THE MATHEMATICS TEACHER

An Official Journal of The National Council of Teachers of Mathematics (Incorporated)

Classified Index, Volume 77

Author Index

Allen, Frank B. The New Math-an Opportunity Lost. Nov., 589-90.

Allen, William E. Graphing Polynomials by Using the Powers of the Factors. Feb., 109-10.

Anderson, Bill D., Dennis P. Grantham, and John F. Lamb, Jr. Mathematical Aspects of a Lunar Shuttle Landing Revisited. Sept., 460-64.

Avital, Shmuel, and Israel Kleiner. The Relativity of

Mathematics. Oct., 554-58, 562.

Awad, M. Michael, and Joe L. Wise. Mainstreaming Visually Handicapped Students in Mathematics Classes. Sept., 438-41.

Barnett, David. A "Metric Review Show." Feb., 106-7. Bedford, Crayton W. Why Are We Learning This? Apr., 258 - 63

Beggs, William. A Computer Approach to a Nonroutine Problem. Nov., 614-15.

Bevis, Jean H., and Jan List Boal. County Agent's Problem: Or, How Long Is a Short Barn? Apr., 278-

Bezuszka, Stanley J., and Margaret J. Kenney. A Square Share: Problem Solving with Squares. Sept., 414 - 28.

Binder, Charles P. Periodic Decimal Fractions with Computers. Dec., 688-90.

Blake, Rick N. 1089: An Example of Generating Problems. Jan., 14-19.

Blose, Murray M., and Gerald K. Goff. The "Normal"

Approach to Graphing. Feb., 107-8. Boal, Jan List, and Jean H. Bevis. County Agent's Problem: Or, How Long Is a Short Barn? Apr., 278-

Braswell, James S. Advanced Placement Computer Science. May, 372-79.

Brieske, Tom. Visual Thinking with Translations, Half-Turns, and Dilations. Sept., 466-69.

Burch, Charles I., Jr., and Dan Kunkle. Modeling Growth-a Discrete Approach. Apr., 266-68.

. Symbolic Computer Algebra: The Classroom Computer Takes a Quantum Jump. Mar., 209-14.

Byrd, Frances, and Ernest Woodward. Make Up a Story to Explain the Graph. Jan., 32-34.

Cangelosi, James S. Increasing Student Engagement During Questioning Strategy Sessions. Sept., 470-

Channell, Dwayne E. Problem Solving with Computers. Oct., 534-41.

Clemens, Stanley R. Systematic Experimentation-a Frequently Used Problem-solving Strategy. Mar., 171-76. See also Sept., 488.

Clements, C. Robert. Summing the Harmonic Series. Mar., 195-96.

Cole, Jeffery A., and E. John Hornsby, Jr. Composing "Interesting" Exercises Involving Rational Expressions, Mar., 216-19.

Coopersmith, Art. Factoring Trinomials: Trial and Error? Hardly Ever! Mar., 194-95.

Crawford, Carol G., and Bao-Ting Lerner. Great Expectations-Challenging the Interests of the Gifted and Talented Junior High Student. Jan., 21-26.

Cuoco, Albert A. Making a Divergent Series Converge. Dec., 715-17.

Denman, Theresa I. The Buying and Selling of Textbooks-Friend or Foe of the Curriculum? Jan., 8-9. Dickie, Paul G. Prealgebra Mathematics for Above-

Average Students. Feb., 88-91.

Donahue, Richard J. Calculating Palindromic Sums by Computer. Apr., 269-71. See also Oct., 504.

Duncan, David R., and Bonnie H. Litwiller. New Settings for Regular Polyhedral Dice Games: The Probability of Winning. Mar., 228-31.

Duncan, Richard B. Backward Multiples. Feb., 103. See also Sept., 412, 465.

Dunn, Ken A. Transformation Geometry: An Application of Physics. Feb., 129-34.

Eid, Frederick. A Discovery Involving Volume. May,

Elgarten, Gerald H. Using Computers to Reinforce and Enrich the Mathematics Curriculum. Sept., 456-59.

Ernest, Paul. Introducing the Concept of Probability. Oct., 524-25.

Ewbank, William A. The Summer Olympic Games: A Mathematical Opportunity, May, 344-48.

Flusser, Peter. Bertrand's Box Paradox. Dec., 700-704. Frankenstein, Marilyn. Using Mathematical Magic to Reinforce Problem-solving Methods. Feb., 96-100.

Frantz, Marny, and Sylvia Lazarnick. Female Mathematics Educators Recommend Books. Mar., 233-34.

Garman, Brian. Applying a Linear Function to Schedule Tennis Matches. Oct., 544-47.

. The Calculator, Math Magic, and Algebra. Sept., 448-50.

Gill, Steve. Making Boxes. Oct., 526-30.

Gilliland, Kay, and Mattye Pollard. Ethics and Computer Use. Nov., 598-603.

Gilmore, Hal. Checking with Magic Squares. May, 351-

Goff, Gerald K., and Murray M. Blose. The "Normal"

Approach to Graphing. Feb., 107-8.

Gordon, Jeffry. Photographic Slides: A Better Way to Demonstrate Software to Large Groups. Nov., 609-

Gordon, Noam, and Alfred S. Posamentier. An Astounding Revelation on the History of Pi. Jan., 52, 47.

See also Sept., 410.

Grantham, Dennis P., Bill D. Anderson, and John F. Lamb, Jr. Mathematical Aspects of a Lunar Shuttle Landing Revisited, Sept., 460-64.

Greenwood, Jay. My Anxieties about Math Anxiety.

Dec., 662-63.

Hall, Lucien T., Jr. Estimation and Approximation-Not Synonyms. Oct., 516-17.

Hartzler, J. S. When Is One Not Equal to One? Apr., 274-76.

Hawkins, Vincent J. Ring-Around-a-Trapezoid. Sept., 450-51.

Henningsen, Jacqueline. An Activity for Predicting Performances in the 1984 Summer Olympics. May,

Herrmann, James P. The Microcomputer in a Prealgebra Class. Sept., 451, 490.

Hilton, Peter. Cryptanalysis in World War II-and Mathematics Education. Oct., 548-52.

Hollingsworth, Caroline. Perplexed by Hexed^R. Oct., 560-62.

Hollist, J. Taylor. General Equations for a Reflection in a Line. May, 352-53.

Hornsby, E. John, Jr., and Jeffery A. Cole. Composing "Interesting" Exercises Involving Rational Expressions. Mar., 216-19.

Jansson, Lars C. Mathematics Assessment in Canada an Overview. May, 382-87, 398.

Jones, Chancey O., and John A. Valentine. The College Entrance Examination Board and Mathematics Education. May, 369-71.

Kenney, Margaret J., and Stanley J. Bezuszka. A Square Share: Problem Solving with Squares. Sept., 414-28.

Kimberling, Clark. Conics. May, 363-68. See also Nov., 592.

Generate Your Own Random Numbers. Feb., 118 - 23.

. Lines. Sept., 452-54, 435.

. Mean, Standard Deviation, and Stopping the Stars. Nov., 633-36.

. Probability Machine. Jan., 42-47.

Kleiner, Israel, and Shmuel Avital. The Relativity of Mathematics. Oct., 554-58, 562.

Knight, Genevieve M. Equity in Mathematics Education: A Set of Conferences. Mar., 235-36.

Koslov, Muriel, and Jack Ott. Computer-assisted Practice in Graphing Sine and Cosine Functions. Oct., 532-33.

Kulm, Gerald. Mathematics Processes and Computers in the Junior High School. Nov., 628-30.

Kunkle, Dan, and Charles I. Burch, Jr. Modeling Growth—a Discrete Approach. Apr., 266-68.

. Symbolic Computer Algebra: The Classroom Computer Takes a Quantum Jump. Mar., 209-14.

Lamb, John F., Jr., Bill D. Anderson, and Dennis P. Grantham. Mathematical Aspects of a Lunar Shuttle Landing Revisited. Sept., 460-64.

Landauer, Edwin G. Counting Using License Plates and Phone Numbers: A Familiar Experience. Mar.,

183-87, 234.

. A Curious Number Pattern, Dec., 683-86.

Lappan, Glenda, Elizabeth A. Phillips, and Mary Jean Winter. Spatial Visualization. Nov., 618-25.

Lazarnick, Sylvia, and Marny Frantz. Female Mathe-

matics Educators Recommend Books. Mar., 233–34. Leitzel, Joan R., Bruce Meserve, and Betty K. Lichtenberg. Mathematical Education in China, 1983. Dec.,

Lerner, Bao-Ting, and Carol G. Crawford. Great Expectations-Challenging the Interests of the Gifted and Talented Junior High Student. Jan., 21-26.

Libeskind, Shlomo, and Johnny W. Lott. The Shoemaker's Knife-an Approach of the Polya Type. Mar.,

178-82, 236.

Lichtenberg, Betty K., Bruce Meserve, and Joan R. Leitzel. Mathematical Education in China, 1983. Dec., 673-81.

Lifshitz, Maxine Rosman. Little-known Facts about the Quadratic Function. May, 353-56.

Litwiller, Bonnie H., and David R. Duncan. New Settings for Regular Polyhedral Dice Games: The Probability of Winning. Mar., 228-31.

Lott, Johnny W., and Shlomo Libeskind. The Shoemaker's Knife-an Approach of the Polya Type. Mar., 178-82, 236.

Lulli, Henry. An Algebraic Puzzler. Dec., 688.

Lyon, Betty Clayton. Using Magic Borders to Generate Magic Squares. Mar., 223-26.

McMillan, Robert D. Babylonian Quadratics. Jan., 63-

Manheim, Jerome H. Where Did the Graph Go? Oct., 532-33.

Marche, M. M. A Pythagorean Curiosity. Nov., 611-13. Maurer, Stephen B. College Entrance Mathematics in the Year 2000. Sept., 422-28.

. Two Meanings of Algorithmic Mathematics.

Sept., 430-35.

Meserve, Bruce, Betty K. Lichtenberg, and Joan R. Leitzel. Mathematical Education in China, 1983. Dec., 673-81.

Messer, Robert. Factorial! Jan., 50-51.

Mitchell, Charles E. The Importance of Three Years of High School Mathematics. Oct., 510-13.

Morgan, Frank W., and Larry A. Morgan. Personal Computers, p-Values, and Hypothesis Testing. Sept., 473 - 78.

Morgan, Larry A., and Frank W. Morgan. Personal Computers, p-Values, and Hypothesis Testing. Sept.,

Neff, John D. The Secondary School Curriculum-What Should It Include? Mar., 158-59.

Ott, Jack, and Muriel Koslov. Computer-assisted Practice in Graphing Sine and Cosine Functions. Oct., 532-33.

Parzynski, William R. The Geometry of Microwave Antennas. Apr., 294-96.

Phillips, Elizabeth A., Glenda Lappan, and Mary Jean Winter. Spatial Visualization. Nov., 618-25.

Pinkerton, Kenny, Triangular Differences. Apr., 272– 74.

Pollak, H. O. Cooperation in Mathematics Education. Apr., 252-53.

Pollard, Mattye, and Kay Gilliland. Ethics and Computer Use. Nov., 598–603.

Posamentier, Alfred S., and Noam Gordon. An Astounding Revelation on the History of Pi. Jan., 52, 47. See also Sept., 410.

Powers, Sandra M. Pictographs. Mar., 192-94.

Pulfer, Wayne. The Inverse of a Function (of a Single Variable). Jan., 34–35.

Reagan, James. Thar's Gold in Them Thar Conic Sections. May, 357–59.

Richbart, Lynn A. Exotic Horse-Race Wagering and Combinatorics. Jan., 35–36.

Ridenhour, Jim R., and Ernest Woodward. The Probability of Winning in McDonald's Star RaidersTM Contest. Feb., 124–28. See also Sept., 465, 487.

Roberts, William J. Honeycomb Geometry: Applied Mathematics in Nature. Mar., 188–90.

Sacco, William, and Clifford W. Sloyer. An Application of the Distance Formula to Medical Science. Jan., 27– 29.

Saxon, John H., Jr. Present Mathematics Course Sequence Is Inadequate. May, 325–26.

Schaaf, Oscar F. Teaching Problem-solving Skills. Dec., 694–99.

Schulz, Charles E. A Survey of Colleges and Universities regarding Entrance Requirements in Computer-related Areas. Oct., 519–21.

Sconyers, James M. Approximation of Area under a Curve, Feb., 92–93.

Seymour, Dale. We Can Dream, Can't We? Oct., 496-98, 559.

Shiflett, Ray C., and Harris S. Shultz. A Trigonometric Solution to a Minimum Time Problem. Mar., 220–21. See also Dec., 670.

Shulte, Albert P., and Jim Swift. Plotting and Predicting from Pairs. Sept., 442–47, 464.

Shultz, Harris S., and Ray C. Shiflett. A Trigonometric Solution to a Minimum Time Problem. Mar., 220–21. See also Dec., 670.

Sloyer, Clifford W., and William Sacco. An Application of the Distance Formula to Medical Science. Jan., 27– 29. Small, R. D. A Heuristic Method for Solving Polynomial Equations. Dec., 710–14.

Smith, Ronald E. Some Sum Derivations. Feb., 110-12.Soptick, John M. The "Arrow Method" of Teaching Logarithms. Dec., 690-92.

Spence, Lawrence E., and Charles Vanden Eynden. Program Your Microcomputer to Do Arithmetic. Apr., 287-91.

Sundstrom, Ted. Using a Calculator to Check Solutions of Quadratic Equations. Apr., 276–78.

Swetz, Frank J. Seeking Relevance? Try the History of Mathematics. Jan., 54–62, 47.

Swift, Jim, and Albert P. Shulte. Plotting and Predicting from Pairs. Sept., 442–47, 464.

Szczepanski, Ronald. Generating Primitive Pythagorean Triples: A Computer Solution. Mar., 191–92.

Thomas, David A. Understanding the Central Limit Theorem. Oct., 542–43.

Usiskin, Zalman. Mathematics Is Getting Easier. Feb., 82–83. See also Sept., 406.

Valentine, John A., and Chancey O. Jones. The College Entrance Examination Board and Mathematics Education. May, 369–71.

Vanden Eynden, Charles, and Lawrence E. Spence. Program Your Microcomputer to Do Arithmetic. Apr., 287-91.

Wapner, Leonard M. Modeling with Difference Equations: Two Examples. Feb., 136–40.

Wiatt, Joyce. 125 Kids + 4 Months' Prep + 7 Computers = 3 Great Days. Dec., 706-9.

Wilkinson, Jack D. The Computer—a Tool for Instruction? Sept., 404–5, 490.

Willoughby, Stephen S. President's Report: Mathematics Education 1984: Orwell or Well? Oct., 575–82.

Winter, M. J. A Computer-based Investigation in Algebra. Mar., 203–7.

Winter, Mary Jean, Glenda Lappan, and Elizabeth A. Phillips. Spatial Visualization. Nov., 618–25.

Wise, Joe L., and M. Michael Awad. Mainstreaming Visually Handicapped Students in Mathematics Classes. Sept., 438–41.

Woodward, Ernest, and Frances Byrd. Make Up a Story to Explain the Graph. Jan., 32–34.

Woodward, Ernest, and Jim R. Ridenhour. The Probability of Winning in McDonald's Star RaidersTM Contest. Feb., 124–28. See also Sept., 465, 487.

Subject Index

Algebra

New Publications, 70, 73–74, 147, 167–68, 242, 302, 392, 484, 571, 645–47, 720–21.

Reader Reflections, 166, 408, 488, 504, 506–8, 664. An Algebraic Puzzler. Dec., 688.

An Application of the Distance Formula to Medical Science, Jan., 27–29.

Applying a Linear Function to Schedule Tennis Matches. Oct., 544–47.

The "Arrow Method" of Teaching Logarithms. Dec., 690-92.

Babylonian Quadratics. Jan., 63-65.

The Calculator, Math Magic, and Algebra. Sept., 448– 50.

Checking with Magic Squares. May, 351-52.

Composing "Interesting" Exercises Involving Rational Expressions. Mar., 216-19.

A Computer-based Investigation in Algebra, Mar., 203-7.

A Curious Number Pattern. Dec., 683-86.

Factoring Trinomials: Trial and Error? Hardly Ever! Mar., 194–95.

General Equations for a Reflection in a Line. May, 352-53

Generating Primitive Pythagorean Triples: A Computer Solution. Mar., 191–92.

Graphing Polynomials by Using the Powers of the Factors. Feb., 109-10.

A Heuristic Method for Solving Polynomial Equations. Dec., 710–14.

The Inverse of a Function (of a Single Variable). Jan., 34-35

Little-known Facts about the Quadratic Function. May, 353-56.

Mathematical Aspects of a Lunar Shuttle Landing Revisited. Sept., 460-64.

The "Normal" Approach to Graphing. Feb., 107-8.

Pictographs. Mar., 192-94.

Plotting and Predicting from Pairs. Sept., 442–47, 464. A Pythagorean Curiosity. Nov., 611–13.

Symbolic Computer Alashae The Classe

Symbolic Computer Algebra: The Classroom Computer Takes a Quantum Jump. Mar., 209–14.

Thar's Gold in Them Thar Conic Sections. May, 357–59. Triangular Differences. Apr., 272–74.

Two Meanings of Algorithmic Mathematics. Sept., 430– 35.

Using a Calculator to Check Solutions of Quadratic Equations. Apr., 276-78.

Using Computers to Reinforce and Enrich the Mathematics Curriculum. Sept., 456-59.

Using Mathematical Magic to Reinforce Problem-solving Methods. Feb., 96–100.

Where Did the Graph Go? Oct., 532-33.

Applications

New Products, 68.

New Publications, 71–72, 146, 148–49, 165, 245, 394– 95, 484–86.

Reader Reflections, 502, 504.

An Activity for Predicting Performances in the 1984 Summer Olympics. May, 338-41.

An Application of the Distance Formula to Medical Science. Jan., 27–29.

Applying a Linear Function to Schedule Tennis Matches. Oct., 544-47.

Cryptanalysis in World War II—and Mathematics Education. Oct., 548–52.

The Geometry of Microwave Antennas, Apr., 294–96.
Honeycomb Geometry: Applied Mathematics in Nature, Mar., 188–90.

Mathematical Aspects of a Lunar Shuttle Landing Revisited. Sept., 460-64.

Modeling Growth—a Discrete Approach. Apr., 266–68.
Modeling with Difference Equations: Two Examples.
Feb., 136–40.

The Summer Olympic Games: A Mathematical Opportunity. May, 344–48.

Arithmetic

New Products, 68–69, 145, 240, 391.

New Publications, 75, 149, 166, 305, 645, 648, 722.

Reader Reflections, 84–85, 164, 168, 254, 410, 487.

Backward Multiples. Feb., 103. See also Sept., 412, 465.

Calculating Palindromic Sums by Computer. Apr., 269–71. See also Oct., 504.

A Curious Number Pattern. Dec., 683-86.

Make Up a Story to Explain the Graph. Jan., 32–34. The Microcomputer in a Prealgebra Class. Sept., 451,

Periodic Decimal Fractions with Computers. Dec., 688– 90.

Prealgebra Mathematics for Above-Average Students. Feb., 88-91.

Program Your Microcomputer to Do Arithmetic. Apr., 287-91.

A Pythagorean Curiosity. Nov., 611-13.

A Square Share: Problem Solving with Squares. Sept., 414-28.

1089: An Example of Generating Problems, Jan., 14– 19.

Thar's Gold in Them Thar Conic Sections. May, 357–59. Triangular Differences. Apr., 272–74.

Using Magic Borders to Generate Magic Squares. Mar., 223–26.

Using Mathematical Magic to Reinforce Problem-solving Methods. Feb., 96–100.

When Is One Not Equal to One? Apr., 274-76.

Basic Skills

See "Curriculum" or content areas.

Book Reviews

See "New Publications" under content areas.

Calculus

New Publications, 72–73, 393, 483, 486, 570, 648, 720. Reader Reflections, 37, 166.

Approximation of Area under a Curve. Feb., 92–93.
County Agent's Problem: Or, How Long Is a Short Barn? Apr., 278–82.

Factorial! Jan., 50-51.

Making a Divergent Series Converge. Dec., 715–17. Some Sum Derivations. Feb., 110–12.

Summing the Harmonic Series. Mar., 195–96.

Understanding the Central Limit Theorem. Oct., 542-

Computers and Calculators

New Products, 240, 566-67.

New Projects, 301-2.

New Publications, 72–75, 146–47, 149, 160–64, 170, 242, 244–45, 302–5, 392, 394, 396–97, 482–83, 486, 568, 570–72, 646–50, 720–23.

Reader Reflections, 12, 37, 84, 406-7, 412, 500, 502, 504, 592, 594, 596.

Advanced Placement Computer Science. May, 372-79. Approximation of Area under a Curve. Feb., 92-93.

Backward Multiples. Feb., 103. See also Sept., 412, 465.
Bertrand's Box Paradox. Dec., 700–704.

Calculating Palindromic Sums by Computer. Apr.,

269-71. The Calculator, Math Magic, and Algebra. Sept., 448-

50.
A Computer Approach to a Nonroutine Problem. Nov., 614–15.

√Computer-assisted Practice in Graphing Sine and Cosine Functions. Oct., 532–33.

The Computer—a Tool for Instruction? Sept., 404–5, 490.

731

A Computer-based Investigation in Algebra. Mar., 203-7.

Conics. May, 363-68. See also Nov., 592. A Curious Number Pattern. Dec., 683-86.

Ethics and Computer Use. Nov., 598-603.

Factorial! Jan., 50-51.

Generate Your Own Random Numbers. Feb., 118–23.
 Generating Primitive Pythagorean Triples: A Comput-

Generating Primitive Pythagorean Triples: A Computer Solution. Mar., 191–92.

ICCE Policy Statement on Network and Multiple Machine Software. Nov., 606–7.

Lines. Sept., 452–54, 435.

Mathematics Processes and Computers in the Junior High School. Nov., 628–30.

Mean, Standard Deviation, and Stopping the Stars. Nov., 633-36.

The Microcomputer in a Prealgebra Class. Sept., 451, 490.

Modeling Growth—a Discrete Approach. Apr., 266-68.
Modeling with Difference Equations: Two Examples.

Feb., 136-40. 125 Kids + 4 Months' Prep + 7 Computers = 3 Great

Days. Dec., 706–9.
Periodic Decimal Fractions with Computers. Dec., 688–

Photographic Slides: A Better Way to Demonstrate Software to Large Groups. Nov., 609-11.

Plotting and Predicting from Pairs. Sept., 442-47, 464.

Probability Machine. Jan., 42–47.

Problem Solving with Computers. Oct., 534-41.
Program Your Microcomputer to Do Arithmetic. Apr.,

287–91.

A Pythagorean Curiosity. Nov., 611-13.
A Survey of Colleges and Universities regarding Entrance Requirements in Computer-related Areas. Oct., 519-21.

✓ Symbolic Computer Algebra: The Classroom Computer Takes a Quantum Jump. Mar., 209–14.

Using a Calculator to Check Solutions of Quadratic Equations. Apr., 276–78.

Using Computers to Reinforce and Enrich the Mathematics Curriculum. Sept., 456-59.

Courseware

Algebra

Algebra, Vol. 2, Apple II, Applesoft, Apple II⁺, IIe, 48K, DOS 3.3, Apr., 298.

Algebra, Vol. 3, Apple II, Applesoft, Apple II⁺, IIe, 48K, DOS 3.3 (available Franklin Ace). Nov., 640.

Algebra, Vol. 4, Apple II, Applesoft, Apple II⁺, IIe, 48K, DOS 3.3. Apr., 299.

Algebra Arcade, Apple II, II⁺ and IIe, 48K, DOS 3.3 (available Atari, Commodore 64 and IBM PC). May, 388.

Algebra I (Disks 5, 6, and 7), Apple II*, DOS 3.3. Nov., 640–41.

Algebra, Structure and Method, Book 1, New Edition, Apple II, II*, and IIe, 32K, DOS 3.3. Oct., 563.

Algebra II (Disks 4, 5, and 6), Apple II+, DOS 3.3. Nov., 641.

Binomial Multiplication, Apple II⁺ and IIe, 48K, disk. Apr., 299.

Factoring Algebraic Equations, Apple II* and IIe, 48K, disk. May, 388.

Graphing Equations, Apple II, 48K, DOS 3.3. Oct., 564.

Graphing Linear Functions, Apple, 48K, disk. May, 388-89.

Introductory Algebra (Maths Invaders Series), Apple II⁺, 48K, DOS 3.3. May, 389.

Master Math, Apple II, II⁺ and IIe, 48K, disks (available Commodore 64, Commodore PET, VIC 20, and other computers). May, 389.

Precalculus Computer Activities, Apple II, II⁺, IIe, disk (available IBM PC, TRS-80, Model II). Oct., 565.

Problem Solving in Algebra (Lessons 1–38), TRS–80, Model III, disks. Nov., 642.

Simultaneous Linear Equations, Apple II⁺ and IIe, 48K, disk. Apr., 300.

Special Products and Algebraic Factors (Maths Invaders Series), Apple II⁺, 48K, DOS 3.2 or 3.3. Sept., 480.

Tobbs Learns Algebra: Puzzles and Problem Solving, Apple II, 48K, DOS 3.3 (available TRS-80, 32K). May, 390-91.

Ultra Function Plot, Apple II, 48K, DOS 3.2 or 3.3.
Jan., 68.

WEPCO Electronic Blackboard Series: Algebra Electronic Blackboard, Apple II⁺, 48K, DOS 3.3. Mar.,

WEPCO Electronic Blackboard Series: Function Plotter, Apple II⁺, 48K, DOS 3.3. Feb., 143.

WEPCO Electronic Study Guide for Precalculus Algebra, Diskette I: Fundamental Concepts of Algebra, and Diskette II: Equations and Inequalities, Apple II⁺, 48K, DOS 3.3. Apr., 301.

WEPCO Electronic Study Guide for Precalculus Algebra, Diskette IV: Polynomial Functions, Rational Functions, and Conic Sections, Apple II⁺, 48K, DOS

3.3. Dec., 719.

WEPCO Electronic Study Guide for Precalculus Algebra, Diskette V: Exponential and Logarithmic Functions; Diskette VI: Systems of Equations and Inequalities, Apple II*, 48K, DOS 3.3. Sept., 481.

Applications

The Bookkeeper, Atari 800, 48K, disks. Mar., 237–38. Mathematics Life Skills, Money Manager, vol. 1, Apple II, 48K, DOS 3.3. Mar., 238–39.

Arithmetic

Archimedes' Apprentice, TRS-80, 16K, Level II, cassette. Mar., 237.

Arithmetic Drill & Practice (Maths Invaders Series), Apple II⁺, 48K, DOS 3.2 or 3.3. May, 388.

Explorer Metros: A Metric Adventure, Apple II, 48K, DOS 3.3. Feb., 142.

Foto-Flash and Scientific Notation, Apple II+, 16K, cassette or disk. Jan., 67.

Fractions, Decimals & Percent, Apple II⁺, IIe, 48K, DOS 3.3. Oct., 564.

Math Doctor, M.D., Apple II, II⁺, and IIe, disk (available TRS-80, Models III and IV). Dec., 718-19.

Math Skill Builders, Apple II⁺, IIe, 64K, disk (available TRS-80, III, 48K). Oct., 565.

Mathematics Life Skills, vol. 2: World of Work, and Mathematics Life Skills, vol. 3: Purchase Power, Apple II, 48K, DOS 3.3. Nov., 642.

Percents, Apple II, 48K, DOS 3.3. Feb., 143.

Problem Solving Strategies, Apple II/II⁺, 48K, disks (available TRS-80, Models I & III). Sept., 479-80.

"PSST"—Problem Solving Strategy Training, rev. ed., Apple II and IIe, 48K, DOS 3.3. May, 389-90. Ratios and Proportions, Apple II, 48K, DOS 3.3. Feb.,

Read and Solve Math Problems #2, Apple II, 48K,

cassettes or disks. May, 390.

The Semantic Calculator (SemCalc), Apple II, Applesoft, 48K, DOS 3.3 (available TRS-80, Model III, 32K). Apr., 299-300.

Calculus

ARBPLOT, Apple II, 48K, DOS 3.3. Jan., 66.

Master Math, Apple II, II⁺ and IIe, 48K, disks (available Commodore 64, Commodore PET, VIC 20, and other computers). May, 389.

Surface for the Apple II, Apple II, Applesoft in ROM,

48K, DOS 3.3. Sept., 480-81.

Surfaces for Multivariable Calculus, Apple II, Applesoft in ROM, 48K, DOS 3.3. Nov., 643.

Computer Science

Computer Literacy: A Hands-On Approach, Apple II, DOS 3.3 and Applesoft required (available TRS-80). Jan., 66-67.

Karel the Robot: A Gentle Introduction to the Art of Programming, Apple II, 64K, Pascal text editor, disks. Mar., 238.

Meddle Pruf, Apple II+, 48K, DOS 3.3. Jan., 67.

Games and Puzzles

Baffles, Applesoft, 48K, DOS 3.3. Dec., 718.

Black/Kayles (Mindstretcher Series), PET, 8K, cassette (available Commodore 64 cassette, Apple, 48K, and Commodore 64 disk). Sept., 479.

Checkers: The Mind of Man Series, Vol. 2, Apple II,

48K, DOS 3.3. Sept., 479.

Folklife Terminal Club Catalog Disk (Commodore Computers Users Group), disk. Sept., 479.

Jinx/Welter, Apple II+, 48K, disk. Oct., 564-65.

Odin: The Mind of Man Series, Vol. 3, Apple II, 48K, DOS 3.3. Feb., 142–43.

Salina Math Games, Apple II, 48K, disks. Nov., 642–43. Teasers by Tobbs: Puzzles and Problem Solving, Apple II, 48K, DOS 3.3 (available Atari, TRS–80, 16K cassette, 32K disk). Feb., 143.

Geometry

Descartes' Delight: A Language for Computer-inspired Learning in Mathematics, Apple II⁺, disks (available TRS-80). Oct., 563-64.

Geometry (Disks 4 and 5), Apple II+, DOS 3.3. Nov., 641.

Mathdisk One and Workbook for Mathdisk One, Apple II, disk. Nov., 641–42.

WEPCO Electronic Study Guide for Precalculus Algebra, Diskette IV: Polynomial Functions, Rational Functions, and Conic Sections, Apple II⁺, 48K, DOS 3.3. Dec., 719.

Probability

Sets, Probability and Statistics: The Mathematics of Insurance, Apple Pilot, disks (available SuperPI-LOT). May, 390.

Statistics

appleSTAT: Regression/Correlation Analysis on the Apple II/IIe, 48K, DOS 3.3. Oct., 563. Sets, Probability and Statistics: The Mathematics of Insurance, Apple Pilot, disks (available SuperPI-LOT). May, 390.

Tests

The Teacher's Assistant, Apple II, 48K, disk. Oct., 565.

Trigonometry

Triangle Trig, TRS-80, 16K, cassette. Apr., 300-1.

WEPCO Electronic Blackboard Series: Trigonometry Electronic Blackboard, Apple II⁺, 48K, DOS 3.3. Nov., 643-44.

Word Processing

CLASTM:Computerized Lesson Authoring System, IBM PC, disk. Dec., 718.

Curriculum

See also content areas.

New Products, 144–45, 239–40, 301, 481–82, 566, 719–20.

New Projects, 69, 145-46, 567, 644-45.

New Publications, 70, 147, 160, 304, 394, 482–84, 486, 569, 572.

Reader Reflections, 84, 165, 406.

April Calendar. Apr., 284-86.

The Buying and Selling of Textbooks—Friend or Foe of the Curriculum? Jan., 8-9.

The College Entrance Examination Board and Mathematics Education. May, 369-71.

College Entrance Mathematics in the Year 2000. Sept., 422–28.

Cooperation in Mathematics Education. Apr., 252-53.
Equity in Mathematics Education: A Set of Conferences. Mar., 235-36.

February Calendar. Feb., 114-16.

Female Mathematics Educators Recommend Books. Mar., 233-34.

Great Expectations—Challenging the Interests of the Gifted and Talented Junior High Student. Jan., 21– 26.

The Importance of Three Years of High School Mathematics. Oct., 510-13.

January Calendar. Jan., 38-40. See also May, 334.

Mainstreaming Visually Handicapped Students in Mathematics Classes. Sept., 438–41.

March Calendar. Mar., 198-200.

The Mathematical Sciences Curriculum K-12: What Is Still Fundamental and What Is Not. May, 380-81.

Mathematics Assessment in Canada—an Overview. May, 382–87, 398.

Mathematics Is Getting Easier. Feb., 82–83. See also Sept., 406.

Mathematics Processes and Computers in the Junior High School. Nov., 628–30.

May Calendar. May, 360-62, 381.

My Anxieties about Math Anxiety. Dec., 662-63.

The New Math-an Opportunity Lost. Nov., 589-90.

Present Mathematics Course Sequence Is Inadequate.
May, 325-26.

President's Report: Mathematics Education 1984: Orwell or Well? Oct., 575-82.

The Relativity of Mathematics. Oct., 554-58, 562.

The Secondary School Curriculum—What Should It Include? Mar., 158-59.

Two Meanings of Algorithmic Mathematics. Sept., 430–35.

We Can Dream, Can't We? Oct., 496–98, 559. Why Are We Learning This? Apr., 258–63.

Discovery

See "Teaching Methods-Discovery."

Games and Puzzles

See "Teaching Methods-Games and Puzzles."

General Mathematics

See "Arithmetic."

Geometry

New Products, 644.

New Publications, 242-43, 572, 647.

Reader Reflections, 502, 504, 508, 592.

Conics. May, 363-68. See also Nov., 592.

A Discovery Involving Volume. May, 356-57.

Estimation and Approximation-Not Synonyms. Oct.,

516-17. Synonyms. Oct.

General Equations for a Reflection in a Line. May, 352– 53.

The Geometry of Microwave Antennas. Apr., 294-96.

Lines. Sept., 452-54, 435.

Making Boxes. Oct., 526–30. Problem Solving with Computers. Oct., 534–41.

Ring-Around-a-Trapezoid. Sept., 450–51.

Spatial Visualization. Nov., 618-25.

A Square Share: Problem Solving with Squares. Sept., 414-28.

Transformation Geometry: An Application of Physics.

Feb., 129-34.
Visual Thinking with Translations, Half-Turns, and Dilations. Sept., 466-69.

Hand-held Calculators

See "Computers and Calculators."

History

New Publications, 72-73, 395-96, 568, 571, 645.

An Astounding Revelation on the History of Pi. Jan., 52, 47. See also Sept., 410.

Cryptanalysis in World War II—and Mathematics Education. Oct., 548–52.

Seeking Relevance? Try the History of Mathematics. Jan., 54-62, 47.

Mathematics in Other Countries

New Publications, 568, 573.

Mathematical Education in China, 1983. Dec., 673-81.

Measurement

Estimation and Approximation—Not Synonyms. Oct., 516-17.

A "Metric Review Show." Feb., 106-7.

Metric System

See "Measurement."

Minicalculators

See "Computers and Calculators."

NCTM

Officers, Committees, Projects, and Representatives

NCTM Affiliated Group Officers. Apr., 309-22.

NCTM Directors Elected in 1984. Sept., 489-90.

Officers, Directors, Committees, Representatives, and Executive Staff (1984–85). Nov., 655–58.

President's Message

President's Report: Mathematics Education 1984: Orwell or Well? Oct., 575-82.

Number Theory

See "Algebra" or "Arithmetic."

Opinions and Philosophies

The Buying and Selling of Textbooks—Friend or Foe of the Curriculum? Jan., 8-9.

The Computer—a Tool for Instruction? Sept., 404-5, 490

Cooperation in Mathematics Education. Apr., 252–53. Mathematics Is Getting Easier. Feb., 82–83. See also

Sept., 406. My Anxieties about Math Anxiety. Dec., 662-63.

Needed: Ideas to Teach Mathematics Better. May, 324.

The New Math—an Opportunity Lost. Nov., 589–90. Present Mathematics Course Sequence Is Inadequate. May, 325–26.

The Secondary School Curriculum—What Should It Include? Mar., 158-59.

We Can Dream, Can't We? Oct., 496-98, 559.

Probability

Reader Reflections, 256, 308, 465, 666, 668.

Bertrand's Box Paradox. Dec., 700-704.

Counting Using License Plates and Phone Numbers: A Familiar Experience. Mar., 183–87, 234.

Exotic Horse-Race Wagering and Combinatorics. Jan., 35-36.

35–36. Generate Your Own Random Numbers. Feb., 118–23.

Introducing the Concept of Probability. Oct., 524–25.New Settings for Regular Polyhedral Dice Games: The Probability of Winning. Mar., 228–31.

Personal Computers, p-Values, and Hypothesis Testing. Sept., 473–78.

Probability Machine. Jan., 42-47.

The Probability of Winning in McDonald's Star RaidersTM Contest. Feb., 124–28. See also Sept., 465, 487.

Problem Solving

See "Curriculum" or content areas.

New Products, 241.

New Publications, 70-71, 147, 242-43, 304-5.

Make Up a Story to Explain the Graph. Jan., 32-34.

The Shoemaker's Knife—an Approach of the Polya Type Mar., 178-82, 236.

Systematic Experimentation—a Frequently Used Problem-solving Strategy. Mar., 171-76. See also Sept., 488.

Teaching Problem-solving Skills. Dec., 694-99.

1089: An Example of Generating Problems. Jan., 14-

Using Mathematical Magic to Reinforce Problem-solving Methods. Feb., 96–100.

Statistics

An Activity for Predicting Performances in the 1984 Summer Olympics. May, 338–41.

Mean, Standard Deviation, and Stopping the Stars. Nov., 633-36.

The Summer Olympic Games: A Mathematical Opportunity. May, 344-48.

Teacher Education

New Project, 391–92, 568.

New Publications, 70, 302, 393, 397, 483, 486.

Teaching Methods

See content areas.

Discovery

The Calculator, Math Magic, and Algebra. Sept., 448–50.

Increasing Student Engagement During Questioning Strategy Sessions. Sept., 470–72.

A Square Share: Problem Solving with Squares. Sept., 414-28.

Triangular Differences. Apr., 272-74.

Games and Puzzles

New Products, 145.

New Publications, 244, 397, 482, 571, 648.

Reader Reflections, 254–55. Perplexed by Hexed^R. Oct., 560–62.

Tests

New Projects, 241.

The College Entrance Examination Board and Mathematics Education, May, 369-71.

Mathematics Assessment in Canada—an Overview. May, 382–87, 398.

Trigonometry

New Publications, 73, 392, 396, 573, 646.

Reader Reflections, 670.

Computer-assisted Practice in Graphing Sine and Cosine Functions. Oct., 532–33.

A Trigonometric Solution to a Minimum Time Problem. Mar., 220–21. See also Dec., 670.

Visual Aids and Audiovisual Material

See "New Products" under content areas.

Worksheets

An Activity for Predicting Performances in the 1984 Summer Olympics. May, 338-41.

Ethics and Computer Use. Nov., 598-603.

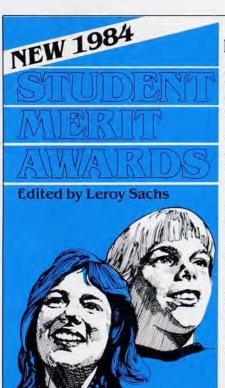
Making Boxes. Oct., 526-30.

Problem Solving with Computers. Oct., 534-41.

Spatial Visualization. Nov., 618-25.

A Square Share: Problem Solving with Squares. Sept., 414–28.

Teaching Problem-solving Skills. Dec., 694-99.



Middle School/High School

An awards program designed to motivate, stimulate, and reward students for their study and achievement outside the mathematics classroom. Two booklets are available — one for each level, middle school and high school.

Each booklet provides a series of challenging research projects that will intrigue your students and encourage them to dig deep into a topic that cannot be covered during class. Sample projects are the mathematics of flight, the fourth dimension and beyond, microcomputer programs, pi and its history, and so on. The materials also include teacher notes and a sample certificate that can be reproduced and awarded to students after they have completed the project.

These materials are reproducible; you can make as many copies as needed for your class. The booklets are 8½ by 11 inches, with perforated and 3-hole punched pages for your convenience.

You can apply this awards program any way you want: Have an awards ceremony during class, give an extra award for completing a certain number of projects, or design some unique way to reward your students. With creativity and imagination, you can use this program to inspire your students.

Middle School: 15 units, #335, \$6. High School: 18 units, #336, \$9.

NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS 1906 Association Drive, Reston, Virginia 22091

See the NCTM Materials Order Form in "New Publications."