

Building a High School Math Research Curriculum

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Rob is doing another talk Friday, on a 3rd/4th year math credit for all students at 8am in Room 32a.

Advanced Algebra with Financial Applications: The Perfect Junior/Senior Math Course

SUGGESTED RESOURCES

1. **Mathematics Teacher** back issues. NCTM members have free access to PDFs of back issues. Contact retiring teachers to see if they would donate their hard copy libraries of back issues.
2. **Writing Math Research Papers: A Guide for High School Students and Instructors Fifth Edition** by Robert Gerver, 2018. Information Age Publications; www.infoagepub.com.
3. rgerver@optonline.net. Contact Rob at this email address if you would like a copy of the PowerPoint slides sent to you via Dropbox.
4. **Developing Mathematical Reasoning in Grades K-12 (NCTM 1999 Yearbook)** Chapter 17.
5. **Developing Mathematically Promising Students**. Chapter 23. NCTM 1999.
6. **Proofs Without Words: Exercises in Visual Thinking I and II** by Roger B. Nelsen.
7. <https://rgerver9.wixsite.com/mathresearch>. This site has two sample student research papers and a sample student PowerPoint presentation.
8. **Chevron Best Practices in Education Winners** 1999.
9. **Write On! Math: Note Taking Strategies that Increase Understanding and Achievement Third Edition** by Robert Gerver, 2018.
10. **Mathematics Teacher September 2017**. "Building a High School Math Research Curriculum" by Robert Gerver, and students Lauren Santucci and Hana Leventhal.
11. **CMC Communicator December 2018** "Communication Strategies that Enhance Teaching and Learning," by Robert Gerver.
12. **CMC Communicator March 2019** "Students as Authors: Using Writing Projects to Aid Understanding," by Robert Gerver
13. **These Other Journals:** *Math Horizons*, *PLUS Magazine (online only)*, *The Pentagon*, *Duodecimal Bulletin*, *Mathematics and Informatics Quarterly*, *Fibonacci Quarterly*, Your state's Math Teachers' Journal, *School Science and Mathematics*, *Journal of Recreational Mathematics*, *Mathematics Magazine*

SOME RECOMMENDED *MATHEMATICS TEACHER* ARTICLES

January 2019	Lines as “Foci” for Conic Sections
October 2018	Illuminating Rectangle Border Challenges
September 2017	Isoperimetric Triangles
May 2014	Technology-Enhanced Discovery
April 2014	The Circle Approach to Trigonometry
March 2014	A Rationale for Irrationals
February 2014	Cultivating Deductive Thinking with Angle Chasing
January 2014	Angry Birds Mathematics: Parabolas and Vectors
October 2013	Geometry of the Fibonacci Matrix
September 2013	Are All Infinities Created Equal?
May 2013	Derivative of Area Equals Perimeter-Coincidence or Rule?
January 2013	Gaming: The Law of Large Numbers
March 2012	Exploring Conics: Why Does $B^2 - 4AC$ Matter?
November 2011	The Shape of an Ellipse
October 2011	Ellipses and Orbits: An Exploration of Eccentricity
September 2011	Investigating Zeros of Cubics with GeoGebra
August 2011	Delving into Limits of Sequences
May 2011	Back to Treasure Island
August 2009	An Intriguing Exponential Inequality
August 2008	Generating Problems from Problems and Solutions from Solutions
May 2008	Heron Triangles and Moduli Spaces
March 2007	What Else Can You Do with an Open Box?
August 2006	Card Folding: An Investigation with Limits
January 2006	Understanding Conic Sections Using Alternate Graph Paper
February 2005	Another Way to Divide a Line Segments into n Equal Parts
January 2005	Is a Triangle Determined by the Length of its Angle Bisectors?
May 2003	On Inscribed and Escribed Circles of Right Triangles
May 2003	A Direct Approach to the Sine of the Sum of Two Angles
March 2003	Paper Folding and Conic Sections
February 2003	More Meaning from the Geometric Mean
December 2002	Exploring the Four-Points-on-a-Circle Theorems
January 2002	Alternative Geometric Constructions
May 2001	Dividable Triangles-What Are They?
May 2001	The Equation of a Triangle
October 2000	A Triangle Divided: Investigating Equal Areas
October 2000	Building Connections Among Polynomial Functions
May 2000	Can Euler’s Line be Parallel to a Side of a Triangle?
April 2000	Discovering an Optimal Property of the Mean
March 2000	The Coefficient of Determination
October 1999	Counting Triples, Triangles, and Acute Triangles
May 1998	The Cevian Problem
April 1998	The Conic Sections in Taxicab Geometry
January 1995	Circular Graphs: Vehicles for Conic and Polar Coordinates
February 1993	If Pythagoras had a Geoboard
May 1991	A Monte Carlo Application to Approximate Pi
March 1991	The Probability that a Quadratic Equation Has Real Roots
January 1991	Odd Factors and Consecutive Sums: An Interesting Relationship
April 1990	Seven Ways to Find the Area of a Trapezoid
April 1989	Pythagoras Meets Fibonacci
January 1988	Triangles of Equal Area and Perimeter
March 1987	Spheres in a Cone: Proving the Conic Sections
January 1986	Factoring Polynomials and Fibonacci
October 1985	A Surprising Fact About Pythagorean Triples
May 1985	Measuring the Area of Golf Greens
March 1981	Area = Perimeter
September 1979	On the Radii of Inscribed and Escribed Circles of Right Triangles
April 1979	Serendipity on the Area of a Triangle
December 1976	Circles, Chords, Secants, Tangents and Quadratic Equations
May 1974	Pick’s Rule
May 1974	Some Methods for Constructing the Parabola
November 1966	Geometric Solution of a Quadratic Equation

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