the Conic Sections, Mathematics Teacher, March 1990

Constructing geometric figures from string

- Bolt, Brian, More Mathematical Activities for Teachers, Cambridge University Press, 1985, pp. 63-66, 70 -71, 156 - 157
- Cundy, Henry M. and A.P. Rollett, Mathematical Models, 1961
- Dixon, Robert, Mathographics, Dover, 1987, pp.75-78
- Gardner, Martin, Penrose Tiles to Trapdoor Ciphers
- Lyng, Merwyn J., Dancing Curves: A Dynamic Demonstration of Geometric Principles, NCTM 1978
- Pedoe, Dan, Geometry and the Visual Arts
- Pohl, Victoria, How to Enrich Geometry using String Designs, Dale Seymour
- Somervell, Edith L., A Rhythmic Approach to Mathematics, NCTM, 1975
- Steinhaus, Hugo, Mathematical Snapshots
- Winter, John, String Sculpture, Creative Publications
- NCTM, Multisensory Aids in the Teaching of Mathematics, Eighteenth Yearbook, 1945
- Seymour, Dale, Geometric Design, Dale Seymour Publications, 1988

Constructing regular polygons

- Ball and Coxeter
- Bold, Famous Problems of Geometry

· DeTemple, Duane W., Simple Constructions for the Regular Pentagon and Heptadecagon, Math. Teacher, May 1989 (contains other refs) Mathematics Teacher, March 1990, p. 228
· DeTemple, Duane W., Carlyle Circles and the Lemoine Simplicity of Polygon Constructions, American Mathematical Monthly,v.98, n0. 2, February 1991, pp.97-108
· Dixon, Robert, Mathographics, Dover, 1987, pp. 34-44, 52-53

Constructing triangles

· Posamentier, Alfred and Gordon Sheridan, Investigations in Geometry, Addison-Wesley, 1982

Cross Sections of Solids

· Hunt, Richard A., Calculus with Analytic Geometry
· Wells, David, The Penguin Dictionary of Curious and Interesting Geometry, p. 195
· Wenniger, Magnus, Dual Models

Crystals

· Baeyer, Hans C., Impossible Crystals, Discover 11, February, 1990, 69 – 78
· Tromba, Anthony. / Mathematics and optimal form. / New York 1985 BH 301 N3 H55 1985 PCL Stacks (Article by Wulff)

Curves of Constant Width

· Caldwell, J.H., Topics in recreational mathematics, QA 95 C28 UGL
· Rademacher, Hans and Otto Toeplitz, The Enjoyment of Mathematics, Dover Selected Papers in Geometry, pp. 292-294
· Smith, Scott, Drilling Square Holes, Mathematics Teacher, vol 86, no.7, October, 1993, pp. 579 - 583 (Contains more references.)
· Smart, Modern Geometries, section 3.6

Cycloids, Epicycloids, and Hypocycloids

· Bolt, Brian, Mathematics Meets Technology, Cambridge Univ press, 1991, pp.112-113, 118

Dimensions

· Abbot, E., Flatland
· Banchoff, Thomas F., Discovering the Fourth Dimension, Natick, MA: PrimComputer Inc., 1987
· Bragdon, Claude, Projective Ornament, Dover.
· Burger, Dionys, Sphereland: A Fantasy About Curved Spaces and an Expanding Universe, New York: Harper and Row 1965
· Critchlow, Keith, Order in Space, New York, Thames and Hudson, 1969
· Dewdney, A. K., Planiverse
· Eckhart, Ludwig, Four-dimensional Space
· Henderson, Linda, The Fourth Dimension and Non'Euclidean Geometry in Modern Art
· Hess, Adrien L., and Carl Diekhans, The Number of Segments Needed to Extend a Cube to N Dimensions, Mathematics Magazine 43 (September1970), 187-92
· Hess, Adrien L., Viewing Diagrams in Four Dimensions, Mathematics Teacher 64 (March 1971), 247-48
· Hess, Adrien L., Four-Dimensional Geometry -- An Introduction, NCTM, 1977

- Hilbert and Cohn-Vossen, Geometry and the imagination
- Loeb, Space Structures: Their Harmony and Counterpoint, Birkhauser, 1976, QA 491 L63
- Manning, Henry Parker, The Fourth Dimension Simply Explained, New York,macmillan, 1911
- Manning, Henry Parker, Geometry of Four Dimensions, New York, Dover, 1956
- Marr, Richard, Four Dimensional Geometry, Houghton Mifflin, 1970
- Miyazaki, K., An Adventure in Multidimensional Space: The Art and Geometry of Polygons
- Peterson, Ivers, The Mathematical Tourist, New York, Freeman, 1988
- Rucker, Rudy, geometry, Relativity, and the Fourth Dimension
- Rucker, Rudy, Miindtools, The Five Levels of Mathematical Reality, Boston, Houghton Mifflin, 1987
- Rucker, Rudy, ed., Speculations on the Fourth Dimension, Selected Writings of Charles H. Hinton, New York, Dover, 1980
- Rucker, Rudy, The Fourth Dimension, Toward a Geometry of Higher Reality, Boston, Houghton Mifflin, 1984
- Senechal, Marjorie and G. Fleck, Shaping Space: A Polyhedral Approach, Birkhauser, 1988
- Steen, Lynn, A. On the Shoulders of Giants: New Approaches to Numeracy Arithmetic Teacher, vol 37, no 6, February 1990
- Weeks, Jeffrey R., The Shape of Space, Marcel Dekker, 1985, QA 612.2, W44, 1985, PMA

Dissecting geometric figures

- Anglin, R.H. and R. Robinson Rowe, J.R. M. 8(20), 1975,149-50
- Coffin, Stewart T. The Puzzling World of Polyhedral Dissections, Oxford, U. Press, 1990
- Galvin, Fred Letter to the Editor, Amer Math Monthly, Feb 1990, p.131
- Gardner, Martin, Penrose Tiles and Trapdoor Ciphers QA 95 G 298 PMA
- Kierstead, Friend H., Jr. and R.S. Johnson, J.R.M. 9(1), 61-63, 1976 (?)
- Harry Lindgren, Recreational Problems in Geometric Dissections and How to Solve Them . Revised and enlarged by Greg Frederickson. New York: Dover Publications, 1972.
- Frederickson, Greg N, Dissections: Plane & Fancy. New York: Cambridge University Press, 1997.
- Wills, Herbert, III, Leonardo's Dessert: No Pi, NCTM, 1985

Dissections (2 and 3 D)

- Bolt, Brian, The Amazing Mathematical Amusement Arcade, Cambridge, 1984
- Buchman, Edwin, The impossibility of Tiling a convex region with unequal equilateral triangles, American Mathematical Monthly, Dec 1981, pp. 748-753
- Caldwell, J.H., Topics in recreational Mathematics, QA 95 C28 UGL
- Coffin, The Puzzling World of Polyhedral Dissections, Oxford U. Press, 1991

- Domoryad, A.P. tr. Moss, Halina, Mathematical Games and Pastimes, Macmillan, New York, 1964, pp. 158-65, 193-201)
- Eves, Howard, a Survey of Geometry
- Fry, Erin K. and Peter L. Glidden, Illustrating Mathematical Connections: A Geometric Proof of Euler's Theorem, Mathematics Teacher, January, 1996, pp. 62 – 65
- Hunter, J. A.. H. and Madachy, Joseph S., Mathematical Diversions, Van Nostrand, New Jersey, 1962, pp. 56-67
- Langman, Harry, Play Mathematics, Hafner, New York, 1962, pp. 119-55
- Langman, Harry, Geometric Dissections, D. Van Nostrand, Princeton, New Jersey, 1964
- Musser, Gary L. and Burger, William F. Mathematics for Elementary Teachers, Macmillan, New York, 1988, p.516
- Soifer, Alexander, How Does One Cut a Triangle?, Center for Excellence in Mathematical Education (885 Red Mesa Dr., Colorado Springs, CO 80906); xiii + 139 pp, $18.95 (P). ISBN 0-940263-01-7
- Yates, Robert C., Geometrical Tools, Educational Publishers, 1949. 744 Y 27 (UGLI)

Duplicating the cube

- Ball and Coxeter Bold, Famous Problems of Geometry

Erroneous proofs in geometry

- Ball and Coxeter
- Carroll, Lewis, The Lewis Carroll Picture Book
- Fetisov, A.I., Proof in Geometry, Mir
- Gardner, Martin, Wheels, Life and Other Mathematical Amusements, pp. 51-59
- D.A. Maxwell, Fallacies in Mathematics (Cambridge, 1961)
- Ya. S. Dubros (Dubnov?), Mistakes in Geometric Proofs (Heath, 1963)
- Bradis, Lapses in Mathematical Reasoning, QA 43 B6953
- Lakatos, I., Proofs and Refutations: the Logic of Mathematical Discovery
- Northrop, E.P., Riddles in Mathematics, Van Nostrand, 1944
- Posamentier, Alfred and Gordon Sheridan, Investigations in Geometry, Addison-Wesley, 1982
- Posamentier, Alfred J.H. banks, and R.L. Bannister, Geometry, Its Elements and Structure, McGraw-Hill, 1977, pp.242-244, 270-271

Euler's formula

- Coxeter, H.S.M., Introduction to Geometry
- Mortenson, Michael, Geometric Modeling
- Smart, Modern Geometry
- Pedoe, Dan, Geometry and the Visual Arts
- Barr, Stephen, Experiments in Topology, 1964, Dover
- Courant and Robbins, What is Mathematics
- Hilbert and Cohn-Vossen, Geometry and the Imagination

- Loeb, Space Structures: Their Harmony and Counterpoint, Birkhauser, 1976, QA 491 L63
- Lord, E.A.. and Wilson, C.B., The Mathematical Description of Shape and Form, 1984
- Lyusternik, L.A., Convex Figures and Polyhedron, 1963, Dover
- Newman, James, The World of Mathematics
- V.N.R. Concise Encyclopedia of Mathematics, Van Nostrand

Fibonacci Sequence

- Daniel C. Litchfield and David A. Goldenheim with support from Charles H.Detrich, Euclid, Fibonacci, Sketchpad, Mathematics Teacher, January 1997. p 8 - 12

Fivefold symmetry

- Hatigittai, Istvan, Fivefold Symmetry, 1992

Fractal geometry

- Barnsley, Michael, Fractals Everywhere
- Barcellos, Anthony, The Fractal Geometry of Mandelbrot, College Mathematics Journal 15, March 1984, 98-114
- B/W Fractals, Macintosh and Hypercard programs, $8.99 from Somak Software, 535 Encinitas Blvd, Encinitas, CA 92024, (619) 942- 2556
- Devlin, Keith, Mathematics: the New Golden Age Encyclopedia of Physical Science and Technology, Vol 5
- Garcia, Linda, The Fractal Explorer, 1990
- Gardner, Martin, Penrose Tiles and Trapdoor Ciphers QA 95 G 298 PMA
- Falconer, K.J., The Geometry of Fractal Sets, Cambridge, 1985
- Feder, Jens, Fractals, 1988, Plenum Press
- Kern, Jane F. and Cherry C. Mauk, Exploring Fractals - A Problem-Solving Approach using Mathematics and Logo, Mathematics eacher, March 1990
- Lam, Lui, ed., Nonlinear Physics for Beginners, World Scientific Publishers, 199
- Long, 1981, Pascal's triangle and p self-similarity (ICM 90 ref)
- Mandlebrot, Benoit B., The Fractal Geometry of Nature
- MandelZot v2.0, Macintosh program, $8.99 from Somak Software, 535 Encinitas Blvd, Encinitas, CA 92024, (619) 942-2556
- McDermott, Jeanne, Geometrical Forms Known as Fractals Find Sense in Chaos, Smithsonian 14, December 1983, 110-117
- McWhorter, William, A., Jr, and Jane Morrill Tazeleer, Creating Fractals, Byte 12, August 1987, 123-128

- Peitgen, Heinz-Otto, The Beauty of Fractals
- Peitgen, et al, Fractal Cosmos 1990 Calendar (ref Math Teacher Dec 89)
- Peterson, Ivars, "Ants in Labyrinths" and "The Dragons of Chaos", in The Mathematical Tourist
- Schroeder, Manfred, Fractals, Chaos, Power Laws, 1992
- Six Worlds, IBM PC and compatibles 5-1/4" diskette, Turing Omnibus, Box 1456, London, ON N6A 8M2 (Review Math Teacher, May 1989)
- Newman, Rochelle and Martha Boles, The Golden Relationship: Art, Math, Nature
- Various materials available from Media Magic, Box 507B, Nicasio, CA 94946
- Wolfe, 1984, Fractal dimension (ICM 90 ref)
- Bannon, Thomas J., Fractals and Transformations, Mathematics teacher, March, 1991, 178ff
- Barton, Ray, Chaos and Fractals, Ma thematics Teacher 83, October 1990, 524-29
- Bolt, Brian, More Mathematical Activities, Cambridge University Press 1985, pp. 72-74, 157-158
- Camp, Dane R., A Fractal Excursion, Mathematics Teacher, April, 1991, pp. 265 ff
- Devaney, Robert Chaos, Fractals and Dynamics: Computer Experiments in Mathematics, Addison Wesley, 1990, Ch 9
- Lauwerier, Hans, Fractals: Endlessly Repeated Geometrical Figures, QA 614.86 L3813 1991 PMA
- Martin, Tami, Fracturing Our Ideas about Dimension, NCTM Student Math Notes, insert in NCTM News Bulletin, november, 1991
- Nievergelt, Yves, Fractals on Hewlett-Packard Supercalculators, New Directions in Math series, Wadsworth, 1991, $8
- Norton, Alec, Review of Measure, Topology, and Fractal Geometry, by Gerald A. Edgar, American Mathematical Monthly, April 1992, p. 378 [Parts of the review will be too technical, but other parts are relevant.]

Geodesic structures

- Edmondson, Amy C. A Fuller Explanation: The Synergetic Geometry of R. Buckminster Fuller, Birkhauser, 1987
- Fuller, Buckminster, Utopia or Oblivion: the Prospects for Humanity
- Kenner, Hugh, Geodesic Math and How to Use It
- Laycock, Mary, Bucky for Beginners, Dale Seymour
- Mottel, Syeus, Charas: The Improbable Dome Builders
- Prenis, John, The Dome Builder's Handbook

- Wenniger, Magnus, Spherical Models
- Yarnall, William, Dome Builder's Handbook no.2
- Bolt, Brian, More Mathematical Activities for Teachers, Cambridge University Press, 1985, pp. 45 - 50 (rigid structures)
- Kenner, Hugh. / Geodesic math and how to use it. / Berkeley 1976 TH 2170 K46 Architecture Library
- Pugh, Anthony, Polyhedra, a Visual Approach, Univ.of California Press, 1976
- Domebook 2, Pacific Domes, 1971

Geometric constructions by paper folding

- Cundy, Henry M. and A.P. Rollett, Mathematical Models, 1961
- Fukuta, Jiro, Problem E 3369, Amer Math Monthly, Feb 1990, p. 150
- Johnson, Donovan, Paper folding for the Mathematics Class NCTM, 1957
- Martin, George E., Transformatio Geometry, Springer, section 5.2
- Olson, Alton T., Mathematics through Paper Folding, NCTM, 1975 (?)
- Pappas, Theoni, Mathematics Appreciation, Dale Seymour
- Pedoe, Dan, Geometry and the Visual Arts
- Row, T. Sundara, Geometric Excursions in Paper Folding
- Smart
- Yates, Robert, Carl, Geometrical Tools, QA 464 Y3 1949

Geometrical Puzzles

- Bolt, Brian, Mathematical Cavalcade
- Bolt, Brian, More Mathematical Activities
- Conway, J. and Guy, R., Winning Ways
- Domoryad, A. P., Mathematical games and pastimes
- Dunn, Angela, Mathematical Bafflers, Dover
- Klarner, D., Thr Mathematical Gardener
- Moscovich, Mind Benders, Games of Shape
- Mott-Smith, Geoffrey, Mathematical Puzzles, Dover
- Slocum, J. and Botermasn. J., Puzzles Old and New

Geometric quilt designs

- Labelle, Judith and Carol Ann Waugh, Patchworking
- Washburn and Crowe

Geometry in Animal Form and Function

- Haldane, J. B. S. (John Burdon Sanderson), 1892-1964. / On being the right size and other essays. / Oxford 1985 QH 311 H318 1985 Life Science Library

· Stewart, Ian and Martin Golubitsky, Fearful Symmetry, Penguin, 1992, chapters 7 and 8
· Thompson, D'Arcy Wentworth, On Growth and Form (2 vols), Cambridge U. Press, 1972

Geometry in Ancient China

· Knorr, Wilbur, textual Studies in Ancient and Medieval Geometry, Birkhauser, 1989

Geometry in Architecture

· Baglivo, Jenny, and Jack A. Graver: Incidence and Symmetry in Design and Architecture, Cambridge Universtiy Press, Cambridge, 1983
· Hay, D. R., The Orthographic Beauty of the Parthenon, 1853
· Ghyka, Matila, The Geometry of Art and Life, Dover
· Pedoe, Dan, Geometry and the Visual Arts
· Mathematics Teacher, January, 1990
· Salvadori, Mario, Why Buildings Stand Up, W.W. Norton, 1980

Geometry in Astronomy

· McGraw-Hill Encyclopedia of Science and Technology
· Milnor, John, On the geometry of the Kepler problem, Amer Math Monthly 90(1983)353-364
· Rosenfeld, B.A. and M.D. Sergeeva, Stereographic Projection, Mir
· Saari, Donald g., A Visit to the Newtonian N-body Problem via Complex Variables, Amer. Math Monthly 97, Feb 1990

Geometry in Design

· Baglivo, Jenny, and Jack A. Graver: Incidence and Symmetry in Design and Architecture, Cambridge Universtiy Press, Cambridge, 1983
· Barratt, Krome, Logic and Design, the Syntax of Art, Science and Mathematics, Eastview, Westfield, NJ, 1980
· Edwards, Edward B., Pattern and Design with Dynamic Symmetry: How to Create Art Deco Geometric Designs, Dover
· Hambridge, Jay, The Elements of Dynamic Symmetry, Dover
· Loeb, Arthur L., Concepts and Images: Visual Mathematics, Birkhauser, 1993, QA 36, L64, 1993, PMA

Geometry of Crystals and Molecular Structure

· American Scientist, January-February 1993 "a variety of insights that geometric methods give into fullerenes."
· Buerger, Martin Julian, Introduction to Crystal Geometry
· Gallian, Joseph A., 1986, Contemorary Abstract Algebra, Heath, Chapter 30
· Galiulin, R.V., Diamond Latticework: The fearful symmetry of crystalline structures, Quantum, Jan/Feb 1991, pp. 6-11

- Gallian, Joseph A., 1986, Contemorary Abstract Algebra, Heath, Chapter 30
- Hilbert and Cohn-=Vossen, Geometry and the Imagination
- Holden, Alan. / Crystals and crystal growing. / 1st ed. Garden City, NY 1960, QD 921 H58 Undergraduate Library
- Holden, Alan. / The nature of solids. / New York 1965 531 H711N
- Klein, Herbert, Manula of Minerology
- Mercer, Ian F., Crystals, Harvard University Press, Cambridge, MA, 1990 (Elementary, good pictures)
- Montesinos, Jose Maria, Classical tessellations and three-manifolds 1944- / Berlin 1987, QA 166.8 M66 1987 Phys-Math-Astron Library (the mathematics may be too advanced, but it has some good pictures)
- Newman, The World of Mathematics
- Smith, Deane, Bibliography on molecular and crystal structure models
- Steinhardt, Paul, American Scientist, v.74, 1986, p. 586 (quasicrystals)
- Senechal, Marjorie, Crystalline Symmetries: An Informal Mathematical Introduction
- Senechal, Marjorie and G. Fleck, Shaping Space: A Polyhedral Approach, Birkhauser, 1988
- Steinhardt, Paul, Endeavor, v. 14, 1990, p. 112 (quasicrystals)
- Sterling, Bruce, Buckymania, Fantasy and Science Fiction, July, 1992, 85-90
- http://www.nyu.edu/pages/mathmol/K_12.html

Geometry of Escher Prints

- Coxeter, H.S. M., M. C. Escher Art and Science, North Holland, 1986
- Ernst, The Magic Miirror of M.C. Escher, Random HOuse, 1984
- Escher, M. C., Escher on Escher, exploring the infinite, Harry N. Abrams, 1989
- Escher, M. C., Graphic Work of Escher, M. C., Hauthor Books, 1960
- Escher, M. C., Universe of Mind Play
- Schattschneider, Doris, Visions of Symmetry, W.H. Freeman, 1990
- WORLD OF ESCHER, INC., http://www.texas.net/escher/
- Art and Man, Dec 1985/Jan 1986, "How Escher Created", pp.4-5
- Britton, Jill, and Dale Seymour, Introduction to Tessellations
- Gardner, Martin, Mathematical Carnival
- MacGillavry, Caroline, Fantasy and Symmetry: The Periodic Drawings of M.C. Esher
- MacGillavry, Symmetry Aspects of Escher's Periodic Drawings, Scheltman and Hokema, Bohn, 1976
- M.C. Escher: Art and Science
- Smart, Modern Geometry

Geometry of Galileo

- Galileo, Galilei, Operations of the Geometric and Military Compass

Geometry of Golf

- Beasley, John D., The Mathematics of Games, Oxford Univ Press, 1989
- Boomer, Perry, On Learrning Golf, Knopf, 1846, pp. 187-196

- Clemence, Willian James, A cinematographical study of the variation in momentum when swinging varying clubhead weights
- Jones, Robert Tyre, Bobby Jones on The Basic Golf Swing, Doubleday, 1969, pp. 54,57, 62-3
- Thomas, Alvin, The use of a visual perceptual device in teaching the downswing in golf
- Wiren, Gary, Golf, pp.16-17,26-27, 34-35, 42-45
- Wrigglesworth, Frank L., A cinematographical analysis of the short chip in golf

Geometry in Higher Dimensions

- Banchoff, Thomas F., Beyond the Third Dimension, (Book 1990, video 1992)
- Francis, George K, A Topological Picture Book
- Gardner, Martin, Mathematical Carnival, MAA, 1984, QA 95 G286
- Leonardo (International Society for the Arts, Sciences, and technology), The Fourth Dimension in Art, Science, and Mathematics, 1992
- Robbins, Fourfield: Computers, Art and the Fourth Dimension, book and video, both 1992. Software for Macintosh available for $10 from Media Magic, 1-800-882-8284
- Rucker, Rudy, The Fourth Dimension, 1984
- Steen, ed., On the Shoulders of Giants

Geometry of billiards

- Gardner, Martin, Scientific American, v. 212, May 1965
- Gardner, Martin, Scientific American, v. 236, April 1977
- Griffel, D.H., Mathematical Gazette, June, 1989
- Jepsen, Charles, Two Year College Mathematics Journal, November, 1979
- Schultz, Harris and Ray C. Shifless, Mathematical Gazette, June, 1988

Geometry of crystals

- Anderson, Hyde, Inorganic Crystal Stuuctures
- Brown and Forsyth, The Crystal Structure of Solids
- Jaffe, Howard, Introduction to Crystal Chemistry
- Lockwood, E.H., and R.H. MacMillan, Geometric Symmetr
- Wells, David, Hidden Connections, Double Meanings, Cambridge, 1988

Geometry of genetics

- Mathematics Untwists the Double Helix, Science, 23 February 1990

Geometry of Islamic art

- Berggren, J.L., Episodes in the Mathematics of Medieval Islam, QA 27 A67 B46 1988

- Dury, Art of Islam
- Ettinghausen and Graber, The Art and Architecture of Islam, 650-1250
- Faruqui, Islam and Art
- James, Islamic Art
- Knorr, Wilbur, textual Studies in Ancient and Medieval Geometry, Birkhauser, 1989
- Kuhnel, Islamic Arts
- El-said and Parman, Geometric Concepts in Islamic Art, Dale Seymour Publications, 1976
- Rice, Islamic Art
- Prussin, Labelle, Hatumere: Islamic Design in West Africa
- Soucek, Content and Context of Visual Arts in the Islamic World
- Van der Waerden, Geometry and Algebra in Ancient Civilizations, Springer, 1983
- Washburn and Crowe

Geometry of knots

- Bain, G. Celtic Art, Dover, 1973
- Brown, Ronnie, and John Robinson, Symbolism: Sculptures and Tapestries by John Robinson, Mathematics and Knots, (School of Mathematics, U. of Wales, Bangor, Gwynedd LL57 1UT, Wales, UK), 1989, 36 pp., £6 + £1 surface, £250 air) ISBN 0-9514947-08. Also, 27 pp, ISBN 0-9514947-16
- Cipra, Bary A., "To Have and Have Not: When Are Knots Alike?", Science, v.242, Sept 9, 1988
- Devlin, Keith, Mathematics: the New Golden Age
- Geometry Center, Ujniversity of Minnesota, Not Knot (video), 1991
- Holden, Orderly Tangles, QA 491 H626 UGLI
- Moran, Siegfried, The Mathematical Theory of Knots, Elsevier, 1989
- Peterson, Ivars, The Mathematical Tourist
- Peterson, Ivars, "Unknotting a Knotty Tale, Science News, v. 133, May 21, 1988 "Tying up a Knotty Loose End," Science News, v.134, Oct 29, 1988 Geometry of Molecular Structure
- Gillespie, R.J., Molecular Geometry, Van Nostrand, 1972
- Hout, R.F. Jr., A Pictorial Approach to Molecular Structure and Reactivity, WIley, 1984
- Richards, W.G., Structure and Spectra of molecules, Wiley, 1985, pp.27-43
- Quasicrystals: Rules of the Game, Science, 2 March 1990

Geometry of optics

- Bowden and Schiffer, The role of Mathematics in Science, Chapter 3 (MAA?) (Not in UTCat?)Consortium, November, 1986
- Herzberger, Modern Geometrical Optics, pp. 71-148, 383-420

- Leathem, The Elementary Theory of the Symmetrical Optical Instrument, pp.1-25, 39-42, 44-57
- Martin, Geometrical Optics, pp.1-43,107-130,173-196
- Pitchford, Studies in Geometrical Optics, pp.1-12, 50-60, 72-86, 180-209
- Southall, The principles and methods of Geometrical Optics, pp.1-32, 35, 198-262
- Pedoe, Dan, Geometry and the Visual Arts

The geometry of perspective drawing

- Beskin, N.M., Images of Geometric Solids, Mir
- Leonardo (International Society for the Arts, Sciences, and technology), Art and Technology, 1992
- Moore, Charles G., To View an Ellipse in Perspective, College Mathematics Journal, 1989, 134 – 136
- Penna, Michael A. and Richard Patterson, Projective Geometry and its Application to Comuter Graphics

The geometry of relativity

- Penrose, Roger, The Geometry of the Universe, in Steen, Lynn A., Mathematics Today, QA7 M3447 PMA

Geometry of textiles

- New York Times Educational Supplement, April 3, 1988 Washburn and Crowe
- Grunbaum, B., Periodic ornamentation of the fabric plane: lessons from Peruvian fabrics, Symmetry 1(1990), 45 -68.
- Grunbaum, Branko, and G.C. Shepard, Satins and Twills: An Introduction to the Geometry of Fabrics, Mathematics Magazine, 53, 1980, 131-161 and 313

Geometry of the kaleidoscope

- Arithmetic Teacher, February, 1970
- Ball and Coxeter
- Brewster, Sir David, article on images in mirrors, EncyclopediaBritannica, c. 1818 (Brewster invented the kaleidoscope)
- Coxeter, Regular Polytopes
- Baker, Cozy, Through the Kaleidoscope ... and Beyond, Beechcliff Books, Annapolis, 1987 pp. 13-22,170-178, 188-195
- Mathieu, Jean Paul, Optics, parts 1 and 2, vol. 62, 1075

- Weiting, Thomas W., The Mathematical Theory of Chromatic Plane Ornaments, Marcel Dekker, NY, 1982, pp 31-36,346-362
- Williamson, Samuel J. and Cummins, Herman Z. Light and Color in Nature and Art, Wiley, NY, 1983, pp.223-270

The Golden Ratio in geometry

- Baravelle, H.V., The Geometry of the Pentagon and the Golden Section, Math. Teacher, Jan. 1948
- Dantzig, Tobias, The Bequest of the Greeks
- Ghyka, Matila, The Geometry of Art and Life, Dover
- Huntley, H.E. The Divine Proportion, Dover
- Musser, Gary and William F. Burger, Mathematics for Elementary Teachers
- Newman, Rochelle and Martha Boles, The Golden Relationship: Art, Math, Nature
- Ogilvy, Charles, Excursions in Geometry
- Pappas, Theoni, Mathematics Appreciation, Dale Seymour
- Pedoe, Dan, Geometry and the Visual Arts
- Posamentier, Alfred and Gordon Sheridan, Investigations in Geometry, Addison-Wesley, 1982
- Runion, Garth E. The Golden Section and Related Curiosa, Scott Foresman, 1972
- Smart, Modern Geometry
- Vajda, S., Fibonacci and Lucas Numbers, and the Golden Section:Theory and Applications, QA 241, V24, 1989 PMA

Indian Geometry

- Amma, T.A. Saraavati, Geometry in Ancient and Medieval India, PMA QA 444 S26 1979
- Knorr, Wilbur, textual Studies in Ancient and Medieval Geometry, Birkhauser, 1989
- Sarasvati, Svami Satya Prakesh, PMA QA 443.5 P72 1987
- Van der Waerden, Geometry and Algebra in Ancient Civilizations, Springer, 1983
- Baeyer, Hans C., Impossible Crystals, Discover 11, February, 1990, 69 – 78
- Boles, Martha and Rochelle Newman, Universal Patterns Book 1: The Golden Relationship: Art, MAth and Nature
- Cook, Theodore A., The Curves of Life, Dover
- Hargittai, I and C.A. Pickover, Spiral Symmetry, World Scientific, 1992
- Kessler, James E., Goldern Triangle, Mathematics Teacher, April, 1994, p. 324

- Loeb, Arthur L., Concepts and Images: Visual Mathematics, Birkhauser, 1993, QA 36, L64, 1993, PMA
- Markowski, George, Misconceptions about the Golden ratio, College Mathematics Journal, January, 1992, 2 – 19
- Mathematics Teacher, February 1991, 133-138, The artist's View of Points and Lines
- National Council of Teachers of Mathematics, Historical Topics for the Mathematics Classroom
- Willard, Claude-Jacques, Le nombre d'or: utilisation en mathematiques et dans les beaux-arts, Paris, 1987

Honeycombs
- Peressini, Anthony L., The Design of Honeycombs, Umap Module Unit 502
- Thompson, D'Arcy, On Growth and Form, Cambridge U Press, 1917
- Toth, L. Fejes, What the bees know and what they do not know, Bull. Amer. Math. Soc. vol 70 (1964), pp. 468 - 481

Indian Geometry

- Datta, Bibhutibhusan, The Science of the Sulba, 1932
- Taylor, Charles, Ancient and Modern geometry of Conics, pp. xvii-xxxiii

Inversion

- Pedoe, Dan, Acourse of Geometry, QA 445 P43 PMA
- Rosenfeld, B.A. and M.D. Sergeeva, Stereographic Projection, Mir
- Smart, Modern Geometry

Japanese Geometry
- Fukagawa, Hedetosi and Dan Pedoe, Japanese Temple Geometry Problems, The Charles Babbage Research Centre, P.O. Box 272, St. Norbert Postal Station, Winnipeg, Canade, R3V 1L6, 1989
- Sokolowsky, Dan, Review of "Japanese Temple Problems", American Mathematical Monthly, April, 1991

Knots
- Adams, Colin, The Knot Book: An Elementary Introduction to the Mathematical Theory of Knots, 1994, Freeman
- Gialamas. Stafanos and Gialamos, Panagiotis, Knots Everywhere, Consortium, Spring, 1993, pp. 4 - 5 (Contains other references)
- Gialamas, S. Knots Everywhere, Chicago: Aristotle Press, 1993
- Livingston, Charles, KNot Theory, MAA 1993 (Fairly advanced?)
- Prasolov, V.V., Intuitive Topology, AMS, 1994

Line of Sight Problems
- Stewart, Ian, MAthematical Recreations: Shedding litle Darkness, Scientific American 272:2 (August 1996) 100-103
- Scientific American 270:5 (May 1994) 118 - 120 (Number of guards needed for an art gallery)-

Linkages and geometry

- Bolt, Brian, More Mathematical Activities for Teachers, Cambridge University Press, 1985, pp.12-14, 114
- Bolt, Brian, Mathematics Meets Technology, Cambridge Univ press, 1991
- Choate, Jonathan, Linkages, Consortium, Summer 1995, pp. 6 – 7
- Cundy, Henry M. and A.P. Rollett, Mathematical Models, 1961
- Kempe, A. B., How to draw a straight line: a lecture on linkages, Macmillan
- Shyers, Joan, COMAP Module 594
- Solovyov, Yury, Making the Crooked Straight: Inversors and Watt's Steam Engine, Quantum, November/December 1990, pp. 20 – 23
- Kempe, A.B., How to Draw a Straight Line, NCTM, 1977
- Smart, Modern Geometry
- Meserve, Bruce E., Linkages as visual aids, Mathematics Teacher 39m 1946, 372-79
- Multi-sensory Aids in the Teaching of Mathematics, NCTM Eighteenth Yearbook (?
- Yates, Robert, Carl, Geometrical Tools, QA 464 Y3 1949
- Yates, A Mathematical Sketch and Model Book, Educat.Pub, 1949 (?)

Map coloring

- K. Appel, and W. Haken, The four color proof suffices, Mathematical Intelligencer,8(1986), 10-20
- K. Appel, and W. Haken, th esolution of the four color problem, Scientific American, October 1977, pp.108 – 121
- Barnette, David, Map Coloring, Polyhedra, and the Four-Color Problem, MAA, 1984
- Keeports, David, A Map-coloring algorithm, Mathematics teacher, December, 1991, pp. 759-76
- Appel, Kenneth and Wolfgang Haken, The Four Color Problem, in Steen, Lynn A., Mathematics Today, QA7 M3447 PMA
- Ball and Coxeter
- Brink, Raymond W., ed, Selected Papers on Geometry QA 446 S44, PMA
- Coxeter, H.M.S., The Four Color Problem, 1890-1940, Math. Teacher, April, 1959
- Devlin, Keith, Mathematics: the New Golden Age
- Gardiner, A., Mathematical Puzzling
- Hilbert and Cohn-Vossen, Geometry and the Imagination
- Ringel G., Map Color Problem
- Saaty, Thomas, The Four Color Problem
- Smart, Modern Geometry
- Spitznagel, Edward, Selected Topics in Mathematics

Map Projections

- Consortium, Summer, 1989 (References therein)

Mayan Geometry

- Scientific American, August 1989

Minimal Surfaces

- Boys, Charles, Soap Bubbles, Dover, 1959

- Hildebrandt, Stefan and Anthony J. Tromba, Mathematics and Optimal Form, 1985 (Available from Dale Seymour)
- Leonardo (International Society for the Arts, Sciences, and technology), Art and Technology, 1992
- Taylor, Jean E., Crystals, in Equilibrium and Otherwise, video, 1990 American Mathematical Monthly, April 1992, p. 376
- Courant and Robbins, What is Mathematics?
- Hildebrandt, Stefan and Anthony J. Tromba, Mathematics and Optimal Form
- senberg, Cyril, The science of soap films and soap bubbles, Dover
- NCTM News Bulletin, November, 1995, p. 2 ("Double Bubbles Give Mathematicians No Trouble")
- Scientific American, 1976
- Selected Papers in Geometry, pp. 40-47

Optics

- Conrady, A. E., Applied Optics and Optical Design, vol.1, Dover
- Drucker, Daniel, Reflection Properties of Curves and Surfaces, Mathematics Magazine, June 1992
- House, Peggy, Interactions of Science and Mathematics: A Set of Activities, Eric Clearinghouse for Science, Mathematics and Environmental Education, Ohio State University, College of Education, 1200 Chambers Road, Columbus, Ohio 43212
- Maesumi, Mohsen, Parabolic Mirrors, Elliptic and Hyperbolic Lenses, American Mathematical Monthly, June-July 1992, pp. 558-560
- Riddle, Analytic Geometry, 3rd edition, pp. 138-143 (reflection properties of conics)

Paper Folding

- Envelopes. / Boltianskii, V. G. (Vladimir Grigor'evich) / New York 1964 QA 621 B65 Physics-Math-Astronomy Library
- "Excursions in Geometry" by C. Stanley Ogilvy
- Dutch, Stephen, Folding n-pointed stars and snowflakes, Mathematics Teacher, November, 1994, pp. 630 - 637

Perspective Drawing

- Dixon, Robert, Mathographics, Dover, 1987, pp.79-86
- Edgerton, S. Y., Jr., The Renaissance Rediscovery of Linear Perspective, Basic Books, NY, 1975

Pick's Theorem(Overlap's with Euler's Theorem?)

- Grunbaum, Branko and G. C Shephard, Pick's Theorem, American Mathematical Monthly, February, 1993, pp 150 - 161 (Additionlal references p. 150)

Polyhedra

- Ball and Coxeter
- Bassetti, Fred, at al, Math Projects: Polyhedral Shapes, 1968
- Critchlow, Keith, Order in Space, Dale Seymour

- Cundy, H. Martyn and A.P. Rollett, Mathematical Models, Clarendon Press, 1954
- Federico, Descartes on Polyhedra
- Ghyka, Matila, The Geometry of Art and Life, Dover
- Hilbert and Cohn-Vossen, Geometry and the Imagination, pp.89-93, 290-295, 143-157
- Hilton, Peter, and Jean Pedersen, Build Your Own Polyhedra
- Holden, Allan, Shapes, Spaces, and Symmetry, 1971
- Jimenez,et al, The construction of Platonic bodies from constant width continuous strips, Int J. Math. Educ. Sci. Technol, 1990, vol 21, no.1, 37-50
- Laycock, Mary, Straw Polyhedra, Creative Publications, 1970
- Lockwood, E.H., and R.H. MacMillan, Geometric Symmetry
- Loeb, et al, On the Icosahedron, the Pentagonal Dodecahedron, and the Rhombic Triacontahedron, Symmetry, v.1, no.1, 1990, 29-36.
- Lyusternik, Convex Figures and Polyhedra\
- Ogilvy, Excursions in Geometry, pp. 129-134
- Pearce, Peter, and Susan Pearce, Polyhedra Primer, Dale Seymour
- Pedoe, Dan, Geometry and the Visual Arts
- Posamentier, Alfred and Gordon Sheridan, Investigations in Geometry, Addison-Wesley, 1982
- Senechal, Marjorie and George Fleck, Shaping Space, Birkhauser, 1988
- Toth, L. Fejes, Regular Figures, Pergamon Press, 1964
- Wenninger, Magnus J., Polydron Models, Cambridge U. Press,1970
- Wenninger, Magnus J., Polyhedron Models for the Classroom, NCTM, 1966
- Williams, Robert, The Geometrical Foundation of Natural Structure, Dale Seymour

<u>Polyominoes</u>

- Ball and Coxeter
- Dudeney, Canturbury Puzzles and Others, p.119-120
- Gardner, Scientific American v. CCXIII, p.96-104
- Canadian Journal of Mathematics, vol. XXV, pp585-602

<u>Projective Geometry</u>

- Brill and Steuben, Demystifying the Projective Plane, Math. Magazine 63, no.1, Feb 1990
- Posamentier, Alfred and Gordon Sheridan, Investigations in Geometry, Addison-Wesley, 1982
- Smart, Modern Geometry
- Pedoe, Dan, Geometry and the Visual Arts

Proofs of the Pythagorean theorem

- Fredrichs, Kurt Otto, From Pythagoras to Einstein, QA 460 P99 F7 PMA
- Beamer, James E, Using puzzles to teach the Pythagorean Theorem, Mathematics Teacher, May 1989
- Euclid, Elements
- Heath, Thomas, Manual of Greek Mathematics
- Loomis, Elisha Scott, The Pythagorean Proposition
- Newman, The World of Mathematics (Vol 1)
- Posamentier, Alfred and Gordon Sheridan, Investigations in Geometry, Addison-Wesley, 1982
- Prentice-Hall Encyclopedia of Mathematics, 1982
- Swetz, Frank J. and T.I. Kao, Was Pythagoras Chinese?, NCTM 1977

Proofs without words

- Various journals (Amer Math Monthly, Math Magazine)

Space Tessellations

- Ball and Coxeter
- Critchlow, Keith, Order in Space, Dale Seymour
- Ghyka, Matila, The Geometry of Art and Life, Dover
- Loeb, et al, On the Icosahedron, the Pentagonal Dodecahedron, and the Rhombic Triacontahedron, Symmetry, v.1, no.1, 1990, 29-36.
- Holden, Allan, Shapes, Space, and Symmetry, 1971
- Williams, Robert, The Geometrical Foundation of Natural Structure, Dale Seymour

Quilts

- Nephew, Sara, Equilateral triangle patchwork quilts, Dover
- Whitman, Nancy, Line and Rotational Symmetry, Mathematics Teacher, April, 1991
- Zaslavsky, Claudia, "Symmetry in American Art", Arithmetic teacher, September, 1990

Sphere Packing

- Packing your n-Dimensional Marbles, Science, 2 March 1990
- The nth Dimension, Forbes, v.138, Dec 29, 1986
- Curves for a tighter fit, Science News, v. 138, May 19, 1990, pp316-317
- Loosely packed spheres, Science News, v. 137, June 16, 1990, p. 382
- Thompson, Thomas M., From Error-correcting Codes through Sphere Packings to Simple Groups, MAA, 1984

Williams, Robert, The Geometrical Foundations of Natural Structure

Spirals

- Davis, Philip J., Spirals: From Theodorus to Chaos, 1993
- Lawlor, Robert, Sacred Geometry, 1982
- Leonardo (International Society for the Arts, Sciences, and technology), Art and Technology, 1992
- Pickover, Clifford and I. Hargittai, Spiral Symmetry, 1992
- Edwards, Edward B., Pattern and Design with Dynamic Symmetry, Dover, 1967, pp.13-24, 45-46, 68 - 69, 92-95, 104-105, 111-112, 118-122
- Hargittai, Istvan, and Clifford A. Pickover, eds, Spiral Symmetry, QA 483 S68 1992
- Wells, David, Hidden Connections, DOuble Meanings, Cambridge, pp. 83 - 86

Squaring the circle

- Ball and Coxeter
- Bold, Famous Problems of Geometry
- Dixon, Robert, Mathographics, Dover, 1987, pp.44

String designs

- Envelopes. / Boltianskii, V. G. (Vladimir Grigor'evich) / New York 1964 QA 621 B65 Physics-Math-Astronomy Library
- Irvine, Max, Cable Structures, Dover

Symmetry in physics

- Altmann, Simon L., Icons and Symmetries, Oxford Univ. Press, 1992
- Stewart, Ian and Martin Golubitsky, Fearful Symmetry, Penguin, 1992

Strip (frieze) patterns

- Crowe, Donald, Symmetry, Rigid Motions, and Patterns, Himap (bib)
- Hargittai, Istavan, ed., Symmetry: Unifying Human Understanding
- Lockwood, E.H., and R.H. MacMillan, Geometric Symmetry
- Washburn and Crowe
- Newman, Rochelle and Martha Boles, The Golden Relationship: Art, Math, Nature

Symmetry in Everyday Objects

- Gallian, Joseph A., Symmetry in Logos and Hubcaps

Taxicab geometry

- Krause, Eugene F., Taxicab Geometry, Addison-Wesley

· Posamentier, Alfred and Gordon Sheridan, Investigations in Geometry, Addison Wesley, 1982

Tilings (Tessellations of the plane)

· Ball and Coxeter
· Boorman, Phil, More About Tessellating Hexagons, Math Teacher, Summer, 1971
· Clemens, Stanley, Tessellations of Pentagons, Math Teaching, June, 74
· Coxeter, H.M.S., Twelve Geometric Essays, pp.76,115,168
· Dubrovm, Fomenko, and Novikov, Modern Geometry - Methods and Applications, p.169
· Dunn, James, A. More About Tessellating Hexagons, Mathematics Teaching, Summer, 1971
· Gardner, Martin, Penrose Tiles and Trapdoor Ciphers QA 95 G 298 PMA
· Ghyka, Matila, The Geometry of Art and Life, Dover
· Grunbaum, Branko and G.C. Shepard, Tilings and Patterns, 1987
· Hilbert and Cohn-Vossen, Geometry and the Imagination
· Klarner, D.A. (ed.), The Mathematical Gardner
· Lockwood, E.H., and R.H. MacMillan, Geometric Symmetry Mathematics Teacher, April,1974
· Mold, Josephine, Tessellations, Cambridge U. Press
· Nikulin, V.V., Geometries and Groups Scientific American, July, 1975
· Serra, Michael, Discovering Geometry, Key Curriculum Press, 1989
· Smart, Modern Geometry
· Baeyer, Hans C., Impossible Crystals, Discover 11, February, 1990, 69 – 78
· Fulton, Chandler, Tessellations, American Mathematical Monthly, vol. 99, May 1992, pp. 442 - 445.
· Classical tessellations and three-manifolds. / Montesinos, Jose Maria, 1944- / Berlin 1987, QA 166.8 M66 1987 Phys-Math-Astron Library (the mathematics may be too advanced, but it has some good pictures
· Spatial tessellations : concepts and applications of Voronoi diagrams. / Okabe, Atsuyuki, 1945- / Chichester, En# 1992 QA 278.2 O36 1992 Physics-Math-Astronomy Library (See also review by Marjorie Senechal, College MAth Journal, v 26, January 1995
· Orton, A. and S.Flors(?), Analysis of an ancient Tessellation, Mathematical Gazette, vol. 73, 1989, pp 297 - 301

Tessellatons of Space

- Baeyer, Hans C., Impossible Crystals, Discover 11, February, 1990, 69 – 78
- Ellott, H.A., Maclean, and Jordan, Geometry in the Classroom, Holt, Rinehart and Winston of Canada, 1968
- Gray, Jeremy, Parsimonious Polyhedra, Nature, 367 (10 February 1994) 513 – 514
- Loeb, Space Structures: Their Harmony and Counterpoint, Birkhauser, 1976, QA 491 L63
- Classical tessellations and three-manifolds. / Montesinos, Jose Maria, 1944- / Berli 1987, QA 166.8 M66 1987 Phys-Math-Astron Libraryn (the mathematics may be too advanced, but it has some good pictures)
- Orton, A. and S.M. Flower, Mathematical Gazette, v. 73, 1989, pp. 297-301
- Wheeler, Dan and David Sklar, Two Year Colloege MAthematics Journal, September, 1981, p. 246

Topological surfaces

- Arnold, B.H., Intuitive Concepts in Elementary Topology
- Barr, Stephen, Experiments in Topology, 1964
- Brill and Steuben, Demystifying the Projective Plane, Math Mag 63, no1, Feb.1990 pp.48-51
- Courant and Robins, What is Mathematics, p.235-264
- Francis, George K., A Topological Picture Book
- Guillen, Michael, Bridges to Infinity,1983, pp. 153-174
- Johnson, Donovan, Topology, the Rubber Sheet Geometry, 1960
- Liepzen, W., Visual Topology, 1969
- Khurgin, Ya. Did You Say Mathematics?, Mir
- Bergamini, David, Mathematics, Life Science Library, Time-Life, 1973
- Pappas, Theoni, Mathematics Appreciation, Dale Seymour
- Smart, Modern Geometry
- Weeks, Jeffrey, The Shape of Space, Dekker, 1985
- Pappas, Theoni, The Joy of Mathematics
- Prasolov, V.V., Intuitive Topology, AMS, 1994

Trisecting the Angle

- Courant and Robbins, What is Mathematics, pp.137-138
- Gardner, Martin, Mathematical Carnival, Chapter 19 (and bibliography)
- Yates, Robert C., Geometrical Tools, Educational Publishers, 1949. 744 Y 27 (UGLI)
- Ball and Coxeter
- Bold, Famous Problems of Geometry
- Dudley, Underwood, A Budget of Trisections, Speinger, 1987
- Miller, Leslie, College Geometry, p. 48, 194-197, 1957
- Ogilvy, Excursions in Geometry, ch 10, 1969
- Posamentier, Alfred and Gordon Sheridan, Investigations in Geometry, Addison-Wesley, 1982
- Yates, Robert C., The Trisection Problem, NCTM, 1971

Topology of highway intersections

- Grazis, D., ed., Traffic Science, Wiley, 1974Consortium, Winter, 198

Wallpaper patterns

- Audsley, W. D. , Designs and Patterns from Historical Ornament, Dover
- Crowe, Donald, Symmetry, Rigid Motions, and Patterns, Himap (bib)
- Lockwood, E.H., and R.H. MacMillan, Geometric Symmetry
- Lynn, Catherine, Wallpaper in America: fron the 17th century to World War I
- Stevens, Peter, Handbook of Regular Patterns: an Introduction to Symmetry in Two Dimensions
- Washburn and Crowe
- Waterman, V. Ann, Design Your Own Repeat Patterns, Dover
- Newman, Rochelle and Martha Boles, The Golden Relationship: Art, Math, Nature
- Christie, Archibald, Pattern Design, Dover
- Dye, Daniel Shets, Chinese Lattice Designs, Dover
- Gallian, Joseph, Contemporary Abstract Algebra, Heath, Chapter 30
- Grunbaum, Branko and G.C. Shepard, Tilings and Patterns, 1986, Freeman
- Huinker, DeAnn M. and Eugene M. Krause, Investigations in Mathematics for Elementary Teachers, Heath, 1991, pp. 271-274
- Schattschneider, Doris, The Plane Symmetry Groups: Their Recognition and Notation, American Mathematical Monthly 85(6) 439-450
- Stevens, Peter, Handbook of Regular Patterns, MIT Press, 2980
- Waterman, V. Ann, Design your Own Repeat Patterns, Dover
- http://www.geom.umn.edu:80/~math5337/Wallpaper/