

Resources and Support

“...we must use effective resources and instructional materials, often different from the ones we are currently using. More effective materials support students with different modes of learning, motivate the learning with real problems (eliminating the age-old question ‘When are we ever going to use this?’), incorporate current technology, emphasize important mathematics, and use instructional strategies that align with the ways real students really learn.”

Stenglein, 1998

Chapter 6

Teachers need up-to-date resources, learning materials, technology, and professional support to best meet the needs of their students. In the past, district mathematics specialists were available to obtain and share program resources and support. With the loss of many of these positions at the district level it was suggested that SciMath^{MN} develop and maintain resource information for improving mathematics education. Due to the impact mathematics reform has had on learning materials and program support, it is difficult to keep information current in a print format. Therefore, it was decided to make resources an integral part of the SciMath^{MN} website at:

<http://www.informns.k12.mn.us/scimathmn>

If you do not have access to this website you may contact Deb Rose at SciMath^{MN} (612.296.4058, 612.297.7340-fax, drose@inet.educ.state.mn.us) for print versions of the information listed below. If you have additional suggestions for resources or for improvement of the website please bring them to the attention of Anne Bartel (612.282.3707, 612.297.7340-fax, abartel@inet.educ.state.mn.us) or Nancy Nutting (612.296.8025, 612.297.7340-fax, nnutting@inet.educ.state.mn.us).

We hope this website will become the “first place to look” for up-to-date information about what’s available to support quality mathematics education for Minnesota students.

The professional resources and support on the website will include:

- [National Science Foundation Funded Curriculum Projects](#)

This is a listing of curriculum projects developed with NSF funding. It is also included in print in this chapter as a resource to curriculum review and textbook adoption committees. See the website above for the most current information.

- [Performance Package Alignment Project](#)

Check the Minnesota Department of Children, Families & Learning website at <http://cfl.state.mn.us>

- [A Beginning List of Resources for Teaching Mathematics](#)

Reform • Assessment • Curriculum & Instruction • Professional Development • Journals • Videos
• Websites & Listservs • Use of Calculators • Use of Manipulatives and Conceptual Connections • NCTM Fax on Demand

- [Student Extra Curricular Programs & Contests](#)

- [Professional Organizations - contact information](#)

State Level Organizations • National Organizations • Other Related Associations • Best Practice Networks - Regional Contacts • MEEP Regions and Coordinators • Educational Cooperative Service Units • Community Colleges, Technical Colleges, Professional Schools, Two- and Four- Year Colleges & Universities

- [Guides to Selecting Instructional Materials](#)

- [Writing Grants and Current Grant Opportunities](#)

National Science Foundation Funded Curriculum Projects

The projects summarized here are national, comprehensive curriculum projects for school mathematics. They are included to give brief descriptions and contact sources to teachers and districts, especially those who may be undergoing a curriculum review or textbook adoption process. The curriculum development in these projects was funded by the National Science Foundation through the Instructional Materials Development Program or Statewide Systemic Initiatives. The elementary, middle school, and high school curriculum projects were inspired by the National Council of Teachers of Mathematics' *Curriculum and Evaluation Standards for School Mathematics* which call for new curricular emphases and new ways of teaching mathematics.

According to NSF, these projects were developed "to actively engage students in their learning, to promote inquiry and critical thinking, to use technology as a tool to enhance learning, and to reflect relevant research on teaching, learning, and child development" (National Science Foundation, undated). All of the projects have involved extensive field testing, review, evaluation, and dissemination components.

To support the implementation of these standards-based curricula, the System Services Unit of the Minnesota Department of Children, Families & Learning will create and provide state-approved alternative performance packages for most of the standards in Learning Area 4: Math Applications (exception: Technical Applications). Alignment studies for programs that are complete enough and show enough alignment to the standards will be done first. These performance packages will align many of the embedded assessments in the NSF programs with state standards and be approved for use by those who are fully implementing one of these programs. Thus, schools adopting one of these programs as a full curriculum across several grades will be able to use the built-in assessments in these programs in place of state model packages. As projects at each level are completed, beginning with high school, the alignment will be published and disseminated. This will include:

- 1) the list of units from a given program required to implement each of the relevant math standards
- 2) the list of assessment components that are part of the curriculum which together constitute an alternative performance package
- 3) any necessary additional tasks required to fully align student work with the standards

Until the Performance Package Alignment Project is completed and published, it will be necessary to use the state model packages.

Published editions are now available for most of the NSF curriculum projects. Those still under development often allow access to pilot testing materials or distribute prototype units or lessons. Summaries given include the original project development site, description of the curriculum project, current contact information, production schedules, and names of Minnesotans who are involved in project development, testing, publishing, and/or implementation. Cost of the materials is not included due to the difficulty of keeping prices up-to-date and the unique nature of adoption processes, curriculum needs, and contracts with individual school districts.

The information in this version is what was available at the date of publication from project developers, publishers, websites, and summaries shared at the Great Plains Curriculum Showcase. For more information on these programs see the individual websites or contact the people/organizations specified in the grid. The websites are a good source of current information and often include sample lessons, background on the program, and ordering information. Watch the

SciMath^{MN} website at <http://www.informns.k12.mn.us/scimathmn> for updates on these programs. If you have difficulty getting information about any of these programs from the above sources or have corrections, please contact Nancy Nutting at SciMath^{MN} (612.296.8025, 612.297.7340-fax, nnutting@inet.educ.state.mn.us) or Sharon Stenglein, Mathematics Specialist at MDCFL (612.296.4070, 612.296.3775-fax, sharon.stenglein@state.mn.us). Information on NSF can be found at www.nsf.gov.

References

National Science Foundation (NSF). (undated). *Comprehensive curriculum projects*. Washington, D.C.: Author.

Stenglein, S. (1997, November). *Performance package alignment project: Mathematics curriculum projects*. Memorandum. St. Paul, MN

Great Plains Curriculum Showcase: Conference Resource Book. (1997, August 1-2). Omaha, NE: Nebraska Math & Science Initiative and High Plains Consortium at McREL.



Information obtained from project developers, publishers, websites, and summaries shared at the Great Plains Curriculum Showcase. Please bring additions or corrections to the attention of Nancy Nutting, SciMath^{MN} phone: 612.296.8025 fax: 612.297.7340 e-mail: nnutting@inet.educ.state.mn.us, website: www.informns.k12.mn.us/scimathmn

Elementary School Curriculum Projects

Investigations in Number, Data and Space

Technical Education Research Center

Project Directors: Susan Jo Russell, James Kaput, Douglas Clements, Michael Battista

The goals of this project, aimed at students in grades K-5, include meaningful mathematical problems; depth in mathematical thinking rather than superficial exposure to a series of fragmented topics; communication of mathematics content and pedagogy to teachers; and a substantial expansion of the pool of mathematically literate students. Themes in the title reflect all three Minnesota Mathematics Standards for Primary and Intermediate. All grades are currently available.

Publisher:

Dale Seymour Publications
P.O. Box 10888
Palo Alto, CA 94303-0879
800.872.1100 or 800.535.4391
fax 415.324.3424
<http://www.awl.com/dsp>

For additional information, contact:

Project Contact: Irene Baker
TERC, 2067 Massachusetts Ave.
Cambridge, MA 02140
617.547.0430,
fax 617.349.3535
irene_baker@terc.edu
<http://www.terc.edu>

Minnesota connections:

Jay Soule
Elementary Sales Rep
384 Highwood Drive Circle
Chaska, MN 55318
612.448.2644
800.535.4391

Janice Loppnow
St. Charles Elementary School
507.932.4910
fax 507.932.4700
jloppnow@informns.k12.mn.us

Ken Rood
Shakopee Public Schools
612.496.5095
fax 612.496.5093
k_rood@shakopee.k12.mn.us

Teaching Integrated Mathematics and Science Project (TIMS)

Published as **Math Trailblazers**

University of Illinois at Chicago

Project Director: Philip Wagreich

The underlying premise of this curriculum (grades K-5) is that mathematics is best learned through active involvement in solving real problems. Through organized investigations of everyday situations students get a balanced and practical approach to learning mathematics grounded in their experiences to build abstract concepts. The curriculum integrates mathematics with many disciplines, especially science and language arts. All grades are currently available.

Publisher:

Kendall Hunt
4050 Wesark Drive
P.O. Box 1840
Dubuque, IA 52004-1840
800.542.6657, fax 319.589.1071

For additional information, contact:

Joan Bieler,
Assistant Director, TIMS
Institute for Mathematics and Science Education
840 Taylor St.
Chicago, IL 60607-7019
312.413.2970, fax 312.413.7411
jbieler@uic.edu
<http://www.math.uic.edu/IMSE/tims.html>

Minnesota connection:

Thomas Post
Project Advisory Committee
University of Minnesota
240 Peik Hall, 159 Pillsbury Drive SE
Minneapolis, MN 55455
612.625.0069.
postx001@staff.tc.umn.edu.

Everyday Mathematics

University of Chicago

Project Director: Max Bell

The Everyday Mathematics curriculum (grades K-6) was developed to make mathematical thinking understandable to all students. It encourages teachers and students to go beyond arithmetic and to explore more of the mathematics spectrum by investigating data gathering and analysis, probability, geometry, patterns, and algebra. Mathematics is integrated into other subject areas and is part of ongoing classroom routines, outdoor play, and spare transitional moments that occur every day. Topics or strands are not taught in isolation. Concepts are interwoven over time and in a variety of applications. All grades are currently available.

Publisher:

Everyday Learning Corporation
P.O. Box 812960
Chicago, IL 60681
800.382.7670
fax 312.540.5848

For additional information, contact:

University of Chicago
Elementary Materials Component
Judd Hall
5835 Kimbark Ave.
Chicago, IL 60637

Minnesota connection:

Kay Anderson, Everyday Lrng. Rep.
13420-60th Place N. #140
Plymouth, MN 55446
612.559.9401, fax 612.559.5410
KXAnderson@tribune.com

In use in at least 20 Minnesota school districts. See SciMath^{MN} website for additional Minnesota contacts.



Information obtained from project developers, publishers, websites, and summaries shared at the Great Plains Curriculum Showcase. Please bring additions or corrections to the attention of Nancy Nutting, SciMath^{MN} phone: 612.296.8025 fax: 612.297.7340 e-mail: nnutting@inet.educ.state.mn.us, website: www.informns.k12.mn.us/scimathmn

Middle School Curriculum Projects

Connected Mathematics Project (CMP)

Michigan State University

Project Directors: William M. Fitzgerald, Glenda Lappan, Elizabeth Difanis Phillips, James T. Fey, Susan N. Friel

The Connected Mathematics Project curriculum is designed to enhance student knowledge of mathematics that is rich in connections for grades 6-8. Each grade consists of eight units developing a major concept or cluster of related concepts over a series of six to nine problem investigations. Teachers use the learning cycle – launch, explore, and summarize – to lead investigation of a problem. Students work as a whole class, small group, and individually to explore problems. Alternative assessments are built into the curriculum. All four Minnesota Middle School Standards (Number, Algebra, Geometry, and Probability/Statistics) are covered in this program.

All grades available.

Publisher:

Scott Foresman•Addison Wesley
1900 East Lake Avenue
Glenview, IL 60025
800.535.4391, fax 847.486.3966
<http://www.awl.com/dsp>

For additional information, contact:

Kathy Burgis, Project Manager
Michigan State University
A-715 Wells Hall
East Lansing, MI 48824-1050
517.432.2870, fax 517.432.2872
burgis@math.msu.edu
<http://www.ns.msu.edu/CMP/cmp.html>

Minnesota connections:

A number of districts have recently adopted CMP (e.g., Hopkins, Richfield, St. Louis Park, Shakopee, Wayzata and White Bear Lake). Contact Arnie Cutler for specific contact information: 612.626.8326, fax 612.626.7131, cutler@geom.umn.edu.

Don Kline, Sales Rep.
Scott Foresman•Addison Wesley
26435 Edgewood Road
Shorewood, MN 55331
612.474.1893
donkl@aol.com

Six Through Eight Mathematics (STEM)

Published as: **Math Thematics**

University of Montana

Project Directors: Rick Billstein

The STEM Project represents a complete three-year middle school (6-8) mathematics curriculum. Students gain a firm understanding of important mathematical concepts, relevant to their lives and connected to other content areas, while being assured of a comprehensive preparation for high school through extensive algebra and geometry strands. A variety of assessment methods are used and embedded into the student materials through ongoing assessment exercises, student journals, module assessment, portfolio projects, and skills and problem-solving practice.

All units available.

Publisher:

McDougall Littell
1560 Sherman Ave.
Evanston, IL 60204
800.323.5435, fax 800.733.2098

For additional information, contact:

STEM, Department of Mathematical Sciences
University of Montana
Missoula, MT 59822-2491
406.243.2603, fax 406.243.2674
barb@selway.umt.edu or rickb@selway.umt.edu
<http://www.math.umt.edu/~stem/>

Minnesota connections:

North St. Paul-Oakdale-Maplewood is using the materials in two middle school classrooms at grade 7.

Contact Judy Rohde
John Glenn Middle School
1560 E. Cty. Rd B
Maplewood, MN 55109
612.770.4651

The Development of an “Achieved” Curriculum for Middle School Mathematics

Published as: **Mathematics in Context (MiC)**

University of Wisconsin-Madison

Project Director: Thomas Romberg

The *Mathematics in Context (MiC)* project is a comprehensive mathematics curriculum for the middle grades (5-8) that reflects the content and teaching methods of the *NCTM Standards*. Over forty units were developed cooperatively with the Freudenthal Institute in the Netherlands. The units are organized into four mathematical content strands: Number, Algebra, Geometry, and Probability/Statistics; all four Minnesota Middle School Standards are covered by this program. Each of the units uses problem situations of interest to students, involving ideas from several domains, emphasizing the interconnectedness of mathematical ideas.

Nearly all units are currently available.

Publisher:

Encyclopaedia Britannica
3105 Michigan Ave.
Chicago, IL 60604
800.554.9862
fax 312.347.7966
info@ebec.com
<http://www.ebec.com>

For additional information, contact:

National Center for Research in Mathematical Science Education
Wisconsin Center for Education Research, School of Education
University of Wisconsin-Madison
1025 Johnson St.
Madison, WI 53706
608.263.3605, fax 608.263.3406
<http://www.wcer.wisc.edu>

Minnesota connection:

Thomas Post
University of Minnesota
240 Peik Hall, 159 Pillsbury Drive SE
Minneapolis, MN 55455
612.625.0069.
postx001@staff.tc.umn.edu.

Mathematics Through Applications Project

Institute for Research on Learning

Project Directors: Shelley Goldman, Ray McDermott, James Green, George Pake

In this project, middle school students will apply the process of mathematical modeling to real-world problem situations through projects requiring regular use of technology. Call or check website for availability.

Self-published by:

Institute for Research on Learning
Doris Perkins, Project Coordinator
2550 Hanover St.
Palo Alto, CA 94304
415.687.7900, fax 415.614.7957
doris_perkins@irl.org
<http://www.irl.org/mmap/>

Seeing and Thinking Mathematically in the Middle Grades (STM)

Published as: **MathScape: Seeing and Thinking Mathematically**

Educational Development Center (Newton, Massachusetts);
Shell Centre for Mathematical Education (University of Nottingham, England); and
EdMath Curriculum Services (Victoria, Australia).

Project Directors: Glenn Kleinman, Elizabeth Bjork

MathScape: Seeing and Thinking Mathematically is a comprehensive, research-based program for middle school mathematics (6-8). Materials were designed to be mathematically clear and pedagogically effective with diverse populations of students using: hands-on activities, visualization, qualitative graphing, creative activities, personal experiences, relevant context and themes, communication of mathematical ideas, and use of mathematical tools.

Units are available in two formats: modular and hard cover.

Publishers:

Heinemann, Inc. currently has four
thematic units available.
361 Hanover St.
Portsmouth, NH 03801-3912
800.541.2086, fax 800.847.0938

The full curriculum will be available from
Creative Publications
1300 Villa Street
Mountain View, CA 94041
415.988.1000 or 800.624.0822 or
888.MATH FUN
fax 800.624.0821
<http://www.creativepublications.com>

Minnesota connections:

Lisa Ledmon
535 Andall St.
Lino Lakes, MN 55014
612.464.9600 x4272
fax 612.464.9344
Calabee@aol.com

For additional information, contact:

Amy Brodesky
Educational Development Center
55 Chapel Street
Newton, MA 02158
617.969.7101

Mark Hedin
Anoka-Hennepin Schools
Fred Moore Jr. High
1523 5th Ave.
Anoka, MN 55303
612.506.5000
fax 612.506.5003
hedin@anoka.k12.mn.us

Information obtained from project developers, publishers, websites, and summaries shared at the Great Plains Curriculum Showcase. Please bring additions or corrections to the attention of Nancy Nutting, SciMath^{MN}
 phone: 612.296.8025
 fax: 612.297.7340
 e-mail: nnutting@inet.educ.state.mn.us,
 website: www.informns.k12.mn.us/scimathmn

High School Curriculum Projects

Applications/Reform in Secondary Education (ARISE)

Published as: **Mathematics: Modeling Our World: Real Problems, Real Life, Real Math**
 Consortium for Mathematics and Its Applications (COMAP)

Project Directors: Landy Godbold, Solomon Garfunkel

ARISE is a comprehensive high school curriculum (9-12) that encourages students to learn and use mathematical tools to explore a broad range of real-world themes in Algebra, Geometry, Probability/Statistics, and Discrete Mathematics. The curriculum uses: true modeling to teach mathematics, hands-on activities, collaborative learning experiences, authentic assessment materials, video, software, and graphing calculator activities.

Course 1 is now available. Courses 2 & 3 will be available August '98. Examination materials are available in print or on a cd-rom disk.

Publisher:

Southwestern Publishing Co.
 5101 Madison Road
 Cincinnati, OH 45227-9985
 800.824.5179

For additional information, contact:

COMAP
 57 Bedford Street, Suite 210
 Lexington, MA 02173
 800.77COMAP or 617.862.7878
 fax 617.863.1202
info@comap.com
<http://www.comap.com>

Minnesota connections:

Sharon Stenglein
 Mathematics Specialist
 MDCFL
 635 Capitol Square Bldg.
 550 Cedar Street
 St. Paul, MN 55101
 612.296.4070
 fax 612.296.3775
sharon.stenglein@state.mn.us

Arnie Cutler
 Geometry Center
 Lind Hall
 207 Church St. S.E.
 Mpls., MN 55455
 612.626.8326
 fax 612.626.7131
cutler@geom.umn.edu

Connected Geometry Project

Educational Development Center

Project Directors: Albert A. Cuoco, June Mark

Connected Geometry is designed to help everyone engage in meaningful mathematical activity by offering students a chance to understand and appreciate the relationships and unifying themes within mathematics, and to connect their previous experiences to mathematics. Using a variety of tools (technology, paper cutting and folding, model building), the curriculum integrates geometry with probability, analysis, number theory, algebra, topology, and linear algebra. Individual modules may be used as replacement units in existing courses. Call or check website for availability.

Publisher:

Everyday Learning
 P.O. Box 812960
 Chicago, IL 60681
 800.322.MATH, fax 312.540.5848
<http://www.everydaylearning.com>

For additional information, contact:

Education Development Center, Inc.
 55 Chapel St.
 Newton, MA 02158-1060
 617.969.7101 OR
 Jack Jansseen at jackj@edc.org
<http://www.edc.org/LTT/lthome/>

Core-Plus Mathematics Project (CPMP)

Published as: **Contemporary Mathematics in Context: A Unified Approach**

Western Michigan University

Project Directors: Arthur F. Coxford, Christian R. Hirsch, James T. Fey, Harold L. Schoen

Core-Plus is a four-year integrated series consisting of a sequence of three courses for all students, plus a fourth-year course continuing the preparation of students for college mathematics. The curriculum builds upon the theme of “mathematics as sense-making.” Each year the curriculum features four strands: algebra/functions; geometry/trigonometry; statistics/probability; and discrete mathematics. The curriculum emphasizes mathematical modeling, active learning, multi-dimensional assessment, and the use of graphing calculators.

Courses 1 & 2 are available. Course 3 will be published for fall '98.

Publisher:

Everyday Learning
P.O. Box 812960
Chicago, IL 60681
800.322.MATH x5821 or x6282
fax 312.540.5848

For additional information, contact:

Core-Plus Mathematics Project, Department of Mathematics and Statistics
Western Michigan University
Kalamazoo, MI 49008-5152
616.387.4562, fax 616.387.4530
cpmp@wmich.edu,
<http://www.wmich.edu/math-stat/cpmp/>

Minnesota connections:

Kay Anderson
Everyday Learning Rep.
13420-60th Place N. #140
Plymouth, MN 55446
612.559.9401, fax 612.559.5410
KXAnderson@tribune.com

Arnie Cutler
Geometry Center
Lind Hall, 207 Church St. S.E.
Minneapolis, MN 55455
612.626.8326, fax 612.626.7131
cutler@geom.umn.edu

Interactive Mathematics Project (IMP)

San Francisco State University

Project Directors: Diane Resek, Lynne Alper, Daniel Fendel, Sherry Fraser

IMP is a four-year program of problem-based mathematics that integrates traditional materials with additional topics such as statistics, probability, curve-fitting, and matrix algebra. IMP units are generally structured around a complex central problem. Ideas that are developed in one unit are usually revisited and deepened in one or more later units.

Year 1 and 2 materials are currently available. Year 3 available 1998; year 4 in 1999.

Publisher:

Key Curriculum Press
P.O. Box 2304
Berkeley, CA 94702-0304
800.995.MATH, fax 800.541.2442
info@keypress.com
<http://www.keypress.com>

For additional information, contact:

IMP at 6400 Hollis St., Suite 5
Emeryville, CA 94608
415.332.3328
Department of Mathematics
San Francisco State University
1600 Holloway Ave.
San Francisco, CA 94132
415.338.2251

Minnesota connections:

1997-8 is the fifth year of the implementation in Minneapolis Public Schools.

Contact:

Jane Kostik, IMP Co-Director
Henry High School
2020 43rd Ave. N.
Minneapolis, MN 55412
612.627.2897
jkostik@mpls.k12.mn.us

Jean Stilwell
Henry High School
612.627.2897
jstilwel@mpls.k12.mn.us

Math Connections

CBIA Education Foundation and the Hartford Alliance for Mathematics and Science Education

Project Director: June Ellis

Math Connections is a Secondary Math Core Curriculum Initiative designed to prepare all students for the mathematical demands of the 21st Century. The curriculum bridges the world of education, students, and business to the world of mathematics, reflecting the recommendations of the *NCTM Curriculum and Evaluation Standards*. Connections are made among different areas of math, science and other subject areas, technology, and the real world.

All units available.

Publisher:

IT's ABOUT TIME
84 Business Park Drive
Armonk, NY 10504
800.793.8326
fax 914.273.2227
itstimefor@aol.com

For additional information, contact:

CBIA Education Foundation and the
Hartford Alliance for Mathematics and
Science Education
370 Asylum St.
Hartford, CT 06103-2022
860.244.1942, fax 860.278.8562
mathconx@aol.com
<http://www.mathconnections.com>

For adoption samples, contact:

Carolyn Mitchell
860.244.1136

Systemic Initiative for Montana Mathematics and Science (SIMMS)

University of Montana at Missoula and
Montana State University at Bozeman

The *SIMMS Integrated Mathematics* curriculum constitutes a complete redesign of the 9-12 mathematics curriculum using real-world contexts in an integrated and interdisciplinary approach for all students. The curriculum is divided into six levels that include work in algebra, geometry, trigonometry, analysis, statistics, probability, matrices, and data analysis, as well as graph theory, game theory, and chaos theory. *SIMMS* assumes access to technology. All students complete Levels 1 and 2. In the third and fourth years, *SIMMS* offers students and their parents the opportunity to select courses appropriate to individual needs and interests.

All units available.

Publisher:

Prentice Hall
4350 Equity Drive, P.O. Box 2649
Columbus, OH 43216
800.848.9500 or 800.693.4060
fax 614.771.7361
roni_hutcheson@prenhall.com
<http://www.phschool.com>

For additional information, contact:

Johnny Lott
University of Montana
Missoula, MT 59812
406.243.2696
fax 406.243.2674
ma_jwl@selway.umt.edu

Gary Bauer
401 Linfield Hall
Montana State University
Bozeman, MT 59717-0281
800.693.4060
fax 406.994.3733
gbaueur@metnet.mt.gov.
<http://www.montana.edu:80/~wwwsimms/>

Minnesota connections:

Gary Eliason,
Prentice Hall Rep
519 5th St.
Elk River, MN 55330
phone/fax 612.441.0070
800.292.6043

