Mathematics

Resources for Teaching Mathematics

**National Council of Teachers of Mathematics, NCTM.**
The focus of this association is on mathematics education at all levels preschool through adult. NCTM publishes two journals that include articles on teaching mathematics in higher education: Mathematics Teacher for grades 8 to 14 [1] and Journal for Research in Mathematics Education [2].

A searchable database of mathematical publications, authors, journals, and citations on the Web. [3]

**A Catalog of Mathematics Resources on the WWW and the Internet** (M. Maheswaran, University of Wisconsin, Marathon County).
Comprehensive links to mathematics sites, organized into categories including pure and applied mathematics. Over 100 links under Activities for College and Pre-college Mathematics, although many are K-12. Other categories offer useful information and materials for college mathematics teachers. [4]

**National Science Digital Library (NSDL): Teaching Mathematics in Higher Education.**
A gateway to a wide variety of links for higher education mathematics teachers: projects, programs, assignments, articles, lectures, and much more. [5]

**AcademicInfo: Math Education—Teaching Mathematics.**
Links to everything mathematical from Calculus Animations to U.S. Department of Education reports on mathematics education. [6]

**The Math Forum @ Drexel University: College Faculty Place.**
Selected online sites for college classroom and specific course materials, math projects, software, and amusing math web pages. Also links to professional organizations, listservs, teacher exchanges, and more. [7]

**Recent Articles on Mathematics Education in NOTICES of the American Mathematical Society.**
Full text of a wide variety of articles on mathematics education at all levels.
http://www.ams.org/profession/leaders/emp-articles [9]

**Teaching Tips** (Thomas Garrity and Frank Morgan, American Mathematical Society).
Tips for becoming a more successful teacher of mathematics, with an example from a lecture in calculus.

**Ted Panitz’s Teaching/Learning Website.**
Scroll down the page for links to several articles by Panitz and others on using cooperative learning and writing to reduce math anxiety, increase learning, and create a student-centered learning environment in college math courses.

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**Syllabi and Course Materials in Mathematics**

**MERLOT Mathematics Portal** (Multimedia Educational Resource for Learning and Online Teaching).
The portal for online teaching and learning materials from faculty and educators in higher education around the world.
https://www.merlot.org/merlot/Mathematics.htm [12]

**MIT OpenCourseWare: Mathematics** (Massachusetts Institute of Technology).
Links to free syllabi, course materials, and curriculum in graduate and undergraduate mathematics at MIT.

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**Journals in Mathematics Education**

See the National Council of Teachers of Mathematics entry above on this page.

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**Quantitative Literacy Across the Curriculum**

**What Is QL/QR?** (Bill Briggs, University of Colorado at Denver).
This page offers definitions of quantitative literacy/reasoning set forth in various publications and describes its importance in contemporary life.
http://math.ucdenver.edu/~wbriggs/qr/whatisit.html [14]

**Quantitative Reasoning for College Graduates: A Complement to the Standards, 1998.** (Mathematical Association of America).
An online handbook for implementing a QL program on college and university campuses. Includes goals and expectations (with thorough discussions of rationales); moves from “why” to “actions and strategies” to “assessment.”
http://www.maa.org/programs/faculty-and-departments/curriculum-department-guidelines-recommendations/quantitative-
Center for Mathematics and Quantitative Education at Dartmouth College.
Offers links to resources for college and university QL education in a wide variety of disciplines including art, literature, the sciences, and mathematics. Most are downloadable at no cost.
http://www.math.dartmouth.edu/~mqed/index.html

Quantitative Literacy site of the Mathematical Association of America.
Contains information on publications, reports, organizations and projects concerning Quantitative Literacy.

Colleges with QL/QR Programs:
QuIRK, Carleton College’s Quantitative Inquiry, Reasoning, and Knowledge Initiative.
The material on this site, designed with grants from FIPSE, NSF, and the Keck Foundation, is intended to help institutions “better prepare students to evaluate and use quantitative evidence in their future roles.” The site provides curricular materials for infusing quantitative reasoning throughout the curriculum, assessment, program design, and more.
http://serc.carleton.edu/quirk/index.html
See also the QuIRK page of links to other quantitative reasoning programs and additional QR teaching resources.
http://serc.carleton.edu/quirk/ProgramDesign/elsewhere.html

Macalester College’s Quantitative Thinking Program and graduation requirements are described at http://www.macalester.edu/qm4pp/program/

Quantitative Reasoning Across the Curriculum at Hollins University.
Describes their QR Program instituted in 2001 with Basic and Applied requirements. Links to brief descriptions of QL courses in a variety of disciplines.
http://www1.hollins.edu/homepages/hammerpw/qrhomepage.htm

Mathematics Across the Curriculum at Dartmouth College.
The MATC Project ended in 2000, but this site has their goals, principals, links to MATC courses, and the Evaluation Summary for this five-year project. The resources they compiled are described above with a link to those in higher education.
http://www.math.dartmouth.edu/~matc/

Assessing Quantitative Literacy
Quantitative Literacy VALUE Rubric
http://www.aacu.org/value/rubrics/quantitative-literacy

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Mathematics Resources for Students

**Professor Freedman's Math Help** (Camden County College, Blackwood New Jersey).
This site addresses the learning needs in mathematics of the community college adult learner. Useful for both students and teachers, the site offers math tutorials, homework assignments, video snippets on math topics, information about learning styles, and much more.


Michigan State University Mathematics Resources

**Department of Mathematics.**
The department’s homepage provides numerous Related Links to mathematics information, servers, and projects of interest to mathematics educators.

http://www.mth.msu.edu/ [25]

**Geometry/Topology Website at Michigan State University.**
This site offers streaming videos of the RTG Lecture Series, news and grant information.

http://www.mth.msu.edu/Related/gt/ [26]

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Links