

Mathematics Teacher Resources in CCOL and Web

This handout identifies the most helpful resources for the Mathematics Teacher degree program in the School of Education and for the mathematics courses in the Undergraduate degree program.

For general education resources, see Education Resources in General the Education section of http://www.cambridgecollege.edu/library/ccol_research.cfm

For “Resources in CCOL and Web for General Requirements for All Undergraduate Studies Degree Programs,” see the School of Undergraduate Studies section of http://www.cambridgecollege.edu/library/ccol_research.cfm

Only use the Internet Explorer or Safari browsers. Other browsers may not work in CCOL.

Note: Use both search terms: “mathematics” and “math” for the most complete search.

Journal, document, book, and periodicals in CCOL

On the CCOL HOME page, the *Search here for Education* search box will search these databases:

- Academic Search Premier
- Wilson OmniFile Select Full Text Edition
- Education Research Complete
- ERIC
- PsycArticles
- PsycBooks
- PsycExtra
- PsycInfo
- Research Starters in Education
- SocIndex with Full Text
- Health Source Nursing/Academic Edition
- Ebrary
- CINAHL with Full Text

Relevant full-text journals in our databases include:

- *Mathematics Teaching*
- *International Journal of Mathematics*
- *Journal of Numerical Mathematics*
- *Foundations of Computational Mathematics*
- *Studies in Applied Mathematics*
- *SIAM Journal on Discrete Mathematics*
- *Communications in Contemporary Mathematics*
- *Educational Studies in Mathematics*

Research Starters in Education

“Research Starters are study and research guides...They consist of comprehensive, yet concise topic summary articles of about 3,000 words in length written by researchers, scholars and other subject matter experts.” Use the Research Starters to explore topics and get your research started.

- On the CCOL HOME page, click *Direct to Databases*
- Click *EBSCOHost*
- Click *Databases A-Z*
- Scroll down and click on the title *Research Starters in Education*
- Put a term in the search box and click Search. For example:
 - A search of Math as Subject AND teaching as SUBJECT brought up 19 items.

Note: “Math” was a more effective search term than “mathematics” for Research Starters.

Ebrary Electronic Books in CCOL

To search for teaching mathematics books in the Ebrary Electronic Books collection:

- From the CCOL HOME page, click Direct to Databases
- Click Ebrary Electronic Books
- Click Advanced (to the right of the “Search Ebrary” box)
- Use the drop-down menu of the “Search in” box to search by subject (or title, author, etc.)
 - For example, a *Search in SUBJECT Mathematics AND SUBJECT Teaching* yields 152 books
 - A *search in SUBJECT Mathematics AND SUBJECT Teaching AND SUBJECT Elementary* yields 25 books
 - A *search in SUBJECT Mathematics AND SUBJECT Middle School* yields 5 books
 - A search in SUBJECT Mathematics yields 506 books

Note: “Mathematics” was a more effective search term than “math” for Ebrary.

Research Guides in CCOL

The E-Global Research Guides will help you develop a search strategy and then find your way among the best books, periodicals, associations, government resources, and Internet sites on your topic. To see the Research Guides:

- Click *Research Starters by Subject* from the CCOL HOME page
- Click *e-global Research Guides*
- Click *Science & Technology*
- Click *Mathematics*

Free textbooks online for mathematics

There are many free math textbooks online. All of the sites below list math textbooks in all areas. All can be downloaded and some can also be purchased in print inexpensively. If you find a book that is sufficient for the course you are taking, suggest to your instructor that it be used instead of an assigned text that costs money!

<http://www.merlot.org/merlot/materials.htm;jsessionid=512D36270B4094548D8B5E8CBF0CB04D?sort.property=relevance&materialType=Open+Textbook&keywords=mathematics&category=&newsearchbutton0.x=0&newsearchbutton0.y=0&newsearchbutton0=Search>

<http://collegeopentextbooks.org/opentextbookcontent/open-textbooks-by-subject/math.html>

<http://people.math.gatech.edu/~cain/textbooks/onlinebooks.html>

<http://www.textbookrevolution.org/index.php/Special:Search?search=mathematics&fulltext=Search>

<http://catalog.flatworldknowledge.com/catalog/disciplines/5/titles>

Out-of-print classic books about math <http://digital.library.cornell.edu/m/math/>

Tutorials on Teaching Mathematics

110 materials for teaching math

<http://www.merlot.org/merlot/materials.htm?sort.property=relevance&materialType=&keywords=teaching&category=2513&newsearchbutton0.x=0&newsearchbutton0.y=0&newsearchbutton0=Search>

Teaching quantitative skills in the geosciences

http://serc.carleton.edu/serc/site_guides/quant_teach.html

Teaching mathematics sites

<http://www.dmoz.org/search?q=teaching+mathematics>

Teacher's Place: The Math Forum <http://mathforum.org/teachers/>

National Council of Teachers of Mathematics Resources

<http://www.nctm.org/resources/default.aspx?id=230>

Teaching mathematics sites

<http://fod.msu.edu/OIR/NatSci/mathematics.asp>

Teacher Education Materials Project <http://www.te-mat.org/>

Online Teacher Educator Resources <http://www.amte.net/resources/professional>

Lesson plans

http://www.thegateway.org/portal_seamarksearch/makesearch?past=subject|http://purl.oclc.org/gem/instance/subject/GEM-S/mathematics||mathematics|*

<http://www.eduref.org/cgi-bin/lessons.cgi/Mathematics>

<http://www.nctm.org/resources/default.aspx?id=230>

Recommended Websites

Although not from scholarly journals, useful information can be found on the web. Most of these sites come highly recommended from a national survey of reference librarians.

Note: websites can change and disappear at any time! If the URL doesn't work, try putting the name of the site into Google.

190 math learning materials

<http://www.merlot.org/merlot/materials.htm?sort.property=relevance&materialType=&keywords=learning&category=2513&newsearchbutton0.x=0&newsearchbutton0.y=0&newsearchbutton0=search>

Electronic Library of Mathematics – free journals online

http://www.emis.de/journals/short_index.html

Mostly free resources selected by the Library of Congress

<http://eresources.loc.gov/search~S9/?searchtype=Y&searcharg=mathematics&searchscope=9&submit=SEARCH>

List of math websites from American Mathematical Society <http://www.ams.org/samplings/math-sites/math-sites>

Links to many sites

<http://school.discoveryeducation.com/schrockguide/math.html>

Links to many sites

<http://scout.wisc.edu/Archives/SPT--AdvancedSearch.php?Q=Y&FK=mathematics&RP=10&SR=0&ST=Quick>

“World’s Most Extensive Mathematics Resource” <http://mathworld.wolfram.com/>

Math History

History of Mathematics Archive <http://www.gap-system.org/~history/>

Award-winning site by students <http://library.thinkquest.org/22584/>

Dictionaries etc.

All math terms <http://www.math.com/school/glossary/glossindex.html>

Interactive Math Dictionary (when you're in a term, click Interactive Checkpoints on the left for quizzes that go with the definitions) <http://intermath.coe.uga.edu/dictionary/homepg.asp>

Math Dictionary for Kids <http://www.amathsdictionaryforkids.com/>

Illustrated math dictionaries <http://www.mathsisfun.com/definitions/index.html>
<http://www.mathpropress.com/glossary/glossary.html>

“Middle Years Glossary” <http://mathcentral.uregina.ca/RR/glossary/middle/glossaryab.html>

Animated and illustrated glossary for elementary
http://www.hbschool.com/glossary/math2/index_temp.html

Academic Standards by State

<http://www.nctm.org/standards/content.aspx?id=16909>

<http://www.corestandards.org/the-standards/mathematics>

Academic standards by state <http://www.jesandco.net/asn/viewer/>

Standards for math teacher education <http://www.amte.net/resources/amte-documents>

Statistics and demographics

National Center for Education Statistics

http://nces.ed.gov/search/index.asp?q=mathematics&btnG=Search&output=xml_no_dtd&client=nces&sort=date%3AD%3AL%3Ad1&entqr=3&entsp=a&site=nces

National Assessment of Educational Progress – Mathematics

<http://nces.ed.gov/nationsreportcard/mathematics/>

Trends in International Mathematics and Science Study <http://nces.ed.gov/timss/>

Associations

Mathematics Professional Organizations <http://www.amte.net/resources/professional>

National Council of Teachers of Mathematics <http://www.nctm.org/>

Association of Mathematics Teacher Educators <http://www.amte.net/>

NCSM Leadership in Mathematics Education <http://ncsmonline.org/index.html>

Association of State Supervisors of Mathematics <http://www.assm.us/>

Mathematical Association of America <http://www.maa.org/>

American Mathematical Society <http://www.ams.org/home/page>

**Math Teacher Discussion Forums,
also a good place to get opinions, interview or survey respondents**

<http://mathforum.org/teachers/>

<http://teachers.net/mentors/math/>

<http://mathforum.org/kb/forumindex.jspa>

Video and Audio Podcasts

Google video search

<https://www.google.com/search?q=mathematics&tbo=p&tbm=vid&source=vgc&aq=f>

2000 free math videos <http://www.brightstorm.com/math/>

Khan Academy <http://www.khanacademy.org/>

TED Talks: brief entertaining videos by fascinating people on many topics. There are 108 TED talks on math <http://www.ted.com/search?q=math>

Youtube Education is a filtered Youtube site

http://www.youtube.com/results?search_type=edu&rental=0&uni=3&movies_browse=1&search_query=math&oq=math&aq=f&aqi=g10&aql=&gs_sm=e&gs_upl=310313354101347914121010101210134510.1.11210

Math Videos <http://www.mathvids.com/>

Teacher's Domain

http://www.teachersdomain.org/search/?q=mathematics&fq_grade=PK&fq_grade=PS

Nova from PBS http://www.pbs.org/wgbh/nova/archive/int_phys.html

PBS Teacher's Resources on mathematics

<http://www.pbs.org/teachers/search/resources/?q=mathematics&x=0&y=0>

Itunes U. <http://www.apple.com/education/itunes-u/whats-on.html>

Do You Need Books to Expand Your Research?

Google Books at <http://books.google.com> is amazing!

- Be sure to search it for your subject area!
- Click “Advanced Book Search” and check “Full View Only” to limit the search to full-text results
- “PartialView” can also provide plenty of full-text

<http://www.amazon.com> or <http://www.bn.com> Use these easy search engine to get lists of books on your topic and to read excerpts, but try to get the books from your local library or buy from your local independent bookstore. Or, buy a less expensive used copy from an online independent bookstore at <http://www.bookfinder.com>

If you can't find what you need or you need more, ask yourself:

Who would care about this topic?

Where would they publish what they know?

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